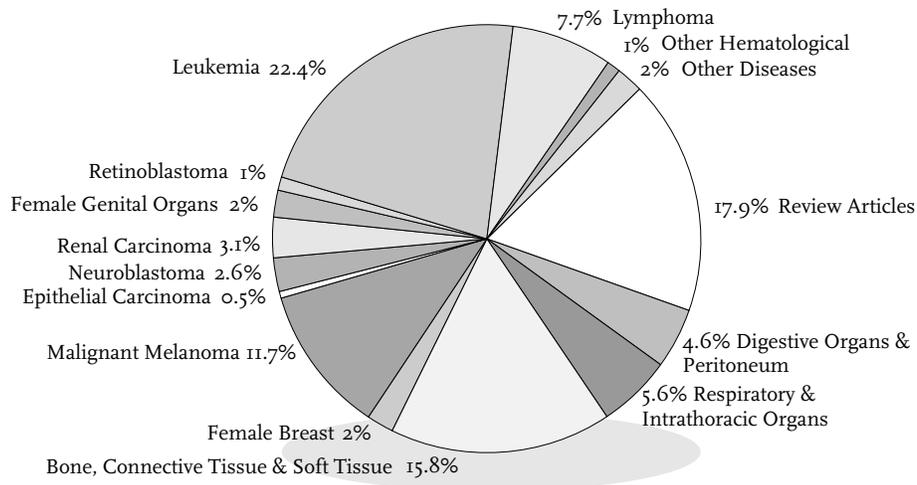


# Infection Related Remission



# Infection Related Remission

Relative Distribution of Reports



References in Appendix Four = 196

Appendix Four contains references from the medical literature in which infection and fever, spontaneous or induced, produced remission. In some of these reports, the authors remarked that there was a possible association between the fever and/or infection and the subsequent remission, in other reports, they do not. The chapter contains 196 references, 116 of which are annotated, and 80 supplemental. Where the full text of a case report appears in another chapter in this volume, pertinent information from the case report is excerpted (n=29). The full text of 18 case reports that appear only in this chapter is also presented. An analysis of the chapter reveals that the largest number of reports of infection-related remission are in leukemia, second in bone and connective tissue cancers, and third in malignant melanoma. A summary of the chapter contents is presented in Table One.

The relationship between intercurrent infection and fever and cancer remission has been recorded in the medical literature since the 1700s. In the late 1800s, Dr. William B. Coley, a young surgeon in New York, was prompted by the loss of his first patient to a sarcoma on her arm to search for information that might help him treat other patients with similar conditions. In his search, he found many reports where cancer remission occurred after an acute bacterial infection, usually erysipelas. Coley reasoned if he injected tumors with erysipelas perhaps he could cause remission. He pursued his ideas, and, after many experiments with different combinations of bacteria and preparation techniques, Coley developed a mixture of two heat-killed bacterias, *Streptococcus pyogenes* (the

causative bacteria for erysipelas) and *Serratia marcescens*, that successfully induced remission in a number of cancer patients. This mixture became known as Coley's toxins, or Mixed Bacterial Toxins as it is now called. The treatment caused a high fever, and, in fact, Coley found that a sustained fever of 102 to 105 degrees F. for at least 24 hours was necessary to produce any effect. Coley's toxins were used in 210 cases of inoperable cancer before 1940. In 104 cases of soft tissue sarcomas, 50% of those injected with the toxins lived from 5 to over 20 years. The success rate with other types of cancer was not as high. For example, out of 50 cases of lymphomas, 19 or 38% lived from 5 to over 20 years, but out of 14 cases of breast cancer, only 2 people survived five years.

Table One: References and Case Reports in Appendix Four

| Chapter Section         | References (#) | Cases (#)<br>(Full Text) | Cases (#)<br>(Excerpt) |
|-------------------------|----------------|--------------------------|------------------------|
| Review Articles         | 35             | 0                        | 0                      |
| Digestive Organs        | 9              | 0                        | 6                      |
| Respiratory Organs      | 11             | 2                        | 1                      |
| Bone, Connective Tissue | 31             | 1                        | 3                      |
| Breast                  | 4              | 0                        | 1                      |
| Malignant Melanoma      | 23             | 5                        | 2                      |
| Epithelial Cancer       | 1              | 1                        | 0                      |
| Neuroblastoma           | 5              | 1                        | 2                      |
| Renal Carcinoma         | 6              | 0                        | 4                      |
| Female Genital Organs   | 4              | 0                        | 1                      |
| Retinoblastoma          | 2              | 1                        | 1                      |
| Leukemia                | 44             | 5                        | 5                      |
| Lymphoma                | 15             | 1                        | 2                      |
| Multiple Myeloma        | 2              | 1                        | 0                      |
| Other Than Cancer       | 4              | 0                        | 1                      |
| Totals                  | 196            | 18                       | 29                     |

# Review Articles

## Fluctuations in the Growth Energy of Malignant Tumors in Man, with Especial Reference to Spontaneous Recession

ROHDENBURG GL

*Journal of Cancer Research* 3: 1918; 193-225

### *Extracted Summary*

The general body reactions noted in man during tumor recession are of several different types. The greatest number of spontaneous regressions have occurred following incomplete surgical removal of the tumor; next in order of frequency during some acute febrile process; and least frequently, in connection with some profound alteration in the metabolic processes of the organism such as extreme cachexia, artificial menopause, or the puerperium.

The observation that a neoplasm may be absorbed subsequent to, or during, an acute infection, opens a most interesting field for speculation. The greater number of cases in this group have occurred after an attack of erysipelas, an observation which has led to the use of toxins of the causative organism as a therapeutic measure. However, further observation shows that recession has also occurred after smallpox, pneumonia, malaria, and acute tuberculosis. No one organism is, therefore, specific in causing regression. In the histories of those cases that are given in detail, there is a common symptom, namely, high temperature, sustained without remission for several days. It is well to emphasize here that not every case of erysipelas, acute tuberculosis, or smallpox has a temperature as high as 104°F continuously for from three to five days. Injections of bacterial toxins, while they do give rise to violent febrile reactions, are not characterized by the continuance of fever in full violence and without remission over a period of forty-eight hours.

In those cases of spontaneous recession reported in the literature where a cause for the recession was reported by the author or inferred from the case report, 64 recessions were attributed to heat, 27 of which were attributed to acute general infection, and the remainder to other forms of heat including heat applied externally.

## The Treatment of Malignant Tumors by Bacterial Toxins as Developed by the Late William B. Coley, M.D., Reviewed in the Light of Modern Research

NAUTS HC; SWIFT WE; COLEY BL

*Cancer Research* 6(4): April 1946; 205-216

### *Extracted Summary*

This study provides sufficient evidence, both clinical and experimental, to justify the conclusion that toxin therapy has clinical value, and that further extensive research is warranted in order to produce better preparations and further refinements in the technique of administration. Reasons are given to explain why the method has not achieved wider recognition in the past. The authors point out that, whereas one of the main criticisms of toxin therapy is that the disappearance of a tumor under toxin treatment is probably due to spontaneous regression, the majority of spontaneous regressions recorded in the literature occurred during or following an acute bacterial infection of some sort.

# A Review of the Treatment of Malignant Tumors by Coley Bacterial Toxins

NAUTS HC; COLEY BL

*Approaches to Tumor Chemotherapy* : 1947; 217-235

## *Extracted Summary*

During the past seven years a thorough examination has been made of the literature of the treatment of malignant tumors by injections of bacterial toxins. Answers have been sought to the following questions: (a) Is there sufficient clinical and experimental evidence to justify the conclusion that the method has therapeutic value? (b) If so, what factors governed success or failure and why did the method not achieve wider recognition? (c) If the answers to these questions warrant further study, what can be done through further research to develop a bacterial product which, when adequately administered, will be consistently effective in the treatment of various types of malignant tumors?

Since there is no comprehensive monograph on the subject it has been necessary to cover the literature thoroughly, examining in detail not only the records of Coley's own cases but those of other investigators. Also studied were those records of cases in which intercurrent bacterial infections were reported to have produced profound effects upon malignant tumors.

The experimental work done by many investigators on the effects of bacterial products on malignant tumors in animals has also been reviewed.

# A Review of the Influence of Bacterial Infection and of Bacterial Products (Coley's Toxins) on Malignant Tumors in Man

*A Critical Analysis of 30 Inoperable Cases Treated by Coley's Mixed Toxins, in which Diagnosis was Confirmed by Microscopic Examination*

NAUTS HC; FOWLER GA; BOGATKO FH

*Acta Medica Scandinavica* 1276(Supp): 1953; 103 pages

## *Extracted Summary*

During the past 14 years the authors have made a critical analysis of toxin therapy, gathering available data on the effects of acute infections or their metabolites, and various forms of inflammation on malignant disease. This includes the beneficial effects of one intercurrent disease upon another; the effects of pyogenic, non-pyogenic or non-pathogenic bacteria or their toxins or enzymes; the effects of viruses; the effects of various inflammatory or antibiotic substances; the effects of physiotherapeutic or chemotherapeutic agents of non-bacterial origin; and all known cases in which so-called "spontaneous regressions" occurred.

This monograph is a critical analysis of the method Coley developed with end-result studies of 30 inoperable cases treated by Coley's toxins. These cases indicate how the toxins worked on a variety of neoplasms, and include cases showing the dangers of inadequate treatment. This group was selected from over 270 in which a complete regression was obtained, as being representative of what could be accomplished by toxin therapy in inoperable malignant disease.

# Host-Tumor Antagonism III: Prolonged Survival of Certain Patients with Cancer. Fortuitous Occurrence or Immunity Mechanism?

PELNER L

*American Geriatric Society. Journal 4(2): Nov 1956; 1126-1139*

## *Extracted Summary*

It is now generally recognized that there are many individual instances of prolonged survival of cancer patients. In addition, there are a smaller number of authenticated cases of spontaneous regression of established cancers. The unusual behavior of carcinoma in situ, the temporary control of acute leukemia by the folic-acid antagonists, and the partial regression of mammary and prostatic carcinoma during hormonal therapy are now definitely established. These facts make it unlikely that cancer can be considered as a completely autonomous, progressive and irreversible new growth.

Work by the Grahams (*Cancer 8 (1955) 409*) suggests that some patients with cancer elaborate the antibodies corresponding to their tumor, especially in instances of favorable lesions that respond satisfactorily to treatment. On the other hand, Jones (*Transactions of the New York Academy of Sciences 18 (1956) 298*) suggests the alarming possibility that survival in patients with cancer is actually shorter with treatment. Unfortunately, we do not yet know all the determinants in cancer, but obviously the problem is vastly more complicated than the statement, "Early cancer can be cured." The author reviews the pertinent literature on the subject of host-tumor immunity, spontaneous regression, and prolonged survival from cancer.

An appreciable number of spontaneous regressions occurred after acute infections. The infection was usually erysipelas, but in a few instances it was smallpox, malaria or acute tuberculosis. Clinically, the important event seems to have been a continuous fever of 104° to 105°F. for three or more days.

## Cures, Regressions and Spontaneous Remissions of Cancer

FAUVET J; CAMPAGNE J; CHAVY A; PIET G  
*La Revue du Praticien 10: 1960; 2349-2384*

## *Extracted Summary*

Infection is frequently present in cases of spontaneous recovery. The most often mentioned infection is erysipelas. When reading the recorded observations of erysipelas infections, one is struck by the extreme gravity of the infection; fevers of 104°F. for 8 to 15 days, prostration or delirium. The symptoms of typhoid or pneumonia are just as serious. It is possible that these serious bouts with erysipelas could have provoked a great number of spontaneous recoveries. Huth (*Zeitschrift für Krebsforschung und Klinische Onkologie 58 (1952), 524-575*) has collected 58 cases of remission or regression following erysipelas (26 sarcomas, 32 epitheliomas). Employing more stringent criteria, we have selected 17 cases that cover a wide variety of cancer types including many cutaneous epitheliomas, one lymphosarcoma, breast cancers, one testicular cancer, and two cancers of the penis. Erysipelas most often occurred next to the tumor, but this is not absolutely necessary. The primary attributes of the infection are the degree and duration of fever.

Other serious, hyperpyretic infections may have also caused remissions or recoveries. Müller (*Archiv für Klinische Chirurgie 118 (1921), 830*) reports a case in which smallpox may have triggered the disappearance of a breast cancer with regression of adenopathies; in another, smallpox may have caused the regression of a gastric tumor. Typhoid fever may have provoked the regression of an inoperable breast cancer and adenopathies. Plenio (*Archiv für Klinische Chirurgie 34 (1887), 698-700*) has reported the regression of a melanosarcoma after a bout with pneumonia.

Other regressions may have been the results of abscesses and other infections: the recovery from myxosarcoma of the thigh following a serious abscess followed-up for 23 years; recovery followed for 10 years from breast cancer with metastases following an abscess; regression of a cancer of the larynx with metastases after a laryngeal abscess; considerable regression of a gastric cancer following wound infection; recovery of a patient from uterine myosarcoma following high fever and urticarial rash; clinical remission of a multiple myeloma following severe hepatitis. These examples show the variety of infections that can be involved in the regression of cancer. The only point in common is the presence of a high and prolonged fever or a lingering wound infection or abscess. (Noetic Sciences translation)

## Host-Tumor Antagonism XVI: The Effect of One Disease Upon Another

PELNER L

*American Geriatric Society. Journal 8: 1960; 540-549*

### *Extracted Summary*

With the advent of antibiotics, hormones and other specific or near-specific drugs, the modern physician does not often have the opportunity to discern the effect of one disease on another in the same patient. This type of "treatment" was a favorite topic in the old literature of medicine. Occasionally, as in the effect of erysipelas on certain cancers, it led to a therapeutic advance. It is well known that the idea of using cortisone for rheumatoid arthritis first occurred to Dr. Hench (Proceedings of the Mayo Clinic 8 (1933), 430) after he had noted a patient in whom amelioration of the arthritis followed the development of hepatitis.

The salutary effect of certain acute diseases on chronic disease has been known for centuries. Hippocrates, in his aphorisms, cites examples of the cure of certain chronic diseases by acute fevers. It would seem that further investigation of this type of "treatment" should be made. In any case, the methods of therapy used are of great historical interest.

The author reviews the effects of erysipelas, mixed bacterial toxins, cholera, typhus, malaria, tuberculosis, syphilis, and leprosy on the clinical course of cancer

## Spontaneous Regression of Cancer

BRUNSCHWIG A

*Surgery 53(4): Apr 1963; 423-431*

### *Extracted Summary*

Certain criteria for the reporting and acceptance of instances of spontaneous regression of cancer in man are presented and discussed. These criteria include: the presence of macroscopic and microscopic evidence of a malignant neoplasm and/or its spread from site of origin; a period of observation during which macroscopic evidence of malignant neoplasm and/or its spread have disappeared and, if possible, biopsy that confirms the sites of primary or secondary spread have shown no evidence of persistent malignant neoplasm; a record of all treatment during the period of observed regression; roentgenographic evidence alone of pulmonary spread is acceptable only with major reservations and should be accompanied by reports of repeated cytologic study of sputum, and/or bronchial aspirations; the presence of severe infection is also to be recorded.

While the possible effect of infection on the course of malignant neoplastic disease is still a moot question, with general opinion that it is of little or no importance, its influence cannot be categorically disregarded. There is abundant laboratory evidence that it may in some instances impair, at least temporarily, the progress of neoplastic disease.

The author further suggests that a registry of living patients whose histories are acceptable as examples of spontaneous regression be established.

# Spontaneous Regression of Cancer

EVERSON TC

*Progress in Clinical Cancer* 3: 1967; 79-95

## *Extracted Summary*

In an evaluation of cases of spontaneous regression of cancer published in the world medical literature since 1900 or obtained by personal communication to date, we have considered 176 cases to have adequate documentation, including histologic confirmation of the malignancy, to accept as probable examples of spontaneous regression of cancer. The 176 cases of probable spontaneous regression of cancer are tabulated according to type or location of tumors. Spontaneous regression of cancer was most commonly noted in hypernephroma, neuroblastoma, choriocarcinoma and malignant melanoma.

Possible factors which may be responsible for spontaneous regression of cancer include endocrine influences, unusual sensitivity to usually inadequate therapy, fever and/or infection, allergic or immune reactions, interference with nutrition of the cancer, and removal of the carcinogenic agent.

Fever and/or acute infection have frequently been suggested as of importance in cases of spontaneous regression of cancer. In the collected series of cases several of the cases of spontaneous regression of soft tissue sarcoma occurred following acute febrile episodes. Two of the cases of regression of cancer of the colon and one case of regression of malignant melanoma occurred after development of abscesses.

## Host Resistance to Cancer: Review of the Early and Recent Literature

NAUTS HC

*Cancer Research Institute Monograph* 5: 1970; 401 pages

## *Extracted Summary*

This monograph presents the results of an exhaustive literature search of the world medical literature from the 1850s to 1970 regarding host resistance and immune mechanisms in cancer. An extensive bibliography is presented with 775 references to the subject. In conclusion, the author suggests that "it may be extremely important to avoid anything which may weaken or destroy the reticuloendothelial or lymphoid tissues or suppress interferon synthesis or release" and "we must learn more about how to strengthen these defensive forces when cancer does develop, so that patients may combat the disease more effectively. These forces include the ability to evoke delayed hypersensitivity reactions and other types of acute inflammatory reactions, interferon synthesis and release, leukocytosis and adequate antibody production, all of which seem to require an active lymphoreticuloendothelial system."

## Relationship of Causative Factors in Spontaneous Regression of Cancer to Immunologic Factors Possibly Effective in Cancer

COLE WH

*Journal of Surgical Oncology* 8(5): 1976; 391-411

## *Extracted Summary*

The occurrence of spontaneous regression of cancer in humans is discussed, and the literature on cancer immunology is reviewed. A search of the literature from 1900 to 1964 yields 176 cases of spontaneous regression of patients with adenocarcinoma of the kidney, neuroblastoma,

malignant melanoma, and choriocarcinoma. There are three examples of regression following blood transfusion, seven following administration of Coley's toxin, 16 following radiation, and four after an infection or abscess. In 41 patients, regression followed excision of the primary lesion, and in 31, it followed biopsy or partial excision. Ten of the 13 patients with bladder cancer experienced regression when the ureters were transplanted. Spontaneous regression in all cases is assumed to be related to an activation of the immune system. BCG and other bacterial agents are known to stimulate the immune process, and hormone changes may be responsible for some regressions. The study of blocking and unblocking agents appears to be very promising in elaborating the body's immune response. Further areas deserving study are immunosuppression produced by organ transplantation and by major surgery and the production of active and passive immunization.

## The Beneficial Effects of Bacterial Infections on Host Resistance to Cancer—End Results in 449 Cases

*A Study and Abstracts of Reports in the World Medical Literature (1775-1980) and Personal Communications*

NAUTS HC

*Cancer Research Institute Monograph 8: 1980; 225 pgs*

### *Extracted Summary*

In the last 20 years there has been an increasing interest in host resistance factors in cancer and for this reason so-called spontaneous regressions, whether complete and permanent or merely partial and temporary, have been studied intensively by a number of investigators. Certain factors seemed to be associated with the largest number of permanently successful results, namely concurrent acute bacterial infections, bacterial vaccines, or the removal of at least some of the tumor or its metastases. Also of marked benefit in many cases were concurrent febrile or inflammatory episodes occurring without obvious infection.

The present study comprises all the data available on the effect of various infections on cancer. In addition to these data, during the past 27 years end-result studies of various types of cancer treated by bacterial toxin therapy have been made. Some of these have been published, others are in press.

When this study was begun little was known about mechanisms of action of microbial infections or vaccines. Interferon and the prostaglandins had not yet been discovered. The role of iron as an important regulatory factor in host-parasite interactions had not been recognized. All these findings help us to understand how the remarkably beneficial effects of infections and endotoxin and vaccines could occur in cancer patients. It would seem that now a great deal more coordinated clinical, as well as experimental, research is warranted on various aspects of this most hopeful approach to the cancer problem.

## Efforts to Explain Spontaneous Regression of Cancer

COLE WH

*Journal of Surgical Oncology 17(3): 1981; 201-209*

### *Extracted Summary*

After a study of the 176 cases (Everson and Cole) of spontaneous regression of cancer and recent progress in immunology, the author is convinced stimulation of the immune process is the most important factor in spontaneous regression of cancer. Stimulating factors are numerous, including bacterial products, enzymes, infections, hormones, trauma, etc.

Of the 176 cases reported by Everson and Cole, 71 (40%) were associated with some type of operative trauma. Since the effective anticancer agent interferon is an important protective agent (especially antiviral) in the human body, this product could readily play an important role. Immunoglobulins appear to be possible factors. The blocking and unblocking agents of the Hellströms and associates support this supposition.

Elimination of carcinogens appears important, considering the remarkable disappearance of cancer of the bladder in 12 of 13 patients having diversion of the urine from the bladder to the colon by transplantation of the ureters from the bladder to the colon. Innumerable antigens unknown to us at the present time could act as stimulants to our immune system, and thus cause regression of cancer. Hormonal factors must obviously be considered, but the author is doubtful that they exert an important role.

In our series, the author expected severe infection to be present a few weeks or months on many, many occasions before the regression, but we encountered it in only 8 of the 176 cases. In two cases, an abscess formed around an inoperable tumor of the colon. One of these cases had radiation therapy (3000 rad in 12 days). Did the radiation result in the disappearance of the tumor?—unlikely, but possible. Seven years later a new tumor (many inches from the original site) developed.

The history of a patient with a melanosarcoma of the arm was very dramatic. Six months after the tumor was removed from the arm the patient returned with an infected axillary mass. At operation, an abscess was found which made excision of the tumor impossible; biopsy revealed melanosarcoma. After a few weeks, the wound healed, the mass disappeared, and the patient was known to be alive 20 years later without any evidence of tumor.

In two of our patients with soft tissue sarcoma, the regression occurred following the injection of Coley's toxin, in four patients with neuroblastoma, and in one patient with a bone sarcoma. The toxin was of streptococcus origin, and the dosage sufficient to produce reaction in the patient. This therapy was controversial, but the author has complete trust in Dr. Coley's clinical observations. We know that immunity to bacteria is unrelated to immunity to tumor, but in this case it seems possible that while the patient's immunological facilities were being directed to the streptococcus, his resistance to tumor was likewise being stimulated.

## Bacteria and Cancer: Antagonisms and Benefits

NAUTS HC

*Cancer Surveys (Oxford)* 8(4): 1989; 713-723

### *Extracted Summary*

This survey paper concerning bacterial infection and its effect on cancer is divided into ten sections: early history, recent studies, tuberculosis and cancer, malaria and cancer, syphilis and cancer, epidemiology, infections in leukemia and lung cancer, bacterial toxin therapy, mode of action of bacterial infections or bacterial endotoxins, and clinical programs. There is considerable historical and recent evidence concerning the antagonisms between acute bacterial infections or their toxins and cancer and allied diseases. These data provide renewed incentives to undertake clinical programmes with mixed bacterial vaccines in many countries at the present time.

### SUPPLEMENTAL REFERENCES REVIEW ARTICLES

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Le Eripela y el Eter—el Cancer y la Erisipela  
ESTEVEZ JA  
*Anales de Circulo medico Argentino* 8: 1885; 84-92

Sulla Patogenesi, Eziologia e Cura della Risipola, e della  
Cosidetta Risipola Curatrice  
FRANCESCHI F  
*Bullettino Delle Scienze Mediche (Bologna)* 17: 1886; 31-71

- Ein Beitrag zur Heilwirkung des Erysipels bei Malignen Tumoren  
KLEEBLATT D  
*Munchener Medizinische Wochenschrift* 37: 1890; 107-9
- Tumeurs Malignes et Maladies Infectieuses  
SPRONCK CHH  
*Annales de l'Institut Pasteur (Paris)* 6: 1892; 683-707
- The Treatment of Malignant Tumors by Repeated Inoculations of Erysipelas; with a Report of Ten Original Cases  
COLEY WB  
*American Journal of the Medical Sciences* 105: 1893; 487-511
- The Erysipelas Treatment of Malignant Tumors (Maligne nydannellers paavirkning of erysipelsa)  
SELL A  
*Hospitalstidende (Kopenhagen)* 4: 1895; 389-391
- Maligne Geschwülste und Erysipelatöse Infektion  
BOLOGNINO G  
*Zeitschrift für Krebsforschung und Klinische Onkologie* 6: 1908; 261-266
- A Malignant Tumor Cured by Wound Infection (Een Kwaadaardig Gezwel Genezen Door Wond-Infectie)  
ROTGANS J  
*Nederlands Tijdschrift voor Geneeskunde* 57(2A): 1913; 905-915
- Cancer og Erysipelas  
STRANDGAARD  
*Ugeskrift for Laeger* 76: 1914; 1705-1714
- Beobachtungen über Rückbildung und Heilung grosser Tumoren in Anschluss on Unvollkommene, Diagnostische Eingriffe  
MÜLLER W  
*Archiv für Klinische Chirurgie* 118: 1921; 830-844
- Carcinoma Favorably Influenced by Erysipelas  
RIXFORD E  
*Occidental Medical Times* 18: 1925; 185-194
- Spontanheilung des Carcinoms in ihrer Beziehung zur Strahlentherapie  
STRAUSS O  
*Strahlentherapie* 24: 1927; 672-700
- Erysipele et Cancer: A propos de deux Observation Medites  
LAVEDAN J  
*Paris Medical* 131: 1940; 109-111
- Die Bedeutung der sog, Spontanheilung und Remissionen für die Therapie und Pathogenese der Leukosen und malignen Tumoren  
HUTH EF  
*Zeitschrift für Krebsforschung und Klinische Onkologie* 58: 1952; 524-575
- Infection and Malignant Tumours: Growth of Brown-Pearce Carcinoma in Rabbits Treated with Living or Killed Haemolytic Streptococci  
CHRISTENSEN EA  
*Acta Pathologica et Microbiologica Scandinavica* 46: 1959; 285-295
- Les Guérisons et Régressions Spontanées des Cancers  
FAUVET J; ROUJEAU J; PIET G  
*La Revue du Praticien* 14(17): 1964; 2177-2180
- Editorial: Unproven Methods of Cancer Treatment: Coley's Mixed Toxins  
*A Cancer Journal for Clinicians* 15: 1965; 139-140
- Viruses in the Treatment of Cancer  
WEBB HE; SMITH CE  
*Lancet* 1: 1970; 1206-1208
- Host Immunity and Spontaneous Regression of Cancer Evaluated by Computerized Data Reduction Study  
STEPHENSON HE JR; DELMEZ JA; RENDEN DI; KIMPTON RS; TODD PC; CHARRON TL; LINDBERG DAB  
*Surgery, Gynecology and Obstetrics* 133: Oct 1971; 649-55
- Are Spontaneous Cures, Regressions and Remissions of Cancers Possible? Clinical Study  
ADENIS L; CAPPELAERE P; DULAQUAIS MC; COULOMBEL G; TRIPLET I  
*Lille Medical* 21(1): Jan 1976; 29-36
- Spontaneous Regression of Cancer  
PAPAC RJ  
*Connecticut Medicine* 54(4): Apr 1990; 179-182

# Neoplasms of Digestive Organs and Peritoneum

## Carcinoma Following Pregnancy with Spontaneous Cure

LEVINE W; WEINER S

*American Journal of Obstetrics and Gynecology* 49: 1945; 778-782

### Extracted Summary

Diffuse carcinoma of the peritoneum and mesentery is generally metastatic. It is usually inoperable because of its extensive spread and involvement of adjacent organs. A case is reported in which multiple metastases in the abdominal cavity were found 4 months postpartum. Three years postoperative the patient was pregnant again. In view of her history, the surgical, medical, and pathological departments advised termination of the pregnancy by abdominal hysterotomy and sterilization. Upon operation no evidence of carcinomatous tissue was found.

### SELECTED CASE REPORT

Excerpt from Case Report:...The immediate postoperative course was very stormy. She was markedly distended and vomited; the temperature was persistently elevated, the pulse poor, and outlook grave. After several days the distention diminished, the temperature

declined, food was tolerated, and she appeared much better. The abdominal wound healed by primary union and she was discharged on the fourteenth postoperative day... (Note: See complete text of case report on pages 62-63.)

## Long-Term Survival of Mother and Son with Widespread Metastatic Adenocarcinoma of the Colon

SNYDER W; CLARK RM; RUBINI JR

*Cancer* 21(1): January 1968; 129-133

### Extracted Summary

A woman who had widespread metastatic adenocarcinoma of the colon at laparotomy died more than 14 years later with no clinical evidence of malignancy. In her only son, widespread metastatic carcinoma of the colon was found at laparotomy 9 years ago but at present he is well without any clinical evidence of malignancy. Spontaneous regression of carcinoma of the colon is extremely rare. The possible mechanisms in the two cases presented are discussed.

### SELECTED CASE REPORT

Excerpt from Case Report:...The patient's postoperative course was complicated by wound infection which started on postoperative day 4 characterized by fever to 102°F for 10 days, with a maximum leukocytosis of 15,750/mm<sup>3</sup>. As antibiotics were not in use in 1939, she

made a slow recovery, being discharged on February 12 of that year.

In spite of the dire prognosis, this patient lived 14 1/2 years after the metastatic carcinoma was found.

(Note: See complete text of case report on pages 75-76.)

# Spontaneous Regression of Hepatic Metastases from Gastric Carcinoma

ROSENBERG SA; FOX E; CHURCHILL WH

*Cancer* 29(2): Feb 1972; 472-474

## Extracted Summary

A patient with gastric carcinoma had hepatic metastases proven by biopsy. He survived for 12 years in the absence of therapy, at which time laparotomy revealed a total regression of the tumor tissue in his liver. Though this phenomenon is extremely rare, the spontaneous regression of hepatic metastases from gastric carcinoma can occur.

The presence of abdominal sepsis has often been mentioned in association with regression of tumor tissue in the abdomen. Though infection was not present with regression of the 4 gastric carcinomas mentioned by Everson and Cole, (Spontaneous Regression of Cancer, 1966) intra-abdominal abscesses were present in 2 of 7 reported cases of spontaneous regression of cancer of the colorectum. Although the presence of abdominal sepsis in this patient is of interest, it is clear that no conclusions can be drawn from this small series.

## SELECTED CASE REPORT

Excerpt from Case Report...The patient did well until the 10th postoperative day when he developed progressively severe left upper abdominal tenderness, fever, and leukocytosis. On the 13th postoperative day, an exploratory laparotomy was performed. Purulent material was found throughout the abdomen, although the greatest localization of the inflammation appeared to be in the lesser omental sac near the gastric anastomosis. No perforation could be found, and no discrete abscess could be located. Culture of the abdominal pus revealed alpha streptococcus. Following drainage of the peritoneal cavity, his recovery was uneventful.

By 5 months after discharge, the patient had gained 20 pounds, was entirely asymptomatic, and had returned to work. He has been seen on repeated occasions between 1956 and 1968, and has continued to do well. In 1959, 3 years after surgery, he was noted to have a 1.5 x 1.5 centimeter mobile firm mass present in the left superior cervical region. Clinically, it was thought to be a metastasis, and no diagnostic or therapeutic efforts were instituted. He was next seen 2 years later, and by that time the cervical mass had disappeared...

(Note: See full text of case report on page 64.)

# Spontaneous Regression of Disseminated Gastric Leiomyoblastoma: A 29-Year Follow-Up

PAYSON BA; VASILAS A; GERSTMANN KE

*American Journal of Gastroenterology* 75(4): Apr 1981; 294-298

## Extracted Summary

Spontaneous regression of tumor metastases is a rare phenomenon. We report a patient with gastric leiomyoblastoma with extensive peritoneal metastases who had an incomplete excision of the primary. He has survived 29 years since the diagnosis was first documented. He received no adjuvant therapy.

The author speculates on the cause of this regression. First, this type of tumor is somewhere between leiomyoma and leiomyosarcoma in terms of its malignancy, so it is possible that a tumor with a limited malignancy potential can, after an aggressive stage, reverse itself either spontaneously or after a large portion of the tumor mass is removed. The author suggests a second possible cause of the observed regression could be an increase in immunological resistance. Possibly, the operative trauma and postoperative infection in this case might be contributing factors.

#### SELECTED CASE REPORT

Excerpt from Case Report:...He returned in March, 1957 again with melena. The large mass in the left upper quadrant was easily palpable. A film of the abdomen again revealed the large density occupying the entire left upper quadrant. A gastrointestinal series revealed the mass to have again increased in size and measured 17 centimeters in diameter, displacing the stomach inferiorly and laterally. The patient finally consented to surgery and at exploration via a thoracoabdominal approach, the massive tumor occupying the entire left upper quadrant was observed. It was firmly adherent to the liver, left diaphragm and spleen. The entire parietal peritoneum was studded with neoplastic appearing masses varying from 0.5 to 2 centimeters and were larger than on the initial laparotomy of 1951. Masses were noted on the mesocolon, omentum and serosa of the small intestine. Most of the large tumor mass was removed by excising the greater curvature of the fundus and body of the stomach with the spleen. A good deal of tumor tissue, however, remained attached to the diaphragm and liver. His postoperative course was stormy and complicated by an infected hemo-

thorax requiring thoracotomy and drainage. The pathology report of the stomach specimen again revealed leiomyosarcoma with metastasis to the spleen and omentum.

He was followed by his personal physician and was always found to be in excellent health. He gained considerable weight.

Interval films of the abdomen between the period 1958-1972 revealed a progressive increase in the calcific deposits throughout the entire abdomen, no doubt conforming to the seeding noted at the time of surgery. The calcific deposits vary in size and shape and a good number reveal an area of lucency within the rounded deposits. Films from 1972-1979 reveal no change which we feel represents a static and controlled course.

In September 1979 he returned to the hospital with hematemesis. Gastroscopy revealed no intrinsic pathology except for superficial erosions of the gastric mucosa. He was transfused and bleeding never recurred.

A follow-up gastrointestinal series failed to reveal an evidence of recurrence in the stomach...

(Note: See full text of case report on pages 66-67.)

## Spontaneous Regression of Hepatocellular Carcinoma

### *A Case Study*

LAM KC; HO JCI; YEUNG RTT  
*Cancer 50(2): July 15 1982; 332-336*

#### *Extracted Summary*

A Chinese patient with documented hepatocellular carcinoma (HCC) satisfied the criteria of Everson and Cole for spontaneous regression of malignant tumors. Subsequently he survived a tumor-free period of at least 13 years. During the period of regression, shrinkage of liver coincided with a rise of SGOT to a level comparable to that reported for patients with liver cancer during hepatic arterial ligation and cytotoxic therapy. Postregression liver biopsy from the site of the previous tumor revealed relatively uninflamed HBsAg positive tissue without dysplasia. The case provided the positive end of the survival spectrum in HCC, evidence that regression of HCC might occur by involution rather than maturation, and histologic data suggesting that regressed HCC might be replaced by surrounding tissue instead of leaving behind dysplasia.

Taking all evidence together, it seems reasonable to speculate on the sequence of events in our patient as follows: Interaction of HBV infection with unknown carcinogens produced HCC prior to 1965. The tumor progressively enlarged and metastasized to the lungs. Infection of the tumor with paracolon bacillus or the HBV in 1966 triggered regression, due perhaps to accelerated preprogrammed death of tumor cells as suggested by Willis. (The Pathology of Tumours, fourth edition [London: Butterworth 1967])

#### SELECTED CASE REPORT

Excerpt from Case Report:...In February, 1966 there was an episode of bronchopneumonia. Maximal disturbance was noted in late March 1966 when he had fetor hepatic, jaundice, ascites, and palmar erythema. In addition, he had a persistent fever of 38°C. Liver biopsy confirmed the previous diagnosis of HCC; culture of the

tissue yielded a pure growth of paracolon bacillus that was sensitive to tetracycline and chloramphenicol. Tissue staining for HBsAg was again negative. Administration of tetracycline and later chloramphenicol and streptomycin failed to change the remittent pattern of fever: It persisted for ten days, subsided for five days, and then repeated in

similar cycles for a total period of 1 1/2 months. At the end of this time, the patient felt much improved. The epigastric distension decreased.

Over the next six months, the liver decreased progressively in size. Fluid retention disappeared. He informed us that he had been taking Chinese herbal medicine (vida infra). There had been no change in his food habit. SGOT was again elevated. By mid-November, 1966 finger clubbing and a spider angioma remained as the only abnormal

physical findings. There was no clinical evidence of HCC. A chest roentgenogram was normal. Minimal biochemical abnormalities were still noticeable. Repeat liver biopsy from the location of the previous tumor near the site of the first biopsy showed only slight cellular irregularity and some increase in binucleated hepatocytes. There was no dysplasia. Tissue staining later for HBsAg on this biopsy was positive. Since then, the patient has remained fully functioning...

(Note: See full text of case report on pages 80-81.)

## Spontaneous Regression of Esophageal Carcinoma with Pulmonary Metastases: Case Report

OHWADA S; MIYAMOTO Y; FUJII T; OYAMA T; JOSHITA T; IZUO M  
*Japanese Journal of Clinical Oncology* 20(2): Jun 1990; 193-198

### Extracted Summary

The first description of a spontaneous regression of a primary esophageal carcinoma with progressive growth of multiple pulmonary metastases is reported, and the possible cause of the spontaneous regression is discussed briefly with reference to T cell subsets. A 78-year-old Japanese man underwent an esophageal bypass with gastric substitution for carcinoma of the middle to lower third of the intrathoracic esophagus with aortic invasion. Two months after the operation, multiple pulmonary metastases were documented and were seen to progress gradually over the next six months. Seven months later, all the secondary lesions underwent a complete spontaneous regression. The primary lesion also regressed, but did not disappear completely. It was not possible to establish whether a change in T cell subsets was the cause or an effect of the regression.

### SELECTED CASE REPORT

Excerpt from Case Report...During the interval of tumor regression, the patient sometimes had a high temperature (over 38°C) and was treated with some antibiotics. The patient received therapy neither with

anticancer nor with non-specific immunomodulators. The patient was given Clinimeal (Eisai Co., Ltd.) alone: an elementary diet.

(Note: See full text of case report on page 61.)

### SUPPLEMENTAL REFERENCES DIGESTIVE ORGANS AND PERITONEUM

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Spontaneous Disappearance of Apparently Secondary Growths in Liver

FLETCHER HN

*British Medical Journal* 2: Oct 8 1949; 794

Intraperitoneal Infection and Cancer of the Colon and Rectum

LIECHTY RD; VANOURNY SE; ZIFFREN SE

*Archives of Surgery* 96: 1968; 599-603

Apparently Beneficial Effects of Acute Bacterial Infections, Inflammation or Bacterial Toxin Therapy on Cancer of the Colon or Rectum

FOWLER GA

*Cancer Research Institute Monograph* 10, NY : 1969

# Neoplasms of Respiratory and Intrathoracic Organs

## A Case of Spontaneous Regression of an Untreated Bronchiogenic Carcinoma

BLADES B; MCCORKLE RG

*Journal of Thoracic and Cardiovascular Surgery* 27: 1954; 415-419

### Extracted Summary

No explanation has been found for the regression of this lung cancer. The postoperative temperature elevations were not high and cannot be regarded as significant. Drugs used by the patient are not considered important and, as far as it is known, have no carcinolytic properties.

This case represents the only known instance of spontaneous regression of a bronchiogenic carcinoma. Despite evidence of metastasis to the skull, the patient remains in good health more than five years after the original diagnosis of bronchiogenic carcinoma.

### SELECTED CASE REPORT

Excerpt from Case Report:...On July 20, a right thoracotomy was performed which revealed a carcinoma of the lung with involvement of the right hilum and invasion of the mediastinum at the level of the inferior pulmonary artery. A biopsy of the mass was taken and since the lesion appeared inoperable, the chest was closed. Microscopic examination of the tissue revealed an epidermoid carcinoma.

Mitotic figures were present in all microscopic fields and there could be no question about the malignancy of the lesion. The postoperative course was uneventful. The

temperature remained elevated from 38 to 38.5°C for the first three postoperative days and then returned to normal. The patient received 300,000 units of penicillin daily for five days. He was discharged on the ninth postoperative day.

During the postoperative period, roentgenograms of the chest revealed progressive clearing of the pulmonary lesion in the right lung. This became particularly apparent about six months after the exploratory thoracotomy. His general condition remained good...

(Note: See complete text of case report on pages 95-96.)

## Results of the Surgical Treatment of Bronchogenic Carcinoma

SENENIG DM; ROSSI NP; EHREHAFT JL

*Surgery, Gynecology and Obstetrics* 116: 1963; 279-284

### Extracted Summary

The authors present the statistical results of surgeries performed for bronchogenic carcinoma at the University Hospitals, State University of Iowa, from July, 1949 to June, 1960. During the 11-year period, 1,097 patients were found to have pathologically proved lesions and 624 operations were performed.

The types of operations performed included pneumonectomy (283), lobectomy (60), wedge resection (2), and segmental resection (3). The patients were mostly between 50-69 years of age; 224 patients were found to have epidermoid carcinoma, 47 adenocarcinoma, 3 mixed adenocarcinoma and epidermoid carcinoma, and 75 anaplastic carcinoma.

In the group of patients who had pneumonectomies (283) 7 patients developed postoperative empyema. Of these seven patients that developed empyema following pneumonectomy 4 remained alive and 3 have been alive for 5 or more years. Since the 5-year survival rate for patients undergoing pneumonectomy in this series is 22% and these 7 patients who developed empyema have a

much greater 5-year survival rate, the authors suggest that further statistics should be gathered concerning the effect of postoperative empyema on the survival of bronchogenic carcinoma.

## Spontaneous Regression of Bronchogenic Carcinoma with Five-Year Survival

BELL JW; JESSEPH JE; LEIGHTON RS

*Journal of Thoracic and Cardiovascular Surgery* 48(6): Dec 1964; 984-990

### Extracted Summary

A case history of spontaneous regression of bronchogenic carcinoma for a 5-year period is presented. The patient was a middle-aged male with a grade 3, epidermoid lesion. The lesion proved inoperable at thoracotomy, then showed complete radiologic disappearance in the following 6 months. The only factors of possible influence were 2 weeks of postoperative fever coincident with a noncancerocidal amount of irradiation of 1,200 roentgens. This is the first recorded case of complete regression of bronchogenic carcinoma that we can locate in the literature.

Of the many factors thought to be partially responsible for instances of tumor regressions reported in the literature, only two, fever and x-radiation, are pertinent in this case. Our patient developed a fever of 100°F. on the fifth postoperative day which persisted for one week and reached 102°F. at one point. After 2 days of normal temperature there was a sudden rise to a high of 103.2°F. and 102°F. the next day. Penicillin was started at this point and subsequently he became afebrile. The only clinical explanation for this was a possible transient pneumonitis without any specific organism in the sputum culture. In retrospect, the patient believed that he had had intermittent fever and occasional chills for the first month or two after returning home.

(Note: See complete text of case report on pages 97 and 100.)

## Spontaneous Regression of Malignant Disease: Report of Three Cases

MARGOLIS J; WEST D

*American Geriatric Society. Journal* 15(3): March 1967; 251-253

### Extracted Summary

Three documented cases of spontaneous regression of malignant neoplastic disease are presented. In 2 of the cases, severe infection was associated with the regression of cancer. In the third case the removal of possible carcinogenic factors may have been related to the host resistance to cancer. The importance of reporting and studying cases of spontaneous regression of cancer in man is emphasized.

### SELECTED CASE REPORT

A 58-year-old male entered the hospital in October 1953 complaining of a productive cough of one year's duration with a 20-pound weight loss during the previous six months. He smoked more than two packages of cigarettes daily. There had been no hemoptysis. X-ray examination showed a mass in the right upper lobe.

In February, 1954, a thoracotomy was performed, and the posterior segment of the right upper lobe was resected. The findings on pathologic examination were suggestive of adenocarcinoma of the lung. Because of the uncertainty of the diagnosis, the chest was closed and the specimen sent away for consultation with the Armed Forces Institute of Pathology. The diagnosis of adenocarcinoma was confirmed. On September 8, 1954, a right pneumonectomy

was performed. The surgeons felt that the entire tumor was not removed, and the patient was so informed. Adenocarcinoma was now found in the remainder of the upper lobe.

After the second operation the patient's course was persistently downhill, with marked weight loss and constant chest pain that required narcotics. He was seen frequently for follow-up examinations. Every three or four months purulent fluid would reaccumulate in the chest space and would rupture through to the outside and drain spontaneously. Afterwards, the patient would obtain some relief for several weeks. These reaccumulations persisted until 1962 and then stopped, whereupon he began to improve.

Except for several bouts of pneumonia of the left lung, this patient has done quite well. It is now approximately twelve years since surgery, and there is no evidence of tumor.

Comment: The development of empyema necessitatis

and several bouts of pneumonia postoperatively in this patient provides another illustration that fever and/or infection may be related to spontaneous regression of neoplasms.

## Possible Immune Factors in Spontaneous Regression of Bronchogenic Carcinoma

*Ten-Year Survival in a Patient Treated with Minimal (1,200R) Radiation*

BELL JW

*American Journal of Surgery* 120: 1970; 804-806

### *Extracted Summary*

A case is reported of ten-year survival after thoracotomy for inoperable bronchogenic carcinoma. Apparent spontaneous regression has been followed by freedom from development of a new pulmonary tumor in spite of the patient's continued smoking. Immunologic factors affecting this course are suggested by the demonstration of immune lymphocytes in the patient's peripheral blood which depress the growth of tumor cells from a donor with lung cancer.

In 1964 the patient reported herein was recorded (Bell JW et al., *Journal of Thoracic and Cardiovascular Surgery* 48 (1964) 984) as a five-year survivor after apparent spontaneous resolution of an extensive, poorly differentiated neoplasm of the left lung, having received minimal (1,200 r) radiation.

During the first two postoperative weeks two events occurred which may have influenced the subsequent course. He was given a total tumor dose of 1,200 r through anterior and posterior portals. He manifested fever from 100° to 103°F during most of this period. At discharge there was no change seen on the chest film.

When seen five and a half months later, the patient had gained nearly 40 pounds, and the chest film revealed essentially complete clearing of the previous lesion. The patient has been followed at yearly intervals thereafter, and the chest film has remained clear up to this ten-year interval.

## Effect of Postoperative Empyema on Survival of Patients with Bronchogenic Carcinoma

TAKITA H

*Journal of Thoracic and Cardiovascular Surgery* 59(5): May 1970; 642-644

### *Extracted Summary*

Up to April 1964, 192 cases of pulmonary resections for bronchogenic carcinoma were performed at the Roswell Park Memorial Institute. Postoperative empyema was observed in 14 cases (7.3%). Among the patients who underwent pulmonary resection and did not develop empyema (93 who were treated by pneumonectomy and 85 by lobectomy), the surgical mortality rate was 16% (31 patients), and the 5-year survival rate was 27% (40 patients). The surgical mortality rate of the 14 patients whose conditions were complicated with empyema (9 treated by pneumonectomy and 5 by lobectomy) was 7% (1 patient), and the 5-year survival rate was 54% (7 patients).

In all but two of the fourteen patients with empyema, infective organisms were cultured. Staphylococcus was the most common organisms in both 5 year survivors and in nonsurvivors.

# Postoperative Empyema Improves Survival in Lung Cancer

## *Documentation and Analysis of a Natural Experiment*

RUCKDESCHEL JC; CODISH SD; STRANAHAN A; MCKNEALLY MF  
*New England Journal of Medicine* 287(20): Nov 16 1972; 1013-1017

### *Extracted Summary*

The medical literature of the 19th century is dotted with reports of remissions of cancer, apparently induced by concurrent bacterial infection. On the basis of these clinical observations, programs of active cancer therapy using living micro-organisms or bacterial extracts were introduced. By 1906, Coley had reported a series of 31 patients who experienced remission or apparent cure of histologically confirmed sarcomas after treatment with extracts of killed hemolytic streptococci and *Serratia marcescens*. Forty-seven years later, when Nauts described the long term follow-up results of 30 inoperable cases of human cancer treated with Coley's "toxins," 20 of the 30 patients had survived for more than 20 years. Despite these successes, the effect of bacterial extracts proved highly variable, and the overall results disappointing. Nevertheless, sporadic reports continue to suggest that the products of bacterial infection may have a beneficial effect on survival of patients with certain cancers.

In the present report, a retrospective chart study revealed improved survival rates in patients in whom empyema developed after surgical resection for carcinoma of the lung. The overall five-year survival rate for the empyema group of 18 patients was 50%, compared to an 18% five-year survival rate in a control group consisting of a random 34 patient sample of resected cases at this institution. On further analysis, the beneficial effect of intrapleural infection was found principally in patients with tumor limited to the lung and its draining regional lymph nodes. Six of seven patients in this group survived for five years. The protection from recurrent cancer conferred on these patients by postoperative empyema may have been mediated by the activation of regional cellular immune mechanisms. The reaction between immune lymphocytes and bacterial antigens is believed to release lymphokines and activate macrophages that nonspecifically destroy residual tumor cells while containing the intrapleural infection.

## Anaplastic Lung Cancer with Metastases

### *Case Report of a Fifteen-Year Survival*

GREENTREE LB  
*Ohio State Medical Journal* 69(11): Nov 1973; 841-843

### *Extracted Summary*

A computerized data evaluation of spontaneous regression of cancer in 224 patients reported upon in the medical literature concludes that an infection superimposed on a neoplasm may be related to the spontaneous regression of cancer; that infection can possibly enhance the host's natural resistance against cancer!

A patient with a poorly differentiated bronchogenic carcinoma with hilar lymph node metastases is presented as a case report. It is conjectured that a preoperative infection followed by a postoperative empyema with its anamnestic immune reaction played a role in the prolonged survival in this patient; that it may be a prime reason why this patient is living and well 15 years after a lung resection and chemotherapy for lung cancer.

Since one cannot consider doing a clinical trial of induced preoperative infection and postoperative empyema, and since statistical significance is attached to the presence of staphylococcal and hemolytic streptococcal bacteria in this patient and other long-term survivors of bronchogenic carcinoma, the preoperative and postoperative use of attenuated live staphylococcal and streptococcal bacterial vaccines may prove to be a safe, valuable adjunct to cancer surgery, radiation, and chemotherapy in prolonging cancer survival.

## SELECTED CASE REPORT

A 59-year-old white farmer was admitted to The Ohio State University Hospitals on November 11, 1957. His chief complaints were a persistent cough of several months duration, progressive weakness, and a weight loss of 5.4 kilograms (12 pounds). The cough had increased in severity with moderate sputum production. Hemoptysis had occurred only once. Three weeks prior to this admission, he developed a chill, fever, and "flu" symptoms. These subsided except for the persisting cough. Chest films of this well-developed, well-nourished, anxious patient showed a large, well-delineated mass in the posterior segment of the upper lobe of the right lung extending into the hilum. Preoperative bronchoscopy on November 14, 1957, showed no gross evidence of a tumor, but bronchial aspirations were reported to contain nests of malignant cells. Right pneumonectomy and mediastinal lymphadenectomy was performed on November 18, 1957. Examination of the chest at surgery showed a large cystic tumor occupying a large portion of the right upper lobe of the lung with metastatic lymph nodes in the hilar structures. It was not possible to do a right upper lobectomy because the neoplasm had extended into the lower lobe. The pathologist reported a poorly differentiated, squamous cell carcinoma of the bronchus with extensive spread of the neoplasm through the bronchial wall into the lung parenchyma. Extensive necrosis of the tumor mass was noted along with metastatic involvement of a parabrachial lymph node. This patient was included in the US Public Health Service Study of adjuvant chemotherapy and received 6 milligrams nitrogen mustard intrapleurally at the time of the operation, 6 milligrams intravenously on the day of the operation, and also on the first two postoperative days for a total of 24 milligrams of nitrogen mustard.

He was discharged from the hospital on November 27, 1957. Discharge diagnosis was poorly differentiated bronchogenic carcinoma of the right lung with lymph node metastasis. Discharge prognosis was guarded because of the metastasis to the lymph nodes.

The patient was readmitted to University Hospital one month later for an oleothorax which was being done at that time to fill up the post-pneumonectomy space; 1,200 cc of sterile olive oil was injected into the right pleural cavity. He was discharged two days later with no problems being encountered. He was readmitted three days later as an emergency. He was found to have an infected oleothorax with a spiking temperature of 38.9°C. to 39.4°C. The pleural space was drained of the infected olive oil. Culture of this fluid yielded gram-positive cocci and *Staphylococcus aureus* sensitive to penicillin, erythromycin, and chloramphenicol. Treatment consisted of intrapleural injections of penicillin, intrapleural irrigations with Chlorpactin solutions, and parenteral penicillin and streptomycin. The patient was discharged from the hospital 21 days later greatly improved. He went home to his rocking chair on the farm expecting to die. He did not. About a year later, he was treated with electroshock therapy for a psychotic depression reaction. He recovered from this too. After sitting at home for about five years, he finally decided he was cured and went back to work. A letter received from him in February 1972 states that his general health is good and that he is working every day and has been doing so for the past nine years. One year later, a neighbor reports that this patient, now 74 years of age, is living and well 15 years after being treated for a metastatic, anaplastic, bronchogenic carcinoma complicated by a postoperative empyema.

## Spontaneous Regression of a Lung Cancer Accompanied with Empyema: A Case Report

SAWAMURA K; MORI T; CHIKAMORI J; IUCHI K; NAGAOKA U; IIOKA S; MANJO S; YOKOYAMA K;  
FURUSE K; FUKUOKA M; MATSUDA J

*Japanese Journal of Cancer Clinics (Gan No Rinsho) 21(5): 1975; 345-348*

### Extracted Summary

A 43-year-old man who complained of hemoptysis and exertional dyspnea, showed on x-ray a round tumor shadow about 6 centimeters in diameter in the right middle lung. He was diagnosed as having adenocarcinoma, based on cytological examination by percutaneous needle biopsy and flexible bronchofiberscopy. Accompanied by right-sided empyema and high fever, the tumor shadow showed remarkable regression in about 2 months, and, after treatment of the empyema, the patient arrived at a good condition without any signs of malignancy. The patient was discharged from the hospital one year and 8 months after occurrence of the initial symptoms of lung cancer.

# The Relationship Between Postoperative Empyema and Long-Term Survival After Pneumonectomy

## *Results of Surgical Treatment of Bronchogenic Carcinoma*

LAWAETZ O; HALKIER E

*Scandinavian Journal of Thoracic and Cardiovascular Surgery* 14(1): 1980; 113-117

### *Extracted Summary*

In order to present the possible influence of postoperative empyema on the survival rate of patients with bronchogenic carcinoma, who had been treated by pneumonectomy, a retrospective investigation was made upon 207 patients over a 10-year period. In patients with and without a complicating postoperative empyema, a cumulative survival rate of 0.04 and 0.26, respectively, was found. The difference was not significant. However, other retrospective investigations on the influence of postoperative empyema on long-term survival after surgical treatment for bronchogenic carcinoma have shown results that might stimulate prospective studies on the subject. Furthermore, this investigation showed that the probability of long-term survival was highest in patients under 60 years of age, when the bronchogenic carcinoma is a planocellular carcinoma located in the left lung without postoperative empyema. Among pneumonectomized lung cancer patients, the mortality was above expectancy, even 8-10 years after operation compared with the estimated survival rate in the average population.

### SUPPLEMENTAL REFERENCE RESPIRATORY AND INTRATHORACIC ORGANS

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Empyema Thoracis

LEROUX BT

*British Journal of Surgery* 52: 1965; 89-99

# Neoplasms of Bone, Connective Tissue, and Soft Tissue

## On the Curative Action of Erysipelas in Cases of Tumors

MISHTOLT AD

*London Medical Record* 12: Jan 15 1884; 11-12

### *Extracted Summary*

Dr. A. D. Mishtolt of Nicolaiev, details an instance of what is sometimes termed 'erysipelas medicatrix.' A middle-aged sailor was admitted in the Nicolaiev Marine Hospital, on account of a sarcomatous tumour rapidly growing within the triangle between the crura of the left sternocleidomastoid muscle. The new growth measured 8 x 4 centimeters. Following a recommendation by Professor Panas, the author resolved to treat the case by parenchymatous injections of 5% solution of chloride of zinc. On the eleventh day after the second injection, erysipelas appeared, starting

from the point of the shoulder, and anterior and posterior aspects of the chest. The inflammation ceased to spread on the twelfth day from its appearance. All the while mucoserous fluid oozed from the opening leading into the tumour, the latter becoming softer, and dwindling from day to day. Six weeks later the patient left the hospital, having no trace of the tumour. This was about a year ago. At present, another sarcoma grows on the same patient, its site now being near the left nipple.

## The Curative Effect of Erysipelas on Malignant Disease

BRUNS P

*Burns Beitrage für Klinischen Chirurgie 3: 1888; 443-466*

### *Extracted Summary*

The author has collected 14 cases of undoubted malignant disease, in which erysipelas occurred either accidentally in the course of the disease, or was produced by inoculation. Of these cases, 5 were sarcoma (diagnosis confirmed by microscope), 3 were epithelioma, and 6 cases were either carcinoma or sarcoma. Of the 5 cases of sarcoma 3 cases were fully and permanently cured. He discusses the effect of erysipelas, not only upon sarcoma and carcinoma, but also upon lupus, keloid, and specific lesions.

## Contribution to the Knowledge of Sarcoma

COLEY WB

*Annals of Surgery 14: 1891; 199-220*

### *Extracted Summary*

That erysipelas has an influence upon malignant disease has long been recognized in a general way, but only recently has there been any scientific attempt to determine the nature and limits of that relation. The cases that could throw light upon this question until of late have been few and isolated, and, consequently, it has been impossible to draw absolute or far-reaching conclusions, but the evidence has been steadily accumulating. Cases reported by Bruns (*Beit f Klin Chir* (1888), 443), Winslow [*London Medical Record* ii (1884)], Kleeblatt [*Munch Med Wochenschrift* 7 (1890)], and Coley are reviewed in which erysipelas infection occurred or erysipelas toxins were injected.

## The Value of Inoculations with Septic or Toxic Agents in the Treatment of Malignant Neoplasms

WYETH JA

*Journal of the American Medical Association 22: 1894; 985-992*

### *Extracted Summary*

Sarcoma may be cured by septic infection. The sepsis of erysipelas exercises the most powerful curative influence. Infection from the streptococcus pyogenes aureus will, in my opinion, also cure sarcoma. The injection of the sterile products of Fehleisen's coccus will also cause these neoplasms to disappear.

### SELECTED CASE REPORT

A young girl was admitted on account of a sarcoma of the leg, for which an amputation was performed on the middle of the thigh. Several months later the growth recurred in the stump and Dr. Gerster removed the remaining portion of the extremity at the hip joint. A

second recurrence took place in the line of amputation at the hip, and presented as it developed an extensive cauliflower-like mass, dirty, foul, granulating, and from which bleeding occurred at intervals. This patient was abandoned to die, but was accidentally inoculated with erysipelas in the

stump. Large sloughing masses were cast off, the wound finally healed, all traces of the sarcoma disappeared, and she is now, more than five years after the attack of erysip-

elas, living and healthy with no sign of the terrible malady from which she so narrowly escaped, excepting the loss of the extremity.

## Inoperable Sarcoma Cured by Mixed Toxines of Erysipelas

WYETH JA; MCCOSH AJ  
*Annals of Surgery* 25: 1897; 174-178

### *Extracted Summary*

The topic of this surgical clinic is the use of mixed toxins of erysipelas in the treatment of sarcomas. Dr. William Coley presented a case of inoperable sarcoma of the shoulder in which mixed toxins of erysipelas produced a "cure."

### SELECTED CASE REPORT

Excerpt from Case Report:...On February 9 a stronger solution from more virulent cultures was obtained, which produced severe reactions in doses of two or three minims. The treatment was discontinued on March 17, 1896, since which time no further treatment has been given.

Soon after the treatment was begun the tumor began to shrink in size, and later to break down in places. This

process became more rapid after the stronger solution was begun. By the latter part of March 1896, the tumor had entirely disappeared, the patient had begun to gain rapidly in flesh and strength, and in a few months had entirely regained her twenty-five pounds of lost weight. She is at present in perfect health, and careful examination fails to reveal any trace of the tumor or any glandular enlargement.

(Note: See complete text of case report on page 126.)

## Recurrent Spindle-Cell Sarcoma with Glandular Involvement

*Treated Successfully with the Mixed Toxins (Coley). Sarcoma Cured by Acute Inflammation*

DOWD C  
*Medical Record* 57: Jan 20 1900;

### *Extracted Summary*

A case is reported by Dr. William B. Coley in which the patient had recurrent spindle-cell sarcoma in the parotid gland that was treated successfully by the mixed toxins of erysipelas and *Bacillus prodigiosus*. Dr. Wyeth, in a discussion of the case, stated that his own experience had led him to believe that the beneficial results following the injections of the toxins were due to an acute inflammatory process not directly connected with any special virtue of these toxins.

## A Case of Recurrent Sarcoma with Apparently Spontaneous Cure and Gradual Shrinking of the Tumor

WATSON AL  
*Lancet* 1: Feb 1 1902; 300-301

### *Extracted Summary*

The case of spontaneous cure of a recurrent sarcoma of the back is of interest because nothing similar has been reported.

The author speculates upon the importance of the elevated postoperative fever on the spontan-

eous cure reported in this case. He states, "As I have already stated, there was nothing of the nature of an attack of erysipelas in this case; but although locally no inflammatory phenomena manifested themselves the details of the temperature chart are suggestive. For the first six days after admission the temperature records showed a subnormal and normal range with a minimum of 96.8°F. and a maximum of 98.6°F., being quite unaffected by the operation on November 23rd, 1900; then during the following week a slight upward tendency was noted, a maximum of 99.8°F. being registered on December 3rd, and after the second time to the theatre (on the 4th) the temperature shot up to 101°F., remaining febrile and subfebrile, with daily remission for five days, the highest point reached being 102°F. on the 8th. From the 10th to dismissal on the 13th it was practically normal. Whether this postoperative fever was an important factor in deterring the subsequent resolution of the tumour I cannot pretend to say, but certainly the progress was continuous and most satisfactory." (Note: See complete text of case report on pages 126-127.)

## Primary Malignant Tumors of the Long Bones: End Results in 170 Operable Cases

COLEY WB; COLEY BL  
*Archives of Surgery* 14: 1927; 64-141

### *Extracted Summary*

The prognosis of osteogenic sarcoma of the long bones, while far from satisfactory, is by no means as hopeless as is generally believed by physicians. The prognosis depends largely on an early diagnosis and the exercise of most careful judgment in selecting the method of treatment for the individual cases. This should be based on a wide experience with a great variety of clinical and pathologic types of bone sarcoma.

Amputation alone offers little hope of a permanent cure in any of these types. Primary treatment with radium or roentgen rays, even if pushed to the utmost limits of safety, while often causing very marked improvement has thus far failed to effect a permanent cure in any case in which the diagnosis has been unquestionably established by clinical and pathologic evidence. The mixed toxins of erysipelas and *Bacillus prodigiosus* alone have effected a cure in certain number of cases; but all of these cases have been of the round cell or spindle cell type, characterized by little production of new bone. The mixed toxins and radium combined have likewise resulted in the complete disappearance and apparent cure of an even larger number of cases of a similar type; but neither toxins nor radium, singly or combined, have effected a cure in any case associated with marked new bone production. Amputation followed by prolonged treatment with the mixed toxins in a series of thirty-eight consecutive cases shows 50% of the patients alive and well from three to eighteen years. This series includes all types of osteogenic sarcoma, as well as the cases associated with marked new bone formation. In a similar series of cases treated by amputation alone without toxins or radium before or after amputation, not a single patient has remained alive beyond the three year period.

The choice of treatment in a given case depends on whether it belongs to the group of round cell sarcoma (endothelioma, according to Ewing's classification) or to the group associated with marked new bone formation. If to the first group, we believe it safe to try a combination of the systemic effect of toxins and the local effect of radium, the duration of the treatment to depend on the result obtained; if marked improvement is noted, the treatment may be continued until the tumor has entirely disappeared; but if no improvement is noted in from four to six weeks amputation should be performed, followed by prolonged systemic toxin treatment.

If the case belongs in the second group, we see no advantage, but a distinct disadvantage, in preliminary treatment with radium, roentgen rays or toxins, for the reason that metastases may develop during the period of treatment or may be hastened by the rapid breaking down of a vascular tumor, which permits living cells to be carried to the lungs or to remote parts of the body. As

our experience, supported by the results of other men, shows that there is no reasonable hope of saving the limb in this group of cases, we believe that amputation at the earliest possible moment followed by prophylactic toxin treatment offers the greatest hope of saving the life of the patient.

The fact that ten inoperable cases of this series have been successfully treated with the mixed toxins alone or combined with radium, the patients remaining well from five to twenty-four years later, should prevent us from abandoning all hope in cases beyond surgical relief.

This article, a continuation of the article which appeared in the December 1926 issue of *Archives of Surgery*, contains summaries of fifty-four cases of bone sarcomas treated with Coley's mixed toxins or surgery and mixed toxins combined. Some of the cases were also treated with radium and/or amputation.

#### SELECTED CASE REPORT

**E**xcerpt from Case Report...The patient was admitted to the Memorial Hospital where the mixed toxins of erysipelas and *Bacillus prodigiosus* (Coley) were begun at once and continued for about two months. The tumor rapidly disappeared and the bone cavity healed with healthy granulations. Before the healing process was entirely completed, the patient contracted a severe attack of accidental erysipelas (a patient with a fresh case of erysip-

elas had been in the ward not long before), which ran the usual course of about ten days. Healing continued rapidly and was completed two or three weeks later, after which the patient returned to his home in Canada. At the present time, twenty-six and one half years later, he is in excellent condition with a sound and useful leg, and is able to attend to his duties as a farmer.

(Note: See complete text of case report on page 116.)

## Sarcoma of the Long Bones: Clinical Lecture of End Results

COLEY WB

*Surgical Clinics of North America* 9: 1929; 583-618

#### *Extracted Summary*

Twenty case summaries are reported, all of which were treated at the Memorial Hospital or at the Hospital for the Ruptured and Crippled. They show the following: seven cases of the osteogenic type, of which 5 were well from five to twenty years and 2 were well over three years; five cases of the endothelioma type, of which 4 were well from four and three-quarter years to nineteen years, and one was well a little over three years; six cases of giant cell or giant and spindle-cell type, in all of which the limb was saved, and the patients have remained well from six to twenty-four years later. In the 12 cases of periosteal osteogenic sarcoma, including the endothelioma type, the limb was saved in 3 cases. Of this group, 8 patients have remained well from five to twenty-three years later. In 2 cases metastases have developed.

## Primary Reticulum-Cell Sarcoma of Bone

### *Summary of Thirty-Seven Cases*

COLEY BL; HIGINBOTHAM NL; GROESBECK HP

*Radiology* 55(5): Nov 1950; 641-658

#### *Extracted Summary*

A study of 37 cases of primary reticulum-cell sarcoma of bone has been made, and the clinical, diagnostic, and therapeutic aspects of the disease are reviewed. The disease is most common in males. It may occur at any age, but almost three-quarters of this series occurred in the second, third, and fourth decades. Typically the course is more benign than that of any other malignant tumor of bone, and the lack of debility in most of our patients is a striking feature. The treatment of choice in primary reticulum-cell sarcoma is carefully administered roentgen therapy, in amounts sufficient to give an estimated tumor depth dose of 3,000 to 4,000 r. Metastasis and recurrence may occur as late as ten or more years after therapy. Many of these metastatic and recurrent lesions may be further controlled by radiation therapy or surgery.

# Host-Tumor Antagonism XIII: Sarcoma of the Soft Tissues Treated by Bacterial Toxins: Successful Series

PELNER L; FOWLER GA

*American Geriatric Society. Journal 7: Aug 1959; 624-647*

## *Extracted Summary*

Much has been said of the phenomenon of "spontaneous" regression of cancer. It has different meanings for different authors. Everson and Cole defined it as the partial or complete disappearance of a malignant tumor in the absence of all treatment, or in the presence of therapy which is considered inadequate to exert a significant influence on neoplastic disease.

If such regressions were truly spontaneous, they might simply be noted as esoteric phenomena and evoke little further discussion. It happens, however, that the regressions reported in the literature are not truly spontaneous, but are almost always associated with certain unusual circumstances such as acute concurrent infection, inflammation, fever or bacterial toxin therapy. If a common denominator could be found in these cases, a first step in the solution of a giant riddle might be made.

The purpose of this review is to analyze the effect of bacterial toxin therapy on patients with sarcoma of the soft tissues. (The data relating to the effect of infections and bacterial toxins on all types of neoplasia will appear in subsequent reports.) It is hoped that the analysis of factors influencing success and failure in the following 186 cases will lead to greater knowledge and more effective use of the method.

The treatment of malignant tumors by bacterial toxins is based on the fact that neoplasms have been known to regress during acute bacterial infections, principally erysipelas, but also acute tuberculosis and smallpox. The inhibitory action was often powerful enough to cause complete regression, and in some instances there were no recurrences.

The present report consists of all the microscopically proved cases of operable and inoperable sarcoma of the soft tissues, other than lymphosarcoma, in which toxin therapy (Coley's toxins) was administered. The cases have been grouped according to the stage of the disease at the time toxins were begun, and the type of toxin used.

# Host-Tumor Antagonism XIV: Sarcoma of the Soft Tissues Treated by Bacterial Toxins—Unsuccessful Series

PELNER L; FOWLER GA

*American Geriatric Society. Journal 7: Sep 1959; 698-729*

## *Extracted Summary*

An analysis of "failures" in the toxin therapy of inoperable sarcoma of the soft tissues is presented. Some of the patients whose treatment with mixed toxins was considered a failure lived for 22, 19, 15, 10, and 5 years after onset of the disease and almost as many years after toxin therapy was started. It may perhaps be said that we set our sights too high. Some of these cases should be considered as at least partial successes, even if the patients died with cancer. Many factors besides those under direct control of the physician may change the picture radically. For example, there is a general agreement that accidental injury or incisional biopsy can initiate a phase of intensive growth in a previously dormant tumor. With a rapid growth, an invasion of the luxuriant blood supply by tumor emboli is a simple matter.

# End Results in Reticulum Cell Sarcoma of Bone Treated by Bacterial Toxin Therapy Alone or Combined with Surgery and/or Radiotherapy (47 Cases) or with Concurrent Infection (5 Cases)

MILLER TR; NICHOLSON JT  
*Cancer* 27: 1971; 524-548

## *Extracted Summary*

This study of reticulum cell sarcoma of bone comprises all but 2 known cases of this type of tumor treated prior to 1956 to whom bacterial toxin therapy (Coley's toxins) was administered (47 cases), or in whom concurrent acute infection, inflammation or fever occurred (5 cases). The 5-year survival rate in the 47 toxin-treated cases was 64%. However, 8 of these patients died of the disease 5 to 17 years after onset. All 5 of the infection cases survived free from disease and were traced from 8 1/2 to 44 years after onset. Thus, permanent results were achieved in 22 of the 47 toxin treated cases (48%), and survival was markedly prolonged in all but 7 of the failures. This is all the more significant because 16 of these 47 patients already had metastases when toxins were begun.

Many factors which may affect prognosis in these 52 cases of reticulum cell sarcoma of bone have been reviewed. These include the type of toxin used and the technique of administration, the timing and dosage of radiotherapy, amputation, site and extent of the tumor, age and sex of the patient, and the possible role of concurrent complications, such as infections, inflammatory episodes, pregnancy, psychic or physical trauma. The evidence suggests that the most important factors were the stage and extent of the disease at onset of toxin therapy, the timing and dosage of radiotherapy, and the technique of toxin administration. With the availability of detoxified or concentrated preparations of various microbial products and a greater knowledge of the mechanisms of action involved in such therapy, it should be possible to secure a very high percentage of permanent results in these cases which have thus far yielded almost 50% better 5-year survival rates with such adjuvant therapy than have been obtained by surgery and/or radiotherapy alone.

## Osteogenic Sarcoma

*End Results Following Immunotherapy (Bacterial Vaccines), 165 Cases, or Concurrent Infections, Inflammation or Fever, 41 Cases*

NAUTS HC  
*Cancer Research Institute Monograph* 15: 1975; 120 pgs

## *Extracted Summary*

The present report comprises an end result study of all microscopically proven cases (failures as well as successes) of osteogenic sarcoma, chondrosarcoma and fibrosarcoma who received at least seven injections of Coley toxin (165 cases) or cases known to have had a concurrent bacterial infection, inflammatory or febrile episode (41 cases). All the cases treated by toxin therapy (*Streptococcus pyogenes* and *Serratia marcescens*) at Memorial Hospital from 1906 through 1941 were included. The infection cases at Memorial Hospital range from 1926 to 1949. Most of the patients receiving toxins were treated prior to W. B. Coley's death in 1936 (138 of the 165 cases). Of the 27 treated after his death only five were successes (18%) as compared to 36% in the cases treated during his lifetime. We believe this significant difference is due to the fact that the later cases received only brief courses of toxins, and a less potent preparation was then being used. Unfortunately, after 1936 those reporting on end results of these tumors failed to mention that at Memorial Hospital up to 1941, all but six of the five-year survivors with osteogenic sarcoma had

received Coley toxin therapy. In addition to the Memorial Hospital Series, we have included those treated by W. B. Coley, B. L. Coley or N. L. Higinbotham at the Hospital for Special Surgery in New York, or those reported in the literature, if detailed histories were available as to technique of administration.

## Beneficial Effects of Immunotherapy (Bacterial Toxins) on Sarcoma of the Soft Tissues, Other than Lymphosarcoma

*End Results in 186 Determinate Cases with Microscopic Confirmation of Diagnosis, 49 Operable, 137 Inoperable*

NAUTS HC

*Cancer Research Institute Monograph 16: 1975; 219 pgs*

### *Extracted Summary*

The purpose of this review is to analyze the effect of bacterial toxin therapy on patients with sarcoma of the soft tissues. The data relating to the effect of infections on all types of neoplasia appear in another report. It is hoped that the analysis of factors influencing success and failure in the following 186 cases will lead to more effective use of the method and to greater knowledge regarding this form of therapy and its effects, not only on sarcoma.

The treatment of malignant tumors by injections of bacterial products is based on approximately 400 recorded cases of so-called "spontaneous regressions," the great majority of which occurred in patients who concurrently developed an acute infection, principally streptococcal or staphylococcal.

Most of these cases were cases of carcinoma or epithelioma. However, about 20 inoperable sarcomas of the soft tissues (other than lymphosarcoma) were found that disappeared completely under the influence of acute infections. Of the five recorded cases of untreated operable neoplasms in which infections developed and the tumors disappeared completely, only one was a sarcoma, in an 18-month-old child, whose parents refused amputation for an extensive tumor of the thigh. A severe pyocyanous infection developed in the biopsy wound. The tumor then disappeared and the patient remained free from further evidence of disease when last traced 23 years later. Of the 47 operable cases in which infection developed spontaneously before or after surgical removal, four were sarcoma of the soft tissues. These four patients remained free from further evidence of disease when last traced 8 to 21 years after onset.

The present report consists of all the microscopically proven cases of operable and inoperable sarcoma of the soft tissues, other than lymphosarcoma, in which toxin therapy (Coley toxins) was administered. The cases have been grouped according to the stage of the disease when toxins were begun, and the type of toxin used.

### SELECTED CASE REPORT

**E**xcerpt from Case Report:...On June 30, 1894, at the end of nearly three months' treatment the patient left the hospital. While there had been considerable decrease in size, there still remained a large tumor. This continued to decrease in size without further treatment... Examination by Coley five years later showed two small, hard movable masses at the site of the original tumor. On April 29, 1899, Coley operated at Memorial Hospital. The fibrous remains were separated from the surrounding tissue down to their connection with the bone, and this was cut through. Microscopic examination of the tissue

showed it to be fibrous stroma, all the malignant cellular elements having been absorbed. The patient remained in good health and was examined periodically by Coley...Her family physician, Dr. Philip G. McClellan, reported on October 10, 1939: "She is now 77 years old and at the site of the original lesions in the buttock there is nothing but a very pliable scarring. Her only symptoms are of a cardiac nature." She died on February 2, 1941, of coronary heart disease, at the age of 77. This was 51 years after onset and 47 years after toxin therapy...

(Note: See complete text of case report on pages 132-133.)

SUPPLEMENTAL REFERENCES  
BONE, CONNECTIVE TISSUE, AND SOFT TISSUE

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- Verhandlungen Arztlicher Gesellschaften  
(Proceedings of June 16, 1866) Einfluss von Erysipel  
BUSCH W  
*Klinische Wochenschrift (Berlin)* 3: 1866; 245-246
- (Vorlaufige) Heilung einer Ausgebeiteten  
Sarkomwucherung in einem Kinderkopf durch Erysipel  
BIEDERT P  
*Deutsche Medizinal-Zeitung* 4: 1886; 45
- A Case of Recurring Multiple Sarcoma Cured by  
Contracting Erysipelas  
O'KEEF P  
*Medical Society of Wisconsin. Transactions* 32: 1898; 102-4
- Sarcoma Cured by Acute Inflammation  
WYETH JA  
*Medical Record* 57: Jan 20 1900; 125-127
- Late Results of the Treatment of Inoperable Sarcoma by  
the Mixed Toxins of Erysipelas and Bacillus Prodigiosus  
COLEY WB  
*American Journal of the Medical Sciences* 131: 1906; 373-430
- Sarcoma de las Fosas Nasaes Curado por une Infeccion  
Erisipelada  
RAMON Y CAJAL P  
*Gaceta Medica Espanola* 29: 1911; 519-523
- Further Observations on the Conservative Treatment  
of Sarcoma of the Long Bones  
COLEY WB  
*Annals of Surgery* 70(6): Dec 1919; 633-660
- End-results in 169 Operable Cases of Periosteal  
Osteogenic Sarcoma and Endothelioma, including a  
Small Group of Malignant Central Sarcoma  
COLEY WB; COLEY BL  
*American Surgical Association. Transactions* 43: 1925;  
857-949
- Primary Malignant Tumors of the Long Bones: End-  
Results in 170 Operable Cases Including a Small  
Group of Malignant Central Sarcoma  
COLEY WB; COLEY BL  
*Archives of Surgery* 13(6): Dec 1926; 779-836
- A Propos de la Guérison Spontanée du Cancer  
MATHEZ A  
*Lyon Chirurgical* 25: 1928; 449-451
- An Apparent Recovery from Multiple Sarcoma with  
Involvement of Both Bone and Soft Part Treated by the  
Toxins of Erysipelas and Bacillus Prodigiosus (Coley)  
CHRISTIAN SL; PALMER LA  
*American Journal of Surgery* 4(2): Feb 1928; 188-197
- Types and Treatment of Bone Sarcoma  
COLEY WB  
*American Journal of Surgery* 8(1): Jan 1930; 123-126
- Endothelial Myeloma or Ewing Sarcoma (Results of  
Therapy, Including Use of Coley's Erysipelas and  
Prodigious Toxins)  
COLEY WB  
*American Journal of Surgery* 27: 1935; 7-18
- The Diagnosis and Treatment of Bone Sarcoma  
COLEY WB  
*Glasgow Medical Journal* 126(2): Aug 1936; 49-86, 128-69
- Endothelioma of Bone (Ewing's Sarcoma)  
COLEY BL; HIGINBOTHAM NL; BOWDEN L  
*Annals of Surgery* 128: 1948; 533
- Neoplasms of Bone and Related Conditions: Etiology,  
Pathogenesis, Diagnosis and Treatment, Second Edition*  
COLEY BL  
Hoeber Medical Division, Harper and Row, Publishers,  
Inc.: 1962; 647-651

# Neoplasms of the Female Breast

## A Case of Carcinoma of the Breast, vs Erysipelas and Arsenic

MOHR C

*North American Journal of Homeopathy* 3: 1888; 700-702

### *Extracted Summary*

A case of regression of breast carcinoma is reported. Some of the interesting points about this case are: (1) the unusual age of the patient when the growth was first noticed, 83; (2) the relief of pain and other subjective symptoms by the selected remedies, conium, belladonna, and lachesis; (3) the rapid disappearance of all signs of a malignant growth (except the cicatrix) and the attendant cachexia, on the supervention of an erysipelas infection; (4) the marked amelioration of the symptoms of the erysipelas from the arsenicum; (5) the rapid repair of a fractured arm, occurring so late in life and so soon after the disappearance of the neoplasm.

The author states that he is "not quite satisfied that the erysipelas alone cured the cancer; the arsenicum may have had something to do with the result. I have not the least doubt, although I must admit that no microscopic examination of the tissues had been made at any time; but the history of the growth and the macroscopic appearances were so marked in favor of carcinoma that I deemed the microscopic test unnecessary; and with my diagnosis two experts agreed.

(Note: See complete text of case report, pages 145-146.)

## Breast Cancer, Immunological Factors Affecting Incidence, Prognosis and Survival

*Part I: Factors Affecting Host Resistance and Response to Treatment*

*Part II: The Immunopotentiating Effects of Concurrent Infections, Inflammation or Fever*

*Part III: Immunotherapy, Effects of Bacterial Vaccines*

NAUTS HC

*Cancer Research Institute Monograph* 18: 1984; 261pgs

### *Extracted Summary*

In Part I of this study the author analyzes immunological factors affecting incidence, prognosis and survival in breast cancer and presents pertinent data relating to host resistance of breast cancer.

Part II includes all known cases in which complete or partial regression occurred "spontaneously" following concurrent infections, inflammation or fever.

In Part III are found all cases with microscopic confirmation of diagnosis known to have received immunotherapy, the mixed bacterial vaccines of *Streptococcus pyogenes* and *Serratia marcescens*, formerly known as the Coley Toxins, now called Mixed Bacterial Vaccines (MBV).

### SELECTED CASE REPORT

**E**xcerpt from Case Report...The tumor began to shrink shortly after the injections were begun...Clinical Course: By the latter part of March, 1896, a little over three months after the toxins were begun, the growth had entirely disappeared and the patient had gained rapidly

in weight and strength, so that she soon regained the 25 pounds she had lost prior to toxin therapy. Coley presented her before the New York Surgical Society on November 11, 1896, and also before the Clinical Congress of Surgeons of North America in November, 1912. She remained in good

health, married, and when last traced by Coley shortly before his own death she was well except for pain in her knee joints. On October 10, 1939 (at the age of 86) she was seen by Dr. Philip G. McLellan of Hartford, who stated that examination of the pectoral region showed nothing but the scarring of the biopsy and the sinuses. Shortly

thereafter she developed a small basal cell epithelioma at the left side of her nose. She died on May 2, 1943, at the age of 89, of bronchopneumonia and decompensated arteriosclerotic heart disease. This was 48 years after onset. (Note: See full text of case report on pages 164-165.)

## SUPPLEMENTAL REFERENCES FEMALE BREAST

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Fall von Gleichzeitig ueber eine Sehr Grosse Hautpartie  
Ausbegreitetem Erysipel

MOSENTEIL K

*Archiv für Klinische Chirurgie* 12: 1871; 107-111

Brustkrebs durch das Emmerich-Scholl'sche  
Erysipelserum Geheilt

SCHULER T

*Deutsche Medizinische Wochenschrift* 21: 1895; 611-612

# Neoplasms of the Skin

## MALIGNANT MELANOMA

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### The Treatment of Sarcoma by the Mixed Toxins of Erysipelas and *Bacillus prodigiosus*

NORTHROP HL

*Hahnemannian Monthly* 34: 1899; 423-427

#### *Extracted Summary*

In support of Dr. William Coley's hypothesis that the action of the toxins of erysipelas upon sarcoma, as shown by clinical results, is in strict accord with the known action of the living streptococcus of erysipelas, the author presents a case report in which both a melanotic sarcoma and the pain associated with the sarcoma completely disappeared after an attack of erysipelas.

The author states that his object in detailing this case is to show the effect of an attack of erysipelas upon sarcoma, and a melanotic sarcoma at that. Coley has said that no case of melanotic sarcoma showed more than a slight improvement and the author feels that the case he reports showed much more than slight improvement since she enjoyed immunity for a longer period of time after her attack of erysipelas than after a mechanical removal of the neck tumors.

#### SELECTED CASE REPORT

**M**rs. F., age 80 years, had a melanotic sarcoma of large size removed from the right nasal cavity by Dr. I. G. Shalleross, in September 1893. She was thereupon admitted to the Hahnemann Hospital, Philadelphia, where a melanotic sarcoma the size of a chestnut was removed from the right side of the neck.

In February 1894, she returned with two tumors the size of robins' eggs, located behind the sternomastoid muscle. These were easily removed and the patient was sent home.

In March 1894, there was an extensive recurrence in this same locality. Again admitted to the Hahnemann Hospital, she presented an elongated mass on the right side of the neck in the line of the sternomastoid muscle, reaching from a point about a finger's breadth above the clavicle to an inch below the ear. This growth was deeply attached, was not adherent to the skin, and extended inward to near the middle line of the neck.

There was no doubt in our minds regarding the nature of this mass, as the woman's history was too decidedly

that of sarcoma to permit of anything else being considered. An incision under ether revealed an extensive sarcomatous infiltration. The case was inoperable, and the wound was closed.

Eleven days later her temperature suddenly reached 101.4°F., pain appeared in the right side of her face and neck, and the skin here became fiery red and the neck tissues swollen, pitting on pressure. The complication was promptly diagnosed as erysipelas, and the effect upon the sarcoma was watched with great interest. The attack subsided, and in nine days more the growth had become considerably smaller, and was more movable. Before the

attack of erysipelas our patient suffered severe pain; this had now entirely disappeared, and her general condition was greatly improved. Two weeks later all macroscopic indications of sarcoma were gone, and the patient was discharged from the hospital.

In July of the same year Mrs. F. returned for the fourth time. Three tumors were now removed from the sheath of the common carotid and internal jugular, and a small sarcoma was enucleated from the inner side of the right cheek wall. Her wounds healed nicely, and she left the hospital in good condition. We have not heard from her again, so she is probably dead.

## Note on the Experimental Use of Rabies Vaccine for Melanomatosis

PACK GT

*Archives of Dermatology and Syphilology* 62: 1950; 694-695

### *Extracted Summary*

A clinical study is presented in which the author attempted to induce remission of malignant melanoma lesions by administering rabies vaccine. In two of the twelve patients participating in the study, lesions were reduced in size although active melanoma cells could still be observed. In 10 patients no apparent changes in the existing tumors were observed. This study was prompted by the case of a woman who, after receiving 14 injections of rabies vaccine for a dog bite, experienced regression of melanotic nodules and had no further recurrences for 5 1/2 years.

## Virus Therapy in the Treatment of Tumors

HIGGINS GK; PACK GT

*Bulletin for the Hospital for Joint Diseases* 12: 1951; 379-382

### *Extracted Summary*

In 1950 Pack reported the unusually long latent period of 5 1/2 years between the appearance of the first and second group of cutaneous metastases from a malignant melanoma. In no other patient in a personal series of over 1000 patients with malignant melanoma was the interval of such a long duration. The history of this patient differed from those of the series in only one significant incident; she had received rabies vaccine after a dog bite.

Based upon this case the authors have treated over 30 patients with multiple metastases of melanoma using rabies vaccine. They report the preliminary results of their trial of virus therapy with this group. Of the 30 patients, 8 have shown definite regression of their metastases. The metastases have decreased in size, become flattened but have remained pigmented. The authors commented that the development of new metastases appeared to be retarded also.

# Host-Tumor Antagonism XV: The Apparently Beneficial Effects of Acute Concurrent Infections or of Toxin Therapy on the Course of Malignant Melanoma

PELNER L

*American Geriatric Society. Journal 8: 1960; 378-397*

## *Extracted Summary*

Among the cases of spontaneous regression of malignant disease accepted as valid by Everson and Cole and other investigators, there were several in which fever or infection, or both, were implicated. Although the prognosis in malignant melanoma is notoriously bad, a number of cases have been reported in the literature in which the result was better than might be expected.

One form of treatment that has not been given sufficient emphasis in recent years is bacterial toxin therapy, possibly because the data on the subject have been buried in the older medical literature or remain unpublished. We have reviewed all the histories of patients with malignant melanoma in whom concurrent infections developed or who were treated by toxin therapy (Coley toxins), and have found some spectacular results, not only immediate but of long standing. We have found 12 cases of malignant melanoma in which concurrent acute infection or inflammation developed, causing complete or partial regression of the neoplasm. They are an unselected group. These cases are of particular interest, since they furnish clear-cut evidence of the beneficial effect of these infections on malignant melanoma. Seven of the 12 patients were traced from eight to twenty-five years after onset, and found to be free from further evidence of disease. One patient is known to have died of malignant melanoma thirteen and a half years after onset.

The most important factors influencing success or failure with toxin therapy include the stage of the disease when toxins are begun, the potency of the preparation used, the duration and intensity of toxin therapy, and the amount of radiation given before or during treatment with toxins.

The findings in a series of patients who either had infections or were treated with toxins suggest that at the present time toxin therapy may be of real value in producing a larger percentage of permanent beneficial results in malignant melanoma if administered before and after surgical removal of the tumor in operable as well as in inoperable cases.

## SELECTED CASE REPORTS

**M**rs. R. R., female, aged 27; primary malignant melanoma of left ankle; onset prior to January, 1946; tumor became infected and disappeared in February, 1946; during her third pregnancy a painless lump appeared in the left groin (metastasis); about February, 1948 a painless mass was noted in right breast; she again became pregnant early in October 1948; the breast metastases then rapidly increased in size and became painful, and another mass appeared in the left arm; during the second and fifth months of gestation several other small metastatic lesions appeared on the abdominal wall and back; she had a ringworm infection about January, 1949; surgical excision of the tumors of the right breast, left arm and left femoral region was performed on February 28, 1949 (all tumors proved to be malignant melanoma pathologically); the larger tumors on the back and abdominal wall were excised March 28, 1949; normal

delivery at term, on May 20, 1949; a small recurrent mass in the femoral region was excised December 6, 1949 (pathologist reported melanoma of the inguinal lymph nodes, circumscribed, fibrosis of the inguinal nodes (radiation), and acute and chronic lymphadenitis (i.e., the pathologist reported a tissue reaction typical of that following radiation, but no such therapy had been given); another small recurrent growth appeared in the right supraclavicular region on July 3, 1950; it was excised four days later; no further recurrences; all sites of previous tumors became depigmented, including one over the eyebrow where an untreated tumor had apparently regressed spontaneously; patient was alive and well when last seen in September, 1959, over thirteen and a half years after the primary tumor had regressed following concurrent infection. (Sumner WC; *Cancer*, 62: 1953, 1040-1043; New York Cancer Research Institute records)

**M**rs. M. C., female, aged 57; malignant melanoma of the right foot, with metastases to the right groin and thigh (onset in March, 1949); primary lesion became infected following trauma; growth widely excised in April, 1949; pathologist reported "marked evidence of infection and areas of atypical keratoses"; three weeks later, right groin dissection revealed metastatic areas in the nodes; amputation was refused, the patient was free from disease for eleven months; then further metastases occurred in the right thigh, from one of which a biopsy specimen was taken; additional metastases continued to appear in the skin of the right leg and thigh during the next year; again the patient refused disarticulation; not seen again until March, 1953; during this interval all but 1 metastatic lesion had regressed spontaneously; another lesion developed in October, 1953 and was excised with the remaining previous lesion; in June, 1954 numer-

ous nodules were present over the right leg; 1 was excised, and 22 others were treated with 1,000 r. of low-voltage x-rays, completed in twenty days; all 22 lesions regressed, and some untreated nodules also disappeared; no further lesions appeared for two and a half years, when another nodule developed and was excised; the patient was apparently well from March to December, 1958, when a large pleural effusion occurred; Papanicolaou smears showed Class I cells; nitrogen mustard was given early in 1959; cystitis developed in February 1959; there were continued episodes of pleural effusion; repeated Papanicolaou smears showed no tumor cells; although not demonstrated, the patient was believed to be dying of widespread metastases in April, 1959; death occurred about September, 1959, approximately eleven and a half years after onset. No autopsy. (Vogler WR et al.; Surg Gynec Obstet, 106: 1958, 586-594; New York Cancer Research Institute records)

## Vitiligo in a Case of Vaccinia Virus-Treated Melanoma

BURDICK KH; HAWK WA  
*Cancer* 17(6): Jun 1964; 708-712

### *Extracted Summary*

A case of disseminated melanomatosis treated with repeated injections of live vaccinia virus into the accessible tumors is reported. After a year of such treatment, the cutaneous tumors disappeared as did evidence of visceral metastases. During the treatment period, large areas of the skin lost their normal pigment-producing cells. Tissue culture studies on the patient's serum did not reveal the presence of specific cytotoxic factors.

This case illustrates a remission of disseminated melanoma apparently induced by live vaccinia virus treatment. Of particular interest is the association of an inflammatory vitiligo with clinical and histological evidence of destruction of normal pigment-producing cells...The vitiligo observed in our patient was quite different from any such process that we have seen before. It was sudden in onset with acute erythematous tender plaques occurring over about half the body almost simultaneously. These faded to the depigmented uninflamed skin as illustrated previously, with the entire process lasting only from 10 to 14 days...

Patients who have responded best have had multiple small tumors and have exhibited a generalized hyperergic reaction to the cowpox as manifested by chills, nausea and vomiting, and malaise several hours after injection into the tumor.

## The Limited Role of Attenuated Smallpox Virus in the Management of Advanced Malignant Melanoma

MILTON GW; LANE-BROWN MM  
*Australian and New Zealand Journal of Surgery* 35: 1966; 286-290

### *Extracted Summary*

Four cases of incurable malignant melanoma treated with attenuated smallpox (B.P.) virus inoculation are reported. The findings suggest that occasionally a worthwhile remission of the disease can be achieved by this means provided the dose of virus used is large, the patient is not immune and there are no gross visceral metastases.

#### SELECTED CASE REPORT

**M**rs. C. S. (aged 66) was first seen in December 1959. (Belisario JC et al., Australian Journal of Dermatology 6 (1961) 113) She stated that she had had a birth mark on the right flank all her life but during the preceding two or three years this had enlarged and bled occasionally after trivial injury. The lesion was raised and had a short pedicle, it was pale brown in color. The correct diagnosis was suspected on clinical grounds by Dr. E.J.C. Molesworth and after resection the pathologist (Dr. V. J. McGovern) stated the lesion to be a malignant melanoma; the excision appeared adequate. Three months later the patient reported with enlarged inguinal lymph nodes, a resection of these nodes was carried out and they were shown to contain malignant melanoma. Two months later, in May 1960, the patient noted further recurrence in the region of the primary resection, these were excised and the pathologist's report confirmed the presence of malignant melanoma. She was then given a course of deep x-ray therapy to the region between the primary site and the groin dissection. All went well for a month and then yet another set of recurrences was noted in the right flank

and the skin of the previous groin resection. This was the third recurrence in seven months. These lesions were in the skin or in the immediate subcutaneous tissue. The region of the groin was treated with irradiation and the inoculation of virus into the upper lesions, the lesions on the flank were treated by direct inoculation of virus into some of the lesions in the same manner as one would carry out a vaccination, the needle puncture being carried directly into the tumour deposits. The flank lesions were not treated with irradiation.

Following the vaccination and the x-ray therapy there was a severe reaction to the site and moderately severe systemic reaction. After this all the lesions subsided and left only a blue-black stain. From that day to this (May 1965) she has remained well, there has been no further recurrence of the disease. The patient stated that she had probably been vaccinated once about thirty or more years ago.

Note: The authors report that on February 26, 1966, this case and also cases 2 and 3 are alive, well and free of all evidence of disease.

## Uses of Vaccinia Vaccine in the Treatment of Metastatic Malignant Melanoma

HUNTER-CRAIG I; NEWTON KA; WESTBURG G; LACEY BW  
*British Medical Journal* 2(708): May 30 1970; 512-516

#### Extracted Summary

Of 19 patients with proved metastases from malignant melanoma treated by inoculations of smallpox vaccine, intradermal deposits disappeared completely in six out of ten cases. Five of these remained well 2 to 22 months after initial treatment. The response was limited strictly to the site of inoculation. The mechanism of action of vaccinia virus in malignant melanoma is not clear.

## Regression of Intradermal Malignant Melanoma After Intragroupal Injection of Mycobacterium Bovis Strain BCG

NATHANSON L  
*Cancer Chemotherapy Reports* 56(5): Oct 1972; 659-665

#### Extracted Summary

Nine patients with intradermal metastases of malignant melanoma were treated with intralesional injections of Mycobacterium bovis strain BCG (bacillus Calmette Guerin). Significant toxic effects included fever, nausea, rash, local skin necrosis, and lymphopenia, leukopenia, or both. Clinically significant systemic BCG infection was not identified. Seven of the nine patients experienced local regression of BCG-treated lesions and two of these seven experienced complete regression of lesions which had not been treated. Four of the responding patients and both of the nonresponding patients had had negative purified protein derivative (PPD) skin tests prior to BCG treatment; conversion to positive reaction to PPD after BCG treatment was noted only in the four patients who responded to treatment.

Perhaps more important than the therapeutic results achieved is the usefulness of this technique as a model system for the study of presumably immunologically mediated regression of melanoma. It is our belief that this system will prove to be a reproducible in vivo experimental model of the "spontaneous regression" phenomenon in malignant melanoma which will enable us to study these factors in man to an extent not heretofore possible.

## Regression of Cancer Following Surgery

SINDELAR WF; KETCHAM AS

*National Cancer Institute Monographs 44: 1976; 81-84*

### *Extracted Summary*

Post-surgical tumor regressions are rare but well-recognized entities. The causes of such phenomena are unknown but probably are multiple. The possible relationship between postoperative infection and regression is discussed and a case history is reported.

Of 108 patients with spontaneous tumor regressions following surgery, 14 had significant infectious surgical complications, including frank sepsis and abscess formation, wound drainage and fistula formation, and persistent fever.

### SELECTED CASE REPORT

**E**xcerpt from Case Report:...The patient developed a postoperative wound infection, which required drainage and several weeks of granulation to achieve healing...The patient remained free of disease until early

1964, when several cutaneous nodules developed in the medial right thigh and progressed in size over a 3-month period...

(Note: See complete text of case report on page 178.)

## Spontaneous Regression of Metastatic Malignant Melanoma

MCCARTHY WH; SHAW HM; MILTON GW

*Clinical Oncology 4(3): Sep 1978; 203-207*

### *Extracted Summary*

Two cases are presented of spontaneous regression of lymphatic and visceral metastases from malignant melanoma. In contrast to most previous reports of spontaneous regression of metastases from this disease, in this study the presence of metastases in both patients was confirmed by direct observation and histological examination. In each case, the possibility was investigated that an immune-stimulating event may have occurred.

### SELECTED CASE REPORT

**E**xcerpt from Case Report:...The postoperative phase was complicated by some wound necrosis, loss of the graft with local infection and venous thrombosis in the leg followed by multiple pulmonary emboli and pleural effusion at the base of the left lung. All complications subsided with appropriate therapy.

The patient was well for 5 months until March, 1968, when he started to experience recurrent, severe colicky abdominal pain. This became increasingly severe and was associated with nausea and vomiting. This continued for 4 months during which period he lost 2 stone in weight. He presented to the Clinic in August, 1968 and laparotomy was performed. An intussusception of the ileum caused by a partially necrotic polypoid mass was found

and 30 centimeters of dilated small bowel was resected with end-to-end anastomosis...There were numerous other nodules scattered throughout the small intestine ranging in size from a pinhead to about 2 centimeters. These lesions were not touched. Postoperatively, the patient developed a mild pyrexia and a large wound abscess was drained. The wound healed satisfactorily after 3 weeks and there were no other postoperative complications.

The patient has been examined regularly since this operation and was last seen in July, 1978, nearly 10 years after laparotomy. No evidence of further recurrence or metastases has been detected...

(Note: See complete text of case report on page 179.)

# Spontaneous Regression of Metastatic Malignant Melanoma

RAMPEN FH

*Clinical Oncology* 5(1): Mar 1979; 91-92

## Extracted Summary

The case reports of spontaneous regression of metastatic malignant melanoma described by McCarthy and associates (*Clin Oncology* 4 (1978) 203) represent rare instances of complete spontaneous regression of histologically documented visceral and lymphatic tumor burdens. The authors correctly emphasize the paucity of analogous case reports in the literature. An excellent review of spontaneous regression in melanoma was presented by Nathanson (1976). Most reports of regression of visceral lesions are based on clinical or radiological grounds only.

In the Rotterdam Radiotherapy Institute we have observed a case of complete spontaneous regression of visceral malignant melanoma, the clinical course of which is worthy of note. The present case is of interest because of the long-term complete remission [18 years] of visceral metastatic malignant melanoma. The metastases occurred in multiple organ systems (cerebral, intestinal and distant lymphatic) and were histologically documented.

Of special interest is the complicating wound infection after the first laparotomy. The observation that this patient has been free of disease for more than 15 years might constitute spontaneous cure. However, statements about natural 'cures' for metastatic melanoma should be viewed with scepticism since several cases reported in the literature eventually have died of their disease, even after 5 to 10 years of apparent remissions.

## SELECTED CASE REPORT

A 37-year-old male patient was first seen in June, 1957 with a skin lesion on the right forearm. Histology revealed malignant melanoma. Dissection of the axillary nodes was carried out but secondary deposits were not encountered. In September, 1958 the patient was operated for a space-occupying mass in the left occipital lobe. Microscopy showed malignant melanoma. The patient then received palliative irradiation to the entire brain (30 x 100 rad, 250 kV).

In August, 1960 a laparotomy was performed because of abdominal distress. A large tumour was detected in the jejunum, whereas the mesentery exhibited many macroscopically involved nodes. The small bowel mass was resected with end-to-end anastomosis. One of the nodes was removed separately. The resected tumor contained metastatic malignant melanoma; in the attached mesentery two nodes evidenced secondary melanoma. The

separate node biopsy also showed metastatic involvement. Wound healing was considerably delayed because of wound infection.

In August, 1962 a thorough neurological evaluation failed to disclose evidence of cerebral recurrence. Four months later the patient was re-admitted for an ill-defined lump in the scar of the previous laparotomy. A second exploratory laparotomy was performed. However, careful examination of the abdomen failed to reveal macroscopic evidence of metastatic disease. Several biopsies were taken but no residual tumor was detected. Since the first laparotomy the patient had received no therapeutic manipulation that could account for the regression. He was last seen in May, 1978, nearly 18 years after the resection of the intestinal mass, without clinical evidence of recurrent melanoma.

## SUPPLEMENTAL REFERENCES MALIGNANT MELANOMA

Alteration des Charakters einer Geschwulst nach Auftreten von Erysipelas  
MOSENIGIL K  
*Archiv für Klinische Chirurgie* 12: 1871; 68-69

Über Einen Fall von Totalresorption eines Grossen Melanosarkoms  
PLENIO CJO  
*Archiv für Klinische Chirurgie* 34: 1887; 698-700

Als Beitrage zum Kapitel "Erysipel und Karzinom"

MÜLLEDER A

*Zentralblatt für Chirurgie* 59: 1932; 1684

Cancer as a Chronic Disease

MORTON JJ JR; MORTON JH

*Annals of Surgery* 137(6): May 1953; 683-703

Spontaneous Regression of Melanoma: Report of a Case

SUMNER WC

*Cancer* 6(5): Sep 1953; 1040-1043

Malignant Melanoma

SPENCER RP

*New England Journal of Medicine* 253: July 7 1955; 18-29

A Clinical Evaluation of Malignant Melanoma

VOGLER WR; PERDUE GD; WILKINS SA JR

*Surgery, Gynecology and Obstetrics* 106: 1958; 586-594

Malignant Melanoma Treated with Vaccinia

Injections

BURDICK KH

*Archives of Dermatology* 82: 1960; 188-189

The Experimental Local Therapy of Cutaneous

Metastases of Malignant Melanoblastoma with Cow Pox Vaccines or Colcemid (Demecolcine or Omaine)

BELISARIO JC; MILTON GW

*Australasian Journal of Dermatology* 6: 1961; 113-118

Enhancement of Natural Resistance to Malignant Melanoma with Special Reference to the Beneficial Effects of Concurrent Infections or Bacterial Toxin Therapy: End Results in 50 Cases

FOWLER GA

*Cancer Research Institute Monograph* 9, NY : 1969

Multiple Melanoma: Beneficial Effects of Acute

Infections or Immunotherapy (Bacterial Vaccines)

NAUTS HC

*Cancer Research Institute Monograph* 12: 1975

Effect of Postoperative Wound Infection on the Course of Stage II Melanoma

PAPACHRISTOU DN; FORTNER JG

*Cancer* 43(3): Mar 1979; 1106-1111

## EPITHELIAL CARCINOMA

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# An Observation of the Effects of Erysipelas on Epithelial Cancer

COLLINS J

*Times and Register* 27: 1894; 268

### Extracted Summary

A case is reported in which recurring epithelial cancer disappeared after an attack of erysipelas. The case is reported without special comments, since Dr. Coley has written on this subject in considerable detail. The author comments that he is aware that a single case from the practice of a surgeon is but of little value, isolated and alone, but it is hoped that it will stimulate others to add their experience and observations.

### SELECTED CASE REPORT

About eighteen months ago my attention was called by Mr. M. to an ulcer nearly opposite the ear, on the right cheek. This ulcer was one and a half inches in longest diameter, one inch in the shorter, presenting an oval with irregular edges. The discharge was slightly purulent, tinged with blood. The granulations were soft and bled on the slightest touch.

Mr. M. stated that twenty years ago there appeared at this point a small elevation, which frequently formed a scab, which every ten or twelve days would fall off and then reform, giving but little trouble and received but little treatment.

Nineteen years ago he was treated for a time with ointments and lotions, also some medicine was administered without special benefit. He was then assured that this was skin cancer and incurable. This ulcer gradually increased in size and depth. Some benefit was derived from a lotion of zinc sulphate and salt, dissolved in water to make a mild astringent solution. The ulceration, however, continued giving inconsiderable pain, but much annoyance by its presence. The good man quietly accepted the situation, seeking only palliation and relief from pain.

About November 12 he suffered from an attack of erysipelas of the face. This ran no unusual course, spread-

ing rapidly from tip of nose over scalp to nape of neck. The efflorescence was followed by desquamation. The external dressing was of ichthyol and lanolin, which seemed to give relief and comfort.

As the erysipelas faded out, the desquamations following the ulcer seemed to assume a more healthy appear-

ance. Granulations of a more normal character developed and in about two weeks the ulcer was entirely healed. The cicatrix on March 1 is slightly indurated, but smooth and firm, presenting the appearance of normal cicatricial tissue...

# Neuroblastoma

## The Transformation of a Malignant Paravertebral Sympathicoblastoma into a Benign Ganglioneuroma

CUSHING H; WOLBACH SB

*American Journal of Pathology* 3: 1927; 203-216

### *Extracted Summary*

A paravertebral swelling at the sixth thoracic level occurred in the back of a child 2 years of age, following a trauma. The lesion proved on exploration to be a cellular sympathicoblastoma (sympathetic neuroblastoma) which was mistaken at the time for a sarcoma. The tumor had apparently taken its origin from the region of an intervertebral foramen and had extended into the spinal canal as well as into the spinal muscles. Apparently under the influence of Coley's toxins the activity of the growth subsided.

Ten years later, owing to the persistence of a paraplegia, an exploratory laminectomy was performed. This disclosed a relic of the former growth whose cells had become completely differentiated into ganglion, capsular and neurilemma cells.

Because of the unusual circumstances which permitted a study of the lesion at two remote periods, the case illustrates particularly well what has been pointed out by others, that a sympathetic neuroblastoma may be the precursor of a ganglioneuroma.

## Experiences in Spontaneous Regression of Neoplastic Disease in Man

STEWART FW

*Texas Reports on Biology and Medicine* 10: 1952; 239-253

### *Extracted Summary*

A discussion of the biology of cancer, spontaneous regression of cancer, along with case reports of spontaneous regression of cancer, is presented.

### SELECTED CASE REPORT

The next case was in an infant a few months old. He was brought to the hospital with multiple tiny subcutaneous nodules. When one was subjected to biopsy, a diagnosis of neuroblastoma was made. After the final result I sent these sections to various pathologists in New York and Boston and always got back the same diagnosis: neuroblastoma. The child had small radium

plaques applied to one or two of the nodules to see if they exhibited enough sensitivity to warrant, let us say, general body irradiation. They did not. He also had a little of the old Coley toxin—not really treatment. After being discharged with a hopeless diagnosis, the nodules proceeded to disappear. Today, more than five years later, he is a perfectly healthy child.

# Cutaneously Metastasizing Sympathetic Neuroblastoma with “Spontaneous” Regression

HORNSTEIN VO; MÜLKE G  
*Dermatologica* 120: 1960; 35-52

## Extracted Summary

An infant, age three weeks, is described. Without any effect on the general health there were numerous cutaneous metastases secondary to a sympathetic neuroblastoma of the right suprarenal gland. Radiotherapy of one of the cutaneous lesions and the administration of corticosteroids had no effect. At the age of 6 months all the tumours disappeared rapidly. After more than 2 years there has been no relapse. The regression of the tumours coincided with an attack of chickenpox and the authors discuss the possibility of the virus having an oncolytic effect.

## SELECTED CASE REPORT

**E**xcerpt from Case Report:...At the age of 5 1/2 months the child suffered from chickenpox. Since that time the skin tumours shrank remarkably! At the age of 6 1/2 months many of the small nodes, espe-

cially the ones which had developed last, had already disappeared. During all that time the child had been observed only, but had not received any medical treatment. (Note: See full text of case report on pages 207-208.)

# Spontaneous Regression of Stage IV Neuroblastoma

EKLÖF O; SANDSTEDT B; THÖNELL S; ÅHSTRÖM L  
*Acta Paediatrica Scandinavica* 72(3): 1983; 473-476

## Extracted Summary

Neuroblastoma presenting with wide-spread osseous metastases (stage IV) is generally considered incurable. However, rare cases of spontaneous regression and cure are on record. This report deals with such a case in which an infant received steroids as sole treatment for developing skeletal pain. Established metastases to the brain, scalp and skeleton disappeared. Today, 4.5 years later, the patient is free from symptoms and signs of tumour.

## SELECTED CASE REPORT

**E**xcerpt from Case Report:...Considering the age of the boy and the seemingly radical extirpation no adjuvant treatment was applied. Recovery was uneventful but for a slight wound infection with culture proved growth of staphylococci.

Four weeks after discharge from hospital the patient was readmitted with fever and reduced mobility of the right arm. Roentgenograms of the humerus showed a suspect periosteal reaction but a scintigram was negative. Considering the unspecific manifestations and the previous wound infection, treatment with antibiotics was initiated resulting in abatement of the symptoms. However, relief was only temporary and the patient was soon readmitted having developed a right-sided exophthalmus, torticollis and multiple skeletal metastases, in addition to

recurrent fever. At this point the condition was regarded incurable and the patient discharged with analgesics described for the increasing skeletal pain. However, the employed drugs proved inadequate pain relief and they were replaced by a daily dose of 15 milligrams prednisolone. In spite of continuing dissemination of osseous metastases and development of secondaries in the brain and scalp the pain diminished, finally disappearing completely. The boy's increasingly cushingoid appearance induced gradual withdrawal of the steroid, completed approximately 4 months after initiation of therapy and 10 months after the operation. During this period urine vanillylmandelic acid (VMA) and HVA values continuously increased then suddenly dropping to normal...

(Note: See full text of case report on pages 216-217.)

SUPPLEMENTAL REFERENCE  
NEUROBLASTOMA

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The Apparently Beneficial Effects of Concurrent  
Infections, Inflammation, Fever and of Bacterial  
Toxin Therapy on Neuroblastoma

FOWLER GA; NAUTS HC

*Cancer Research Institute Monograph 11: 1970*

# Neoplasms of Genitourinary Organs

## RENAL CARCINOMA

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### Disappearance of Metastases Following Nephrectomy for Carcinoma

BUEHLER HG; BETTAGLIO A; KAVAN LC

*Oklahoma State Medical Association. Journal 53(10): Oct 1960; 674-677*

#### *Extracted Summary*

Two cases of carcinoma of the kidney are presented in which spontaneous disappearance of metastatic pulmonary lesions has occurred following nephrectomy. In one patient a postoperative staphylococcus infection occurred. Ten months later a chest film was taken which showed almost complete clearing of the pulmonary metastases.

#### SELECTED CASE REPORT

**E**xcerpt from Case Report:...A left nephrectomy was done on November 19, 1958. A tumor mass measuring fifteen by thirty centimeters was removed. Extension of the tumor to the caval and aortic areas with involvement of the renal vein was noted. The postoperative course was uneventful except for a staphylococcal infection. The follow-up chest films at the time of discharge showed little, if any, change. The microscopic diagnosis was clear cell carcinoma with extension into the renal vein.

On September 22, 1959, the patient was readmitted for evaluation. He had gained twenty pounds and was symptom-free. Except for the previously described hernia and a well-healed nephrectomy scar, the physical exami-

nation was negative. A chest film taken 10 months postoperatively showed almost complete disappearance of the pulmonary metastases. No bony metastases were detected on either the chest or abdominal films.

An inguinal herniorrhaphy was done. The postoperative course was complicated by a staphylococcal infection which cleared very slowly. At the present time which is over fourteen months since the nephrectomy, there is no clinical or x-ray evidence of malignancy. The patient is doing well. Although at no time was a biopsy of the pulmonary lesions obtained, the x-ray findings were typical of metastatic disease.

(Note: See complete text of case report on page 242.)

# Regression of Metastatic Renal Cell Carcinoma Following Nephrectomy

GARFIELD DH; KENNEDY BJ  
*Cancer* 30(1): Jul 1972; 190-196

## Extracted Summary

Regression of pulmonary metastases following nephrectomy for renal cell carcinoma has occurred in two patients. In one patient, a hepatopathy also disappeared, and the patient remained free from the disease for 16 years. In the other patient, following nephrectomy there was disappearance of hypercalcemia, presumably due to removal of a source of production of a parahormone-like polypeptide.

Immunologic factors may be significant in the observed regressions following nephrectomy. In both our first patient and in the patient described by Kolar (*Fortschr Roentgenstr*, 95: 1961, 710), a prurulent wound infection developed in the postoperative period and was present for some weeks. Concurrent acute infections may have a beneficial effect on host resistance to cancer.

## SELECTED CASE REPORT

**E**xcerpt from Case One:...The postoperative period was uncomplicated except for a purulent wound infection which healed in 4 weeks. No systemic or topical antibiotics were used. The serum calcium, 4 days after surgery, was 9.1 gm/100 ml. At a clinic visit 6 weeks after surgery, the patient was asymptomatic and gaining weight. The chest x-ray showed an increase in size and number of all pulmonary metastases. No treatment was

instituted. Serum calcium was 9.9 mg/100 ml. Eleven weeks after surgery, he was still feeling well. The chest x-ray showed a decrease in the size of all the pulmonary nodules. By the 18th week, the chest x-ray showed disappearance of all pulmonary lesions. The patient has returned full time to his occupation as a grave digger.

(Note: See full text of case report on pages 247-248.)

# Spontaneous Remission of Solitary Bony Metastasis After Removal of the Primary Kidney Adenocarcinoma

DOOLITTLE KH  
*Journal of Urology* 116(6): Dec 1976; 803-804

## Extracted Summary

The second case of spontaneous remission of a biopsy-proven osseous metastasis from a renal carcinoma is reported. The unusual feature of the patient presenting with a right varicocele and no hematuria is extremely rare.

In the editorial comments following the case report there is presented a speculation concerning the postoperative wound infection. "One would have to wonder whether the patient's wound infection played any role in inducing the regression of the osseous metastasis. Improved survival of patients with lung cancer has been reported to be associated with postoperative empyema."

## SELECTED CASE REPORT

**E**xcerpt from Case Report:...Convalescence was uneventful except for a wound infection. Follow-up studies 6 weeks postoperatively revealed that the bony lesion had decreased in size. It had completely disap-

peared on studies 6 months later and has not recurred to date. The lungs have remained free of metastatic disease.

(Note: See full text of case report on pages 255-256.)

# Spontaneous Regression of Lung Metastases from Renal-Cell Cancer

## *Myth or Reality? Report of Two Cases*

BARRÉ C; VÉRINE JL; RÉGNIER J; ÉNON B; HOUSSIN A; CHAIGNÉ P; SORET JY  
*Annales D'Urologie* 20(4): 1986; 275-279

### *Extracted Summary*

The authors report two cases of regression of lung metastases from renal cell cancer with cytological and histological proof. They present a complete review of the literature and analyze the theories proposed to explain this phenomenon.

For the majority of authors the immunological reaction appears to be an important element. The factors capable of stimulating an immunological reaction are numerous. These factors can act independently or together. The beneficial effect of bacterial infections on the survival of patients with advanced stages of cancer is a very old but still valid observation. Stephenson (Surgery, Gynecology & Obstetrics 133 (1971) 649) found that, among 224 cases of tumor regression described in the literature, 62 patients had severe infections before the regression occurred. The kind of stimulation of immune reaction provoked by bacterial infection was the foundation of numerous approaches to cancer therapy. We probably have, in the case of our first patient, the cause-effect relationship between staphylococcus pleural pneumonia and the regression of metastases one month after the infection.

### SELECTED CASE REPORT

**E**xcerpt from Case 1:...The postoperative period was characterized by a severe infection associated with pleuropulmonary staphylococci. Ten days' therapy with antibiotics resulted in the normalization of the lung parenchyma and the persistence of the right pleura congestion. Fifteen days later nodules resembling metastases appeared in two areas. Bronchoscopy and fibroscopy was performed. The obtained specimen was composed of

carcinomatous cells whose morphology was not similar to the morphology of primary brochiocarcinoma. Very unexpectedly the nodules disappeared 3 weeks later, and the patient's condition normalized. The patient survived for another 5 years; the bronchoscopic and radiosopic tests were normal, and his general health was excellent.

(Noetic Sciences translation)

(Note: See complete text of case report on page 251.)

### SUPPLEMENTAL REFERENCES RENAL CARCINOMA

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Spontanschwind von Lungenmetastasen eines  
Neirenkarzinoms  
KOLAR J; BEK V; JAKOUBKOVA J; PALECEK L; VANCURA J  
*Fortschritte auf dem Gebiete der Roentgenstrahlen* 95(5):  
1961; 710-712

Enhancement of Natural Resistance to Renal Cancer:  
Beneficial Effects of Concurrent Infections and  
Immunotherapy with Bacterial Vaccines  
NAUTS HC  
*Cancer Research Institute Monograph* 12: 1973

## Papillary Cystadenocarcinoma of Both Ovaries

*Report of a Case with Apparent Cure Eight Years After Operation*

GAUDRAULT GL

*New England Journal of Medicine* 239(2): Jul 8 1948; 56-57

### Extracted Summary

Papillary cystadenocarcinoma of the ovary is a malignant epithelial growth. The prognosis is very poor. Early diagnosis is essential, and treatment should be as radical as circumstances permit, followed by x-ray therapy. A case of papillary cystadenocarcinomas of the ovary, diagnosed approximately one year after the onset of symptoms, is reported. The patient had actual surgical, but not radical, treatment four years after the onset of symptoms and without postoperative x-ray therapy. Yet after more than eight years she feels well, works every day, and is apparently cured.

### SELECTED CASE REPORT

**E**xcerpt from Case Report:...The postoperative recovery was fair and rather stormy because the patient was deprived of morphine. She was given two 500 cc transfusions. The drain was removed on June 27. The abdomen was not healed before September 12, and until

that time the temperature went as high as 102°F. The patient was then transferred to the medical service. She improved, gradually gained weight and was discharged November 22, after having spent 1086 days in the hospital. (Note: See complete text of case report on pages 279-281.)

### SUPPLEMENTAL REFERENCES

#### FEMALE GENITAL ORGANS

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Un Cas Remarkquable de Guerison d'un Cancer Uterin  
a la Suite de l'Apparition d'un Erysipele

BIDLOT

*Gazette medicale de Liege* 5: 1893; 232

Über eine Seltene, vom Typus abweichende Form des  
Chorinepithelioms mit Ungerwöhnlichem Verlaufe

FLEISCHMANN C

*Monatsschrift für Geburtshuelfe und Gynaekologie* 17:  
1903; 415-428

Beneficial Effects of Acute Concurrent Infection,  
Inflammation, Fever or Immunotherapy (Bacterial  
Toxins) on Ovarian and Uterine Cancer

NAUTS HC

*Cancer Research Institute Monograph* 17: 1977; 122 pgs.

# Neoplasms of the Eye

## RETINOBLASTOMA

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### Glioma Retinae Treated by Radon Seeds

STALLARD HB

*British Medical Journal* 2: Nov 14 1936; 962-964

#### *Extracted Summary*

A case report of a child with glioma retinae (retinoblastoma) is presented in which the author treated the mass with radon seeds inserted through the sclera and sutured into the eye where they remained for ten days. Regression of the mass was observed over a period of two months and for two years after the treatment there was no clinical evidence of any glioma retinae anywhere in the fundus of the eye or elsewhere. The child was able to see well enough to play with other children. As a part of the case history the author discusses the family history and presents a brief case history of the child's father whose retinoblastoma regressed after a severe attack of scarlett fever.

#### SELECTED CASE REPORT

The family history contained certain features of unusual interest. The father of the child had had his left eye removed for glioma retinae [retinoblastoma] at the age of 14 months, and this diagnosis had been confirmed by pathological examination. The right eye was similarly affected, and his parents refused to allow it to be excised. At the age of 4 years he developed a very severe attack of scarlet fever, and during this attack the right eye gradually "cleared." In 1934 he was 34 years old, well and employed as a secretary at a mental hospital. In the fun-

dus oculi near the equator and along the course of the upper and lower nasal branches of the central retinal vessels there are now two irregularly shaped pale areas where the retina is atrophic, and there is some pigmentary disturbance. The retinal vessels traversing these areas are slightly darker in colour than normal. There is no evidence of any intraocular neoplasm, and no defect in the visual acuity. He was seen by several ophthalmic surgeons of good repute, who had no doubts about the clinical diagnosis...

### Spontaneous Regression of Bilateral Retinoblastoma

BONIUK M; GIRARD LJ

*American Academy of Ophthalmology and Otolaryngology. Transactions* 73(2):  
March-April 1969; 194-198

#### *Extracted Summary*

A 62-year-old man had a bilateral spontaneously retrogressed retinoblastoma with phthisis bulbi in one eye and a characteristic picture of chorioretinal atrophy and chalk-white areas of calcification in the other eye with 20/200 vision. It is believed that the ophthalmoscopic picture is characteristic, that phthisis bulbi in children should make one strongly suspect the possibility of retinoblastoma and that, histologically, the presence of focal areas of calcification (often adjacent to bone) with remnants of pyknotic nuclei should be considered pathognomonic of retrogressed retinoblastoma. It is important to recognize this pathologically so that the other eye of the patient and the eyes of his siblings may be examined periodically for evidence of viable tumor.

## SELECTED CASE REPORT

**E**xcerpt from Case Report: A 62-year-old white man had a febrile illness at the age of 18 months. Since that time he had had no vision in the shrunken right eye and poor vision in the left eye. In 1962 he had an uneventful cataract extraction in the left eye with postoperative vision of 20/200. Fundus examination revealed large

whitish areas of chorioretinal atrophy inferiorly and two elevated chalk-white areas of calcification temporally and inferiorly. In 1967 a clinical diagnosis of retrogressed retinoblastoma was made and the right phthisical eye was enucleated for diagnostic and cosmetic purposes...

(Note: See complete text of case report on page 292.)

# Neoplasms of Lymphatic and Hematopoietic Tissue

## LEUKEMIAS

### The Treatment of Leukemia with the Mixed Toxins of Coley

LARRABEE RC

*Boston Medical and Surgical Journal 158(6): Feb 6 1908; 183-187*

#### Extracted Summary

Two considerations lead to a hope for favorable results from the use of bacterial products in leukemia. The first is the close similarity of leukemia in many of its features to sarcoma, in which Coley has obtained excellent results from the use of the mixed toxins of *Streptococcus* and *Bacillus prodigiosus*. The second consideration which would lead one to expect benefit in leukemia from the use of bacterial products is the improvement frequently observed in this disease as a result of intercurrent infections.

In order to determine what effect, if any, bacterial products might have on leukemia the author presents four case reports of patients in which the mixed toxins of *Streptococcus* and *Bacillus prodigiosus* were used. One showed a degree of improvement amounting to symptomatic recovery, which has now lasted for upwards of four months. Another showed considerable temporary improvement. A third showed improvement in weight and general condition only. A case of the acute lymphatic type was uninfluenced. Although two are still under treatment there does not appear to be much hope of permanent cure.

## SELECTED CASE REPORT

**C**ase 1. Female, age thirty-two, married. Patient of Dr. N. N. Levins, of Boston. Her illness began with indefinite gastric symptoms, severe frontal headache and increasing debility. In April, 1907, she was admitted to the Boston City Hospital with well-marked myelogenous leukemia. The lower border of the spleen was an inch above the level of the umbilicus and the liver edge was two inches below the margin of the ribs. The results of her blood examinations on April 21 produced the following results: white blood cells, 240,000/cc; polymorphonuclear neutrophils, 57; lymphocytes, 2; mononuclears, 10; eosinophils, 4; myelocytes, 27. She was given

Fowler's solution in increasing doses. Between May 6 and July 12 she was treated with the roentgen rays. Seventeen exposures were made over the splenic region, the duration being from 20 to 25 minutes. She improved somewhat, especially as regards the blood (July 31: hemoglobin, 55%; red blood cells, 3,512,000/mm<sup>3</sup>); white blood cells, 128,400/cc; polymorphonuclear neutrophils, 66; lymphocytes, 1.5; mononuclears, 0.5; eosinophils, 0.5; mast cells, 2.5; neutrophilic myelocytes, 29; eosinophilic myelocytes, 0), but finally, after her discharge from the wards, she became unable to visit the hospital for treatment.

She was seen at her home on July 31. She was

confined to the bed and her temperature had reached 105°F. daily for a week. She was cachetic and emaciated. The liver was 3 1/2 inches below the costal margin and the spleen 3 1/2 inches below the level of the umbilicus, its right border reaching the median line. There were a few small nodes in the groin and axilla.

Treatment with the mixed toxins of *Streptococcus* and *Bacillus prodigiosus* (Coley) prepared by Parke, Davis & Co., was begun by Dr. Levins on August 6. The initial dose was a tenth of a drop. It was given in increasing doses, at first daily and then at longer intervals. Since October 11, but one dose has been given.

The results in this case were most gratifying. The blood chart on August 10th showed hemoglobin, 50%; white blood cells, 77,800/cc; polymorphonuclear neutrophils, 72; lymphocytes, 1; mononuclears, 0.5; eosinophils, 0.5; mast cells, 2; neutrophilic myelocytes, 24; and eosinophilic myelocytes, 0. The spleen decreased in size till only an area as large as the palm of the hand extended below the edge of the ribs. The most marked improvement was in the patient's general condition. She improved from the first. In four days her temperature was normal and the spleen perceptibly smaller. In a few weeks she was able to be up and about. Her color became normal and she gained in weight. She still expresses herself as feeling perfectly well.

Certain untoward incidents should be mentioned. A slight chill occurred after the twelfth dose (2 drops). After this, even though the dose was reduced to a drop, the local inflammation following the injections was so severe that

the interval had to be increased. On September 29, a new supply of toxins was obtained from Dr. Martha Tracy, of the laboratory of the Huntington Cancer Research Fund. The patient had been receiving three drops about twice a week. After a two-drop dose of the new preparation there was a slight chill which was repeated with each of four subsequent doses. Finally, on October 11, after a dose of two drops, there was a very severe chill accompanied by a remarkable rise in the leucocytes to 340,000/cc. This explosive outpouring of cells involved chiefly the normal polymorphonuclear neutrophils (88), the myelocytes sharing in the process only to a moderate degree. After this the toxins were omitted till November 2, when an attempt was made to resume them in doses of a half drop. The first dose caused another very severe reaction and no further attempt to use the Coley toxins in this case has been made.

On December 12, the administration of killed cultures of *Bacillus coli communis* furnished by Dr. T. Leary was begun. The initial dose was 50,000,000, and the maximum dose up to the present (February 1) was one billion, the injections being made on alternate days. The treatment has proven much less painful than that with the streptococcus and bacillus prodigiosus toxins. The early doses caused a drop in temperature to 98° or 97°. Her general and subjective conditions remain excellent and the red corpuscles and hemoglobin have risen to normal. The influence on the blood would appear to be much less marked, or at least much less prompt than it was with the early injections of the Coley toxins.

## Spontaneous Remission and Reported Cures of Leukemia

FORKNER CE

*Chinese Medical Journal* 52(1): Jul 1937; 1-8

### *Extracted Summary*

Spontaneous remissions in acute leukemia, characterized by disappearance of symptoms, reversion of the blood findings to near normal and disappearance of enlargement of the spleen and liver or of the lymph nodes, is rare. No examples of such remissions in proved or adequately studied cases of chronic leukemia have been recorded. Subjective and temporary symptomatic improvement of a lesser degree together with lessening of the enlargement of lymph nodes, spleen and liver and improvement in the state of the blood sometimes does occur in chronic leukemia as the result of intercurrent infection or without any known associated cause. This latter phenomenon may be regarded as the natural course of the disease in some cases.

Very rarely patients who exhibit the typical clinical picture of leukemia may appear to recover completely from the disease either spontaneously or as the result of treatment. Such apparent recoveries, however, must be regarded with grave doubt since it is not uncommon for leukemoid reactions, the result of infection or other disorder, to simulate closely the picture of acute leukemia. Until a group of adequately studied cases is available and until more knowledge is gained concerning the etiologic nature of leukemia, it will be difficult to determine with certainty whether or not recovery from the disease is possible.

# Spontaneous Remission in Acute Leukemia

## *Report of a Case Complicated by Eclampsia*

BIRGE RF; JENKS AL JR; DAVIS SK

*Journal of the American Medical Association* 140: June 18 1949; 589-592

### *Extracted Summary*

Acute leukemia in a 33-year-old woman had its onset in the seventh month of gestation. Symptoms of eclampsia developed, and she prematurely delivered a nonviable infant which showed no evidence of leukemia at autopsy. After delivery, she improved rapidly and was in good health for twenty-one months, whereafter again the clinical and hematologic picture of acute leukemia developed and the patient died.

During the remission, cytologic evidence of leukemia in the sternal marrow and in the peripheral blood disappeared. The administration of radioactive phosphorus, in an attempt to induce a second remission, was followed by reduction in the leukocyte and thrombocyte counts without clinical evidence of improvement.

The foregoing case exemplifies a unique form of acute leukemia which has been characterized by an acute febrile onset, frequent involvement of mucous membranes and less frequent splenomegaly and lymphadenopathy. Initially, severe anemia, leukopenia and thrombocytopenia are observed. There follows a remission, lasting as long as 21 months, characterized by apparent restoration of health, by disappearance of demonstrable lymphadenopathy and splenomegaly and by return of the peripheral blood and bone marrow pictures to normal or nearly normal. Suddenly, fever and other clinical manifestations of acute leukemia reappear; lymphadenopathy and splenomegaly, if previously present, return. The leukocyte count rises rapidly in most instances and evidence of acute leukemia in the peripheral blood and bone marrow is again apparent.

Ideally, remissions induced by aminopterin (4-aminopteroyl glutamic acid) or by other means should simulate the spontaneous ones described.

### SELECTED CASE REPORT

**E**xcerpt from Case Report:...After delivery, the patient remained in a comatose state for several days, but she gradually improved. Her temperature fluctuated from 100 to 105° F., but was normal after September 29. The content of albumin in the urine gradually decreased, until only a slight trace was present on October 1.

On September 24, the total leukocyte count was 5,400 with 50% stem cells. Five days later the count was 4,500 with 26% stem cells. The heterophil antibody reaction was negative. The serum protein was 4.6 gm/100 ml, and the

blood uric acid was 2.9 mg/100 ml. A blood culture was negative.

During October she gradually improved. The leukocyte count dropped to 2,250 on October 7 and then gradually rose to level of 6,200 ten days later. Stem cells decreased in number until it was impossible to find them after October 12. A sternal puncture, performed on October 14, revealed a remarkably different picture from the previous one. The picture was that of an essentially normal marrow...

(Note: See complete text of case report on pages 313-315.)

## Pattern of "Spontaneous" Remissions in Leukemia of Childhood Observed in 26 of 300 Cases

DIAMOND LK; LUHBY AL

*American Journal of Medicine* 10: 1951; 238-239

### *Extracted Summary*

The incidence and pattern of "spontaneous" remissions were studied in 300 children with leukemia encountered over a twenty-five-year period. Of this group, 90% had acute "blast cell" leukemia. Among these, twenty-six cases of "spontaneous" remissions, an incidence of 9.65% were observed; 4.45% were complete remissions, 5.2% were partial.

The disease and pattern of remission were alike in all patients in three important respects; all had "blast cell" acute leukemia. Total peripheral white cell counts, with two exceptions, were normal or reduced, occasionally slightly elevated; remission was characteristically preceded by a marked leukopenia of the blood and hypoplasia of the bone marrow; severe infection preceded this "hypoplastic phase" in 92% of the complete remissions, in 75% of the partial remissions. Infections were pyogenic; septicemia was frequent.

Interestingly, three-fourths of the complete remissions occurred in 1945, 1946, and 1947 when, among other things, several important antibiotics became widely available. These may have prevented infections which became severe from necessarily becoming fatal.

## A Study of the Natural History of Acute Leukemia with Special Reference to the Duration of the Disease and the Occurrence of Remissions

SOUTHAM CM; CRAVER LF; DARGEON HW; BURCHENAL JH

*Cancer* 4: 1951; 39-59

### *Extracted Summary*

One hundred seventy-two cases of acute leukemia seen at Memorial Hospital from 1926 through 1948 have been analyzed with reference to occurrence of remissions (exclusive of the twenty-two cases treated with folic acid antagonists) and the effect of various treatments on survival time. Data on age and sex incidence, symptoms, signs, and hematological data are briefly considered.

It was found that 8.7% of the 150 patients experienced some degree of temporary remission but that only 4.0% had complete temporary remissions. No patient in this group had more than a single remission. Remissions appeared unrelated to type of preceding treatment or to infection. Remissions reported in the literature have been tabulated.

In the present study, the term "remission" is defined as an improvement in the basic pathological process. Two degrees of remission are recognized. Complete remission is the complete (though temporary) disappearance of all signs and symptoms of leukemia. This includes return of blood and marrow to an apparently normal status (including maintenance of normal hemoglobin); complete regression of enlarged liver, spleen, nodes, and tumors; absence of fever; and return of subjective well-being. During complete remission it is impossible to make a diagnosis of leukemia on present findings. Partial remission implies, as a minimum, definite but incomplete return of marrow and peripheral blood toward normal, and partial improvement in physical findings and subjective status.

In several of the reported cases, remission was preceded by a period of acute illness with fever, and usually with infection in the upper respiratory tract or other regions. This is apparently the basis for the common statement that remissions may be causally related to the infectious process, but the evidence for such a belief seems to be only circumstantial, and it is difficult to accept a causal relationship between infection and remission in a disease characterized by marked susceptibility to infections and a relative infrequency of remissions. Riis has expressed this same belief. It is interesting, however, to speculate, in the light of current research on the therapeutic effects of metabolic antagonists, that the nutritional deficiencies that undoubtedly occur during periods of severe debilitation might conceivably have an etiological role in bringing on these remissions. The possibility of adrenal stress during such periods should also be considered, in view of remissions currently being seen during treatment with adrenocorticotrophic hormone and cortisone. The authors present 16 illustrative case reports including four reports in which spontaneous remission occurred. (Case 5, 6, 7, and 16)

# Effects of Glandular Fever Infection in Acute Leukemia

TAYLOR AW

*British Medical Journal* 1: Mar 14 1953; 589-593

## *Extracted Summary*

Observations on the effect of glandular fever infection, natural and induced, in cases of acute leukemia are recorded. It is concluded that there is evidence that such infection may in some cases be responsible for remissions in leukemic disease. Six cases are reported.

The observations reported here relate to the acute monocytic variety of acute leukemia and are based on the observation of a clinical remission which occurred in a case of acute monocytic leukemia in an adult. In this case a remission appeared to coincide with the appearance of glandular fever type cells in the peripheral blood and of a positive Paul-Bunnell heterophil antibody reaction in the serum. In the remaining five cases attempts were made to induce glandular fever infection in cases of acute monocytic leukemia; the results of these attempts are recorded and their possible significance is examined.

# Remission in Leukemia of Childhood Following Acute Infectious Disease

*Staphylococcus and Streptococcus, Varicella and Feline Panleukopenia*

BIERMAN HR; CRILE DM; DOD KS; KELLY KH; PETRAKIS NL; WHITE LP; SHIMKIN MB

*Cancer* 6(3): May 1953; 591-605

## *Extracted Summary*

Case histories are presented of eleven children with lymphatic leukemia who developed infections during the course of their leukemia. Marked clinical and hematological remission of the leukemia was seen in two children with hemolytic staphylococcus septicemia, in one child with varicella, and in one child who was injected with the feline panleukopenia virus. Similar but less complete effects were observed in six other children.

The sequence of events in these remissions is as follows: A child with acute lymphatic leukemia, with a high or a low leukocyte count, and with or without a marked granulopenia, develops an infection that is followed by fever, marked drop in the peripheral leukocyte count and occasionally by a hypoplastic phase in the bone marrow. If the patient survives this phase, the hemogram returns toward normal and a temporary clinical remission may occur.

In all cases, the leukemic process returned, and no evidence is available from the present data that such remissions were associated with a significant prolongation of life.

The rapid and almost complete return toward normal hematological and clinical appearance in some children with fulminant leukemia following acute infections is a strong indication that some major features of leukemia are reversible.

# The Natural History of Untreated Leukemia

TIVEY H

*Annals of the New York Academy of Sciences* 60: 1954; 322-358

## *Extracted Summary*

A review has been made of relevant available publications on acute untreated leukemia. Estimates on the incidence and prevalence of acute leukemia, by age, sex, and cell type have been presented.

The clinical features and laboratory findings have been reviewed with the intent of providing features which might be useful in the evaluation of new therapeutic agents. Available base-line data are presented.

A total of 102 spontaneous first remissions in leukemia have been analyzed. Such remissions can occur at all ages, in both sexes, and in all common types of leukemia. These remissions most frequently follow an incident which could be interpreted as “adrenal stress” and clinically appear to resemble in character those produced by ACTH or cortisone. The median duration of such spontaneous remissions is 6.6 weeks, statistically not different from a median duration of 5.2 weeks for 54 cortisone-ACTH remissions reviewed. It is suggested that the mechanism of spontaneous remissions is through the endogenous production of “therapeutic” quantities of adrenal hormones.

Remissions have been sporadically observed in acute leukemia almost as long as the disease has been recognized. Eisenlohr in 1878 (Virchows Archiv Section A: Pathological Anatomy and Histology 73 (1878) 56-73) noted the typical pattern of remission. A 19-year-old male was seen with a remarkable leukocytosis and severe anemia (leukocytes nearly equal in number to erythrocytes), hepatomegaly and splenomegaly. A febrile illness supervened, followed by a decrease in the leukocytosis and a regression of organ enlargement. Heuck's patient of 1879 (Virchows Archiv Section A: Pathological Anatomy and Histology 73 (1879) 475-496) followed a similar course, but in this instance apparatus was available for estimating the decrease in leukocyte counts.

Of the 102 cases of spontaneous remission analyzed (48 adults and 54 children), 51 cases collected by Southam et al. (Cancer 4 (1951) 39-59) and 51 cases collected from the literature, factors associated with spontaneous remission were tabulated. Pyogenic infections occurred in 23 patients (8 adults, 15 children), fevers of unknown etiology occurred in 5 patients (1 adult, 4 children), and viral diseases occurred in 10 patients (chickenpox in 3 children, measles in one child, feline leukopenia in 2 children, and infectious mononucleosis in 4 adults) prior to remission. Hence, in 38 of 76 remissions in which a definite antecedent event could be found, the remission was preceded by a febrile illness.

Transfusions preceded remission in 17 cases (usual transfusion in 8 adults and 5 children, exchange transfusion in 2 adults and 1 child, marrow transfusion in 1 adult). In 10 cases, various extracts had been used prior to observed remissions (bone marrow in 1 adult and 3 children, urine or feces in 1 adult and 2 children, pentonucleotides in 2 children, and adrenal extract in 2 children). In 4 cases non-specific trauma were antecedent events, and in 7 cases, various agents (nitrogen mustards, urethane, arsenic and B<sub>12</sub>, folic acid) were used prior to a remission.

## Effects of Concurrent Infections and Their Toxins on the Course of Leukemia

PELNER L; FOWLER GA; NAUTS HC  
*Acta Medica Scandinavica* 162(Suppl 338): 1958; 1-47

### *Extracted Summary*

Of all the recorded cases of so-called “spontaneous” regression in cancer or “spontaneous” remission in leukemia, the great majority have occurred in patients who developed an acute concurrent infection, inflammation or fever, principally streptococcal infections.

Before studying this phenomenon in leukemia, approximately 350 histories of cases of malignant tumors in which such complications may have played a salutary role were assembled for study. In 167 of these patients (152 inoperable, 15 operable, untreated) the neoplasms disappeared, and 62 of these remained free from recurrence or metastases when last traced 5 to 44 years later. Among the 73 determinate operable cases in which infection or inflammation developed before or after surgical removal, 52 patients were traced 5 to 54 years later, free from disease.

However, if the infection developed following heavy radiation or if the disease was very far advanced, only temporary or partial regression of the neoplasms occurred.

The beneficial effects of acute concurrent infections or fever on leukemia have also been observed by a large number of investigators. Over 70 such histories have been reported in the

literature and many others have been cited briefly. Often the infection did not occur until the terminal stage of the leukemia, and this may have been one reason why permanent benefit following such infections has not been reported in cases of leukemia, although 36 patients with malignant lymphoma remained free from further evidence of disease after concurrent infection or toxin therapy.

As to how acute infections, inflammation, fever or bacterial toxin therapy may exert their apparently beneficial effects on patients with cancer or leukemia, it is known that neoplastic cells are more sensitive to heat than are normal cells. However, in addition to this factor, it appears that infections or their toxins may activate or mobilize various tissues or systems in the body which may be less active than normal in these patients.

## Temporary Remission in Acute Leukemia After Attack of “Acute Appendicitis”

EINHORN M

*Journal of the American Medical Association* 175(11): Mar 18 1961; 1006-1008

### *Extracted Summary*

It has been observed by numerous investigators during the past 70 years that acute infections or very high fevers on occasion appear to exert beneficial effects on acute leukemia. Richter (Charité-Annalens 21 (1896), 299) described a remarkable remission in a case of far advanced granulocytic leukemia following a severe attack of facial erysipelas. In the same publication he referred briefly to 11 other cases having similar responses to other types of infections which included typhoid fever, tuberculosis, pneumonia, and influenza. Dock (American Journal of the Medical Sciences 127 (1904), 563) reported that in 11 of 23 cases of leukemia complicated by infections the leukocyte count returned to normal. Shear (in Reinhard et al., Journal of the American Medical Association 142 (1950), 383) mentioned that among several hundred untreated cases of acute leukemia in Boston, brief remissions were observed in 9.5% of the cases. Of these, over 75% were preceded by severe infection. Bierman's group (Cancer 6 (1953), 591) described marked clinical and hematological remissions in 2 children with hemolytic staphylococcus septicemia. The sequence of events which they observed following infections were fever, marked decrease in the leukocyte count, and occasionally a bone marrow hypoplasia. In the patients who survived this, a clinical remission sometimes occurred. Perner, Fowler, and Nauts (Acta Medica Scandinavica 162 (1958), 1) presented an exhaustive review of the literature on the effects of concurrent infections on the course of leukemia. They revealed that 70 cases in which leukemia had benefited by an infection have been reported, and many others referred to briefly.

In the case presented in this report a patient with acute lymphoblastic leukemia developed a temporary, clinical, peripheral, blood and bone marrow remission after an attack of “acute appendicitis.” It could be speculated that the acute fulminating appendicitis stimulated the patient's defense mechanism to produce an increased amount of “antileukemic” substance. Since an operation was not performed, there is no conclusive proof that the patient did actually have appendicitis. It is also very evident that the 6-mercaptopurine therapy which had been given for 2 weeks and had been discontinued about 11 days before the onset of the remission, or the steroids and blood transfusions which had been continued without interruption, may have contributed to or been entirely responsible for the remission. It is possible that the “appendicitis” occurred coincidentally at a time when the bone marrow which had a 6-mercaptopurine-induced hypoplasia was about to enter a stage of regeneration. However, it can be definitely stated that shortly after a severe inflammatory process resembling appendicitis the acute leukemia underwent a remarkable remission.

# Possible Effect of Measles on Leukaemia

PASQUINUCCI G

*Lancet* 1: Jan 16 1971; 136

## *Extracted Summary*

In this letter the author presents brief case reports of two patients with lymphoblastic leukaemia who began treatment in 1965. During the course of their treatment the patients contracted measles and both are alive at the time of this report. The author suggests that measles contracted during treatment of lymphoblastic leukaemia may have beneficial effects.

# Measles and Leukaemia

GROSS S

*Lancet* 1: Feb 20 1971; 397-398

## *Extracted Summary*

The author reports a case of short-term remission from lymphoblastic leukemia. The patient developed measles at a time when her disease no longer responded to chemotherapy. The author states that he has little doubt that there was a relationship between measles, remission, and an immunologically responsive state and suggests that monitoring the immunoglobulins may make it possible to identify the 'responsive' state in which therapy with infectious agents could be safely used.

# Spontaneous Remission of Leukemic Lymphoproliferative Disease

HAN T; SOKAL JE

*Cancer* 27(3): March 1971; 586-595

## *Extracted Summary*

Spontaneous remission was observed in 4 of approximately 400 patients with chronic lymphocytic leukemia or malignant lymphoma with leukemic manifestations. Findings prior to spontaneous remission in these patients included generalized lymphadenopathy and splenomegaly.

The occurrence of spontaneous remission of acute leukemia in association with acute infection is frequently mentioned. In chronic lymphocytic leukemia, decrease in the lymphocyte count and diminution in splenomegaly after an infection have been documented (Hart S, *New York State Journal of Medicine* 78 (1903), 224.) In only one patient of the present series (case 1) was there an association of remission with an antecedent (presumably viral) acute infection.

## SELECTED CASE REPORT

**E**xcerpt from Case One:...In May, 1963, she had an upper respiratory infection and an episode of upper abdominal distress...Between April and September, 1963, the total white blood cell count fell to normal levels. On examination in our clinic in September, lymphadenopathy and hepatosplenomegaly had regressed markedly. Hemoglobin was 12.8 g/100 ml, platelet count 280,000/mm<sup>3</sup>, and the white blood cell count 9,943/mm<sup>3</sup> with 67% lymphocytes. There was a gradual fall in the percentage of lymphocytes during the next 3 years, and a normal

lymphocyte count was reached in September, 1966. Lymphadenopathy had not been noted since that time, and the liver and spleen have not been palpable. When she was last seen, in May, 1968 (at 82 years of age), the hematocrit was 40%, platelet count 106,200/mm<sup>3</sup> and the white blood cell count 5,466/mm<sup>3</sup>, with 30% lymphocytes. Bone marrow aspiration and biopsy at that time still showed marked lymphocytic infiltration, however.

(Note: See complete text of case report on pages 316-317.)

# Spontaneous Regression of Hematologic Cancers

WIERNIK PH

*National Cancer Institute Monographs 44: 1976; 35-38*

## *Extracted Summary*

Spontaneous regression of hematologic cancer is extremely rare. Data gleaned from the literature and from previously unreported cases allows certain interesting general conclusions. Spontaneous remission of acute leukemia is associated with bacterial infection and is of short duration, weeks to months. Spontaneous regression of lymphoma or plasma cell dyscrasia is often of substantial duration, months or years, and frequently is associated with viral infections. Spontaneous regression of chronic lymphocytic leukemia is also of significant duration and has been associated with the occurrence of a new primary carcinoma in one-third of the cases.

## Remission of Chronic Lymphocytic Leukemia After Smallpox Vaccination

HANSEN RM; LIBNOCH JA

*Archives of Internal Medicine 138: July 1978; 1137-1138*

## *Extracted Summary*

A 78-year-old man with untreated chronic lymphocytic leukemia (CLL) was revaccinated for smallpox. A severe local reaction and generalized rash followed that responded to treatment with vaccinia immune human globulin. After recovery, the leukocyte count fell to normal and all evidence of CLL disappeared. He remains in complete remission three years after smallpox vaccination.

In a letter in response to a case report presented by Dr. Maurice Yettra (*Archives of Internal Medicine* 139 (1979), 603), Dr. Hansen reported that this patient remains in complete remission 4 1/2 years after smallpox vaccination. (Note: See complete text of case report on page 318.)

## Remission of Chronic Lymphocytic Leukemia After Smallpox Vaccination

YETTRA M

*Archives of Internal Medicine 139: May 1979; 603*

## *Extracted Summary*

In a letter, a case is reported in which, following smallpox vaccination, remission of chronic lymphocytic leukemia occurred. In the patient described, the vaccination did not result in any unusual immediate local or generalized vaccinia reaction.

### SELECTED CASE REPORT

A 56-year-old woman was diagnosed as having CLL in July, 1970, at which time her CBC count showed the following: hemoglobin, 12.0 gm/dL; WBC count, 16,200/mm<sup>3</sup>. Differential cell count showed 27% segmented neutrophils and 72% lymphocytes. Bone marrow examination results showed infiltration with mature lymphocytes to about 25% to 50% of all formed elements. Sections of bone marrow particles contained several large abnormal lymphoid follicles. Physical examination results were normal except for residual signs of poliomyelitis, which the patient had had at the age of 11

months. A review of her medical record showed that her WBC count had always been slightly elevated, in the range of 11,000 to 12,000/mm<sup>3</sup>, as long ago as 1955, but with normal differential cell counts. However, in 1966 she began showing signs of an absolute lymphocytosis, with cell counts at that time being hemoglobin, 14.9 gm/dL, and WBC count, 15,000/mm<sup>3</sup> with 56% lymphocytes. From 1966 to 1970 her absolute lymphocyte count varied from 6,600 to 8,400/mm<sup>3</sup>. This suggests that the onset was in 1966 or earlier. Platelet counts were always normal.

No treatment was given and the patient was asympto-

matic. Physical examination results were normal except that a 1.5 centimeter firm lymph node was noted in the left submandibular area in July 1971. The tip of the spleen could first be felt in September 1972. The WBC count gradually rose to a maximum of 79,000/mm<sup>3</sup>, with 96% lymphocytes, in June 1973. There was anterior and posterior lymphadenopathy and the spleen was palpable 3 to 4 centimeters below the left costal margin at that time.

The patient received two smallpox vaccinations in July, 1973 before a European trip. There was a vaccinoïd-type reaction without any unusual systemic symptoms.

There was a gradual drop in total WBC count over the next nine months to 8,500/mm<sup>3</sup>, with 81% lymphocytes in March, 1974. During that period most of the lymphad-

enopathy disappeared and the spleen became impalpable.

From March, 1974 until August, 1977 the WBC count varied from a low of 7,300/mm<sup>3</sup> to a high of 13,400/mm<sup>3</sup>, with absolute numbers of lymphocytes varying from a low of 3,700/mm<sup>3</sup> to a high of 7,500/mm<sup>3</sup>. Bone marrow examination was not repeated.

In December, 1977 the WBC count again began to rise. The spleen was again enlarged to 3 to 4 centimeters below left costal margin when the patient was examined in July, 1978.

Serum protein electrophoresis results and quantitative immunoglobulin study results by immunoelectrophoresis have been normal.

## Spontaneous Remission in Acute Myelogenous Leukemia in the Adult

LACHANT NA; GOLDBERG J; NELSON DA; GOTTLIEB AJ  
*American Journal of Medicine* 67(4): Oct 1979; 687-692

### Extracted Summary

A spontaneous complete remission of 17 months duration was observed in a patient with acute myelogenous leukemia. Resolution of all clinical and morphologic abnormalities occurred. The remission was apparently associated with an acute pulmonary infection.

Reports of spontaneous remissions of acute myelogenous leukemia in adults have become increasingly rare, and the remissions themselves are short-lived. Despite the association between spontaneous remissions and acute infections or febrile episodes, attempts at remission induction with infectious agents have been unsuccessful. Spontaneous remissions are an uncommon variant of the natural course of acute myelogenous leukemia in the adult.

### SELECTED CASE REPORT

Excerpt from Case Report:...The patient was hospitalized in early June, 1976 because of pneumonia in the lower lobe of the right lung. The hemoglobin level was 5.6 gm/dl, the white blood cell count was 1,500/microliter, with 24% granulocytes and 76% lymphocytes. Multiple cultures of blood, urine and sputum were negative. The patient remained febrile despite therapy with cephazolin and gentamicin...Positive physical findings on

initial examination included a temperature of 38.2°C, scleral icterus, consolidation of the lower lobe of the right lung, a palpable spleen tip, diffuse petechiae and ecchymoses, and moderate ankle edema...The chest film showed pneumonia in the lower lobe of the right lung with a pleural effusion...

(Note: See complete text of case report on page 320.)

## Spontaneous Remission of Erythroleukemia Following Interstitial Pneumonia

ADERKA D; SHOENFELD Y; BERLINER S; SANTO M; SHAKLAI M; PINKHAS J  
*New York State Journal of Medicine* 81(5): Apr 1981; 772-773

### Extracted Summary

A patient with adenocarcinoma of the breast treated with irradiation and melphalan subsequently developed erythroleukemia. A spontaneous remission of the leukemic process lasting for five months was noted following interstitial pneumonia.

Spontaneous remission in acute leukemia, a rarely noted event in itself, was observed especially following pneumonia (Lachant NA et al., *American Journal of Medicine* 67 (1979), 687).

Spontaneous remission of erythroleukemia is extremely rare, and has not been reported in the English medical literature during the last two decades. The spontaneous remission in this patient is remarkable since it occurred concomitantly with the resolution of an interstitial pneumonia which was probably of a viral origin.

#### SELECTED CASE REPORT

A 73-year-old woman was operated on in 1974 for adenocarcinoma of the breast. Radiation therapy totalling 1,500 rads and melphalan for one year totalling 300 milligrams were the mainstay of treatment until September, 1979, when she was admitted for the first time to our department. She showed extreme weakness, generalized purpura, and pancytopenia. There was neither hepatosplenomegaly nor enlargement of the lymph nodes.

The hemoglobin was 6 gm/dL, the white blood cell count 1,500/mm<sup>3</sup> with 3% blasts, 5% myelocytes, and 5% metamyelocytes. The platelet count was 10,000/mm<sup>3</sup>, and 50% normoblasts were seen in the peripheral blood smear. The pertinent blood chemistry examinations revealed: bilirubin 1.7 gm/dL (direct 1.3 gm/dL), lactic dehydrogenase 549 I.U., leukocyte alkaline phosphatase score 290 (normal 40 to 70), IgG 510 mg/dL (normal 1,050 ± 200), IgA 115 mg/dL (normal 200 ± 60), and IgM 55 mg/dL (normal 80 ± 20). The Coombs', Ham, and Crosby tests gave negative results. A bone marrow biopsy revealed a marked increase of karyocytes, consistent with the diagnosis of erythroleukemia.

On the sixth hospitalization day interstitial pneumonia was diagnosed. An extensive search for pathogenic organisms, including repeated bacteriologic, virologic, and serologic examinations gave negative results. The treatment consisted of gentamicin sulfate and cephalothin sodium for 10 consecutive days without an observable benefit.

However, resolution of the pneumonic process was noted within two weeks and concomitantly there was an improvement in the peripheral blood picture, with the disappearance of blasts, myelocytes, metamyelocytes and normoblasts. The hemoglobin concentration had risen to 9 mg/dL, the white blood cell count to 3,400/mm<sup>3</sup> with 60% polymorphonuclears, 10% band forms, 10% monocytes, and 20% lymphocytes and there were no normoblasts. The platelet count was 90,000/mm<sup>3</sup>. The patient refused another bone marrow biopsy. Her condition was satisfactory, the purpura waned, and she returned to her daily activities. Five months later a hematologic relapse was noted with reappearance of blasts and normoblasts in the peripheral blood and the patient succumbed shortly afterwards to *Pseudomonas aeruginosa* septicemia.

## Spontaneous Remission of Acute Leukemia in Two Children

LEBLANC A; ALLARD C

*Archives Francaises de Pediatrie* 38(4): April 1981; 275-276

#### Extracted Summary

A spontaneous remission of hematologic symptoms was observed in 2 children with myeloblastic and lymphoblastic acute leukemia. As in previous cases in the literature, remission was preceded by severe bacterial infection with leukopenia and bone marrow hypoplasia.

#### SELECTED CASE REPORT

Case 1: Phillippe was hospitalized in February, 1973, at age 11, for a pneumopathy of the left lung base. The hemogram revealed pancytopenia: hemoglobin 6 mmol/L, polynuclear neutrophils 700/mm<sup>3</sup>, platelets 85,000/mm<sup>3</sup>. The bone marrow was invaded by myeloblasts containing Auer rods. The diagnosis was made of acute myeloblastic leukemia. An initial treatment with a combination of rubidomicin with arabinose cytosine resulted in a complete remission after 20 days of aplasia. During the next 15 months, the child was given maintenance treatment with 6-mercaptopurine and Methyl-GAG, and reinductions of arabinose cytosine.

In July, 1974, the patient developed asthenia and weight loss. The hemogram was normal but an excess of

prolymphocytes was noted in the marrow (13% myeloblasts). Shortly after the appearance of a painful abdominal and febrile episode, the patient was hospitalized. Surgical intervention revealed an acute nonspecific pseudotumoral appendicitis. This was followed by pancytopenia and two myelograms were performed that confirmed hematologic relapse with, first, 16% then 42%, myeloblasts. This was associated with a nondystrophic bone marrow plasmocytosis of 8 and 24%, respectively. The recovery period following surgery was complicated for several weeks with undernourishment and a pyocyanic infection that was treated with carbenicillin and gentamicin. A disjunction of the intestinal wall was followed by a fistula. The pancytopenia continued for one month then regressed completely

without treatment. Four weeks after the relapse was diagnosed, the bone marrow was scanty without blasts. At the same time, the abdominal wound healed and the intestinal fistula closed.

Maintenance treatment and reinductions were

resumed in May 1975, 9 months after the spontaneous remission, at which time there appeared a second hematologic relapse. The child died shortly thereafter of infection during a new treatment with chemotherapy.

(Noetic Sciences translation)

## Spontaneous Remission in Acute Nonlymphocytic Leukemia

RAZA A; GILL LM; RAKOWSKI I; PREISLER HD

*New York State Journal of Medicine 85(6): Jun 1985; 269-270*

### *Extracted Summary*

Spontaneous remission in acute non-lymphocytic leukemia (ANLL) is a rare but not unknown phenomenon. We describe a patient with acute promyelocytic leukemia who, on initial contact, was so acutely ill that chemotherapy had to be withheld until the overwhelming bacterial infection could be brought under control. As the infection responded, a simultaneous improvement was noted in his hematologic picture as well as a partial remission in the bone marrow.

A review of the literature shows that several cases of spontaneous remission in ANLL were associated with severe life-threatening infections. Based on these observations, it was proposed that nonspecific stimulation of the immune system by the infection might play a major role in inducing remission. Therefore, attempts were made to manipulate the immune system artificially by such techniques as injection of malarial parasites, the use of *M tuberculosis* or methanol-extracted residue. These measures have not resulted in any sustained benefit to date, and their use has been restricted to a few specialized centers.

## Spontaneous Remission in Adult Acute Leukemia

IFRAH N; JAMES J-M; VIGUIE F; MARIE J-P; ZITTOUN R

*Cancer 56(5): Sept 1 1985; 1187-1190*

### *Extracted Summary*

A spontaneous complete remission of 34-months duration was observed in an adult patient with acute myeloblastic leukemia. The remission occurred after a severe febrile pneumonia, which was treated with leukocyte transfusions. At relapse, chromosomal abnormalities reappeared slowly. Such spontaneous complete remissions, almost always associated with bacterial infections and blood transfusions, are extremely rare and are usually of short duration. Previous cases are summarized, and the role of etiologic factors, including those related to the leukemic proliferation, are discussed.

## Spontaneous Complete Remission in Acute Promyelocytic Leukemia

ENCK RE

*New York State Journal of Medicine 85(2): Nov 1985; 662*

### *Extracted Summary*

Spontaneous remission, whether partial or complete, of acute leukemia is rare. Prolonged survival, as in this case of more than eight years, is even more unusual. As noted by Raza et al. (*New York State Journal of Medicine 85 (1985), 269*), these spontaneous remissions are usually preceded by severe life-threatening infections and, as recently suggested by Ifrah et al. (*Cancer 56 (1985), 1187-1190*), by blood transfusions.

In the case described here, dramatic clinical and laboratory improvement occurred four days after *Klebsiella* bacteremia was documented. In addition, the patient was transfused with a total 17 units of whole blood over the two-month history of his disease. It seems unlikely that the treatment with prednisone and 6-MP had any impact on the patient's disease since serial bone marrow examinations showed no change with more than one month of therapy.

#### SELECTED CASE REPORT

A 28-year-old man was admitted to the hospital in January, 1967 with a several week history of frequent episodes of epistaxis, a pale complexion, and easy bruising. Pertinent physical findings included petechiae on the right forearm, bilateral ecchymoses on his lower extremities, bilateral conjunctival hemorrhages, and scattered cervical and supraclavicular lymphadenopathy.

Laboratory examination revealed a white blood count of  $1.2 \times 10^9/L$  with 23% blast cells; hemoglobin, 7.0 gm/dL; and platelet count,  $48 \times 10^3/L$ . The Lee-White whole blood clotting time and fibrinogen levels were normal, but the prothrombin time was increased to 15.5 seconds (control 13.0 seconds). Bone marrow aspirate showed the marrow to be hypercellular with 49% heavily granulated leukemic promyelocytes containing numerous Auer rods.

The patient was started on prednisone 30 milligrams and 6-mercaptopurine (6-MP) 200 milligrams daily, and was given a four-unit whole blood transfusion. After two weeks of treatment with prednisone and 6-MP, a repeat bone marrow examination was unchanged, and the patient was discharged. During the next month the patient remained granulocytopenic, thrombocytopenic, and anemic with no bone marrow change despite continued treatment with prednisone and 6-MP, transfusion with 11 units of whole blood, and two hospitalizations.

On the patient's last hospitalization, he was admitted in what was described as a "preterminal condition" with lethargy, a temperature of 104.6°F., nausea, vomiting, diffuse petechiae, and induration in the right axilla. White blood cell count at that time was  $0.250 \times 10^9/L$  with a platelet count of  $16 \times 10^3/L$ . Treatment with 6-MP was discontinued and broad spectrum antibiotics were administered. Three days after admission, two blood cultures were positive for *Klebsiella* species with evidence of a localized infection in the right axilla. Antibiotics were continued and two units of whole blood were transfused.

Seven days after admission dramatic improvement occurred as well as an increased white cell count to  $1.050 \times 10^9/L$  and platelet count to  $60 \times 10^3/L$ . On the ninth hospital day, *Klebsiella* was cultured from a purulent drainage from the right axilla. During the remainder of the 20-day hospitalization the right axilla abscess cleared with complete normalization of the blood counts, including absence of any blast cells in the peripheral blood. Prior to discharge the patient refused a follow-up bone marrow examination. The patient was lost to follow-up until this author came across his file and contacted him in May 1975. Physical examination and blood counts were normal, and the patient refused additional care.

## Hairy Cell Leukemia: A Reversible Disease?

### *A Report of Two Cases of Spontaneous Remission*

SILINGARDI V; FEDERICO M; BARBIERI F; ARTUSI T; MAURI C

*Haematologica* 70(5): Sept-Oct 1985; 437-441

#### *Extracted Summary*

Between 1967 and 1979 the authors observed 56 cases of hairy cell leukemia (HCL). Twenty patients are still alive and five of them are in good health over ten years after diagnosis. Two out of these five patients never received any specific treatment. The aim of this communication is to report these two cases of spontaneous remission in HCL.

#### SELECTED CASE REPORT

Excerpt from Case Report:...In the following three years he had several hospital admissions due to recurrent infections, such as bronchitis, cystitis and cholecystitis, and to persistent mild anemia. Afterwards, he showed progressive reduction of the hepatosplenomegaly and an improvement of the haematologic picture so that no further treatment was given. Subsequently the patient resumed work and was followed up with periodic blood counts. In 1980 he underwent transurethral prostat-

ectomy for prostatic hypertrophy. In December 1983, the patient was admitted for a re-evaluation of the case. Spleen and liver were no longer palpable; a trephine bone marrow biopsy revealed complete disappearance of lymphoid replacement and absence of fibrosis. In December 1984 he was still doing well without treatment 17 years after the diagnosis of HCL

(Note: See complete text of case report on page 325.)

# Treatment of Acute Nonlymphocytic Leukemia in Young and Elderly Patients

BEGUIN Y; BURY J; FILLET G; LENNES G  
*Cancer* 56(11): Dec 1 1985; 2587-2592

## *Extracted Summary*

Among 95 consecutive patients with acute nonlymphocytic leukemia (ANLL), 61 were treated with a high-dose chemotherapeutic induction regimen consisting of daunorubicin, vincristine, and cytosine arabinoside (DOA). The complete remission (CR) rate was 66%. Although young patients responded better than older patients, only sex was found to be of prognostic significance for achieving CR (84% CR in men versus 47% in women,  $P < 0.005$ , independent of age). Patients in CR received consolidation, monthly maintenance therapy, and late intensification for a period of 2 years. Median remission duration was 57 weeks and median survival, 93 weeks. Projected CR rate at 5 years was 30%. CR and survival duration were significantly longer in patients 40 to 60 years old when compared with younger and older patients ( $P = 0.023$ ). They were also longer in male than in female patients ( $P = 0.018$ ), but this may be due to an effect of age.

In the 34 patients who did not receive DOA treatment because of age or poor clinical conditions, there was no survival beyond 57 weeks, except in a 73-year-old woman who reached a spontaneous remission during acute infection. ANLL characteristics at presentation revealed a tendency toward a smaller tumor mass ( $P < 0.05$ ) and rarer Auer rods present ( $P = 0.03$ ) with increasing age. Features and treatment of ANLL in elderly patients are discussed in view of the poor results obtained with conservative management.

# Spontaneous Remission of Acute Myeloid Leukemia

*A Report of a Case and Brief Review of the Literature*

JEHN UW; MEMPEL MA  
*Blut* 52(3): Mar 1986; 165-168

## *Extracted Summary*

A patient with acute myelomonocytic leukemia, who experienced a spontaneous remission, is reported. He had precedent and concurrent bacterial infections as most of these cases described. Low peripheral WBC and myeloblasts, Auer rod positive blasts, bone marrow eosinophilia with atypical eosinophils, and a partial deletion of chromosome 16 were favorable prognostic parameters. A brief review of the literature and possible explanations for the regulation of granulopoiesis are presented.

# Spontaneous Remission of Chronic Lymphocytic Leukemia: An Update

HAN T  
*Blood Cells* 12(2): 1987; 481-483

## *Extracted Summary*

The author summarizes 11 cases of spontaneous remission observed in approximately 600 patients seen at Roswell Park Memorial Institute over a period of nearly 6 decades. The cohort included seven males and four females. Their ages ranged from 37 to 69 years at the time of diagnosis. Six had stage 0, 3 had stage II and the remaining two had stage III disease. One patient with stage III had two partial remissions with chlorambucil therapy followed by relapses some years before the spontaneous disappearance of all peripheral manifestations of her disease. Another patient with stage III had two transient partial remissions with triethylene melamine therapy prior to

the spontaneous remission; he died of bronchogenic carcinoma 14 years after the diagnosis of leukemia and 7 years after the onset of his spontaneous remission. Spontaneous remission was observed several years after the diagnosis in seven patients (six with stage 0 and one with stage II disease); five of those are still alive and two have died of unrelated cause. A complete autopsy was carried out on one case and no microscopic evidence of leukemia was found. These data clearly indicate that spontaneous remission in CLL may not be as rare as previously thought.

Upper respiratory infection was noted prior to the onset of spontaneous remission in 2 of 11 patients with CLL in the present study. Ribera and associates (*Blood Cells* 12 (1986), 471-479) observed viral infection (varicella zoster) in one case and possible viral infection (bilateral orchitis) in another case among three cases of spontaneous remission. Viral infections also preceded spontaneous remission in two cases reported by others. (Vladimirskaja EB, *Problemy Gematologii i Perelevaniya Krovi*, 7: 1962, 51-54 and Bousser J, *Nouvelle Revue Francaise D'hematologie* 5 (1965), 498-601.) In two additional patients, spontaneous remission was related to smallpox vaccination. (Hansen RM, *Archives of Internal Medicine* 138 (1978), 1137 and Yettra M, *Archives of Internal Medicine* 139 (1979), 603.) These observations suggest that viral infection may play a role in the induction of spontaneous remission in some cases.

## “Spontaneous” Complete Remissions in Chronic Lymphocytic Leukemia

### *Report of Three Cases and Review of the Literature*

RIBERA JM; VIÑOLAS N; URBANO-ISPIZUA A; GALLART T; MONTSERRAT E; ROZMAN C  
*Blood Cells* 12(2): 1987; 471-483

#### *Extracted Summary*

“Spontaneous” complete remissions (SCR) are a rare event in chronic lymphocytic leukemia (CLL). In this article, we report three cases of SCR observed in a series of 285 patients followed at a single institution during the last 15 years. SCR was documented by clinical and hematologic data, including bone marrow biopsy, and immune cell markers. A delay of 0.9-1.6 years between “clinical” and “clonal” remission was observed. A review of other cases of SCR in CLL is also performed.

The remission-associated event was infection in Cases 1 and 3. In the review of the other cases of SCR in CLL, infections, mainly viral, preceded SCR in 3 of 26 cases and SCR was related to smallpox vaccination in two additional patients.

#### SELECTED CASE REPORT

**E**xcerpt from Case 1:...In February, 1980, 23 months after the therapy, the patient had a severe varicella zoster infection. One month later the number of leukocytes was  $4.6 \times 10^9/l$  with 35% lymphocytes. In May, 1980, the absolute lymphocyte count was  $2.5 \times 10^9/l$ , E-rosettes were 35% and sIg, 63%. A second bone marrow biopsy showed a nodular infiltration pattern. In September, 1981, E-rosettes were 68%; sIg, 22% (Kappa: 16%, lambda: 10%). In November, 1981, a hiatus hernia

was diagnosed and a fundoplicature was performed. No lymphadenopathy consistent with the diagnosis of CLL was found in the abdominal cavity. A biopsy of a perigastric lymph node showed nonspecific lymphadenitis. In May, 1986, the patient remained healthy and the absolute lymphocyte count was  $1.5 \times 10^9/l$ . The analysis of immune markers showed: E-rosettes, 50%; M-rosettes, 2%, sIg, 11% (K: 9%, lambda: 7%); OKT3, 35; OKT4, 30%; and OKT8, 10%. (Note: See full text of case report on page 326.)

# Spontaneous Remission in Hypoplastic Acute Leukemia

KIZAKI M; OGAWA T; WATANABE Y; TOYAMA K  
*Keio Journal of Medicine* 37(3): Sep 1988; 299-307

## Extracted Summary

A recurrent spontaneous complete remission of acute hypoplastic leukemia was observed. The remission occurred after a severe infection which was treated with antibiotics. Reports of spontaneous remission of acute leukemia in adults have become increasingly rare, and the remissions themselves are short-lived. Such spontaneous complete remissions are almost always associated with bacterial infections and blood transfusions. Previous cases are summarized, and the pathophysiological factors are discussed.

## SUPPLEMENTAL REFERENCES LEUKEMIAS

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Leucamiae Lienalis, Lymphatica et Medularis mit  
Multiplen Gehirnnervenlahmungen  
EISENLOHR C  
*Virchows Archiv Section A: Pathological Anatomy and  
Histology* 73: 1878; 56

Lukamie and Erysipel  
RICHTER PF  
*Charité-Annalen* 21: 1896; 299-309

Chronic Lymphatic Leukemia Complicated by  
Pneumonia  
HART S  
*New York State Journal of Medicine* 78: Aug 1903; 220-227

The Influence of Complicating Disease Upon Leukemia  
DOCK G  
*American Journal of the Medical Sciences* 127: 1904; 563-92

Les Rémissions de la Leucémie Aiguë  
DREYFUS B  
*Sangre* 1: 1948; 35-40

Multiple Spontaneous Remissions in a Child with  
Acute Leukemia The Occurrence of Agranulocytosis  
and Aplastic Anemia in Acute Leukemia and Their  
Relationship to Remissions  
BASSEN FA; KOHN JL  
*Blood* 7: 1952; 37-46

Due Casi di Leucemia Migliorati a Seguito di  
Complicazioni Infettive  
PAOLINO W; SARTORIS S  
*Minerva Medica (Torino)* 51(82): Oct 14 1960; 3454-3456

A Case of Prolonged Spontaneous Remission in a  
Patient with Chronic Lymphatic Leukaemia  
VLADIMIRSKAIA EB  
*Problemy Gematologii I Perilevaniya Krovi* 7: 1962; 51-4

Observations on the Repeated Administration of  
Viruses to a Patient with Acute Leukemia  
WHEELOCK EF; DINGLE JH  
*New England Journal of Medicine* 27: 1964; 645-651

Leukaemia and Neoplastic Processes Treated with  
Langat and Kyasanur Forest Disease Viruses: a Clinical  
and Laboratory Study of 28 Patients  
WEBB HE; WETHERLEY-MEIN G; GORDON SMITH CE;  
MCMAHON D  
*British Medical Journal* 1: Jan 29 1966; 258-266

Remission in Acute Leukemia Resistant to Treatment  
Complicated with Steroid Diabetes and Severe Infection  
(Remisja w Ostrej Bialaczce Opornej na Leki  
Powiklanej Curkrazyca Sterydowa i Ciezkim  
Zakazeniem)  
WYSZKOWSKI J; ARMATA J; CYKLIS R; HALIKOWSKI B  
*Polski Tygodnik Lekarski* 24(2): Dec 22, 1969; 1974-1975

Beneficial Effect of Hepatitis in Patients with Acute  
Myelogenous Leukemia  
BARTON JC; CONRAD ME  
*Annals of Internal Medicine* 90: 1979; 188-190

Hepatitis and Leukemia [letter]  
CONRAD ME; BARTON JC  
*Annals of Internal Medicine* 90(6): Jun 1979; 988

Posttransfusion Hepatitis in Acute Myelogenous Leukemia: Effect on Survival  
FOON KA; YALE C; CLODFELTER K; GALE RP  
*Journal of the American Medical Association* 244: 1980; 1806-1807

Complete Spontaneous Remission In Acute Myeloblastic Leukemia (Remission Completa Espontanea En Leucemia Mieloblastica Aguda)  
SANZ GF; SANZ MA  
*Revista Clinica Espanola* 178(5): 1986; 229-30

Spontaneous Remission of Four Months' Duration in Hypoplastic Leukemia With Tetraploid Chromosome After Blood Transfusions and Infection  
MAEKAWA T; FUJII H; HORIIKE S; OKUDA T; YOKOTA S; UEDA K; URATA Y  
*Nippon Ketsueki Gakkai Zasshi (Acta Haematologica Japonica)* 52(5): Aug 1989; 849-857

## LYMPHOMAS

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# The Virus of Venezuelan Equine Encephalomyelitis As an Antineoplastic Agent in Man

TIGERTT WD; CROSBY WH; BERGE TO; HOWIE DL; KRESS S; DANGERFIELD HG;  
BASS JW; FRANK W  
*Cancer* 15: 1962; 628-632

### Extracted Summary

In 1904, Dock reported the following: "Summary of the case: A woman with mixed-cell [myelogenous] leukaemia, with greatly enlarged spleen. Two weeks after an attack of what was probably influenza, the leukocytes were found reduced from 367,070 to 7500...The spleen was much smaller; the liver became smaller later...[and both] remained small for many months...Such a change...forces one to try to learn something from it...of therapeutic value."

Since Dock's observation, (*American Journal of the Medical Sciences* 127 (1904), 563-592) there have been additional well-documented cases in which the progress of cancer was interrupted temporarily by intercurrent infection. (Bierman et al., *Cancer* 6 (1953), 591; Einhorn M, *Journal of the American Medical Association* 175 (1961), 1006; Paolino W et al., *Minerva Medica* 51 (1960), 3454; Pelner L et al., *Acta Medica Scandinavica* suppl 338 (1958), 1.)

Among the experiments done in this field to induce infection as a therapeutic measure, those of Southam and Moore (*Cancer* 5 (1952), 1025; *American Journal of Tropical Medicine* 3 (1954), 19) with West Nile virus in humans with advanced lymphoma are the most meaningful. Evidence of tumor regression was observed in 4 patients.

The present report describes tumor regression in 4 individuals with advanced lymphomas (3 patients with lymphosarcoma and 1 patient with Hodgkin's disease) inoculated with an attenuated strain of Venezuelan equine encephalomyelitis virus. Inoculation was followed by objective evidence of regression of tumor masses; this was associated with obvious subjective improvement in 3 of the patients. It was preceded by a febrile illness, with a temporary suppression of circulating leukocytes and platelets. Overt clinical encephalitis did not occur in these patients, and neither clinical nor histological evidence of encephalitis was found in 4 preterminal patients similarly inoculated.

## Host Defences in Burkitt Tumour

NGU VA  
*British Medical Journal* 1: 1967; 345-347

### Extracted Summary

The possibility that host factors or immunological agents play a part in the results achieved in the treatment of the Burkitt tumour has long been suspected.

Thus Burkitt (1962) in East Africa showed that adults living in regions where this lymphoma was prevalent did not suffer from the tumour, whereas adults who had come from non-endemic regions were apt to contract the lesion. Moreover, the overall long-term survivals achieved in the treatment of the Burkitt lymphoma are much better than those achieved with other lymphomas (Chemotherapy of Burkitt Tumour, 1966) even with small doses of drugs. Regressions of the Burkitt lymphoma have even occurred when treatment was abandoned or refused.

Ngu (1965) suggested that, if host factors were involved in some of the remissions seen, such factors would theoretically be easier to detect in those who had had long remissions than in those who had succumbed early to their tumour. Such early deaths might be taken as presumptive evidence of failure or inadequacy of host defence factors, whatever the reasons for this failure might be. Hence it was decided to search for a humoral factor in patients with long remissions.

The two patients receiving immune plasma had a moderate fever for which no satisfactory cause could be found (and which was refractory to antibiotics and antimalarial drugs). The remission of these fevers coincided with the onset of tumour regression.

#### SELECTED CASE REPORTS

**E**xcerpt from Case 1:...On 3 September 150 milliliters of immune plasma I was transfused into the child. Next day he looked infinitely better, though he had a temperature of 102°F. (38.9°C.). The patient's general condition remained satisfactory, but his temperature continued to swing until 12 September, when it settled...

**E**xcerpt from Case 2:...On 20 January, after immune plasma II (group B, Rh-positive) was found compatible with the patient's red cells (group O, Rh-positive),

she was given an infusion of 100 milliliters of the immune plasma. She was also started on prophylactic tetracycline, given for two weeks. On the fifth day after this she developed a swinging fever of up to 102°F. (38.9°C.), which persisted until the 14th day. Coinciding with the onset of the fever, the jaw tumour appeared to be somewhat larger and then became softer and more cystic in consistency. When the fever began to subside on the 14th day the tumour had become smaller and its cystic consistency more evident... (Note: See complete text of case reports on pages 562-563.)

## Lymphosarcoma

### *Remission Associated with Viral Hepatitis*

WEINTRAUB LR

*Journal of the American Medical Association* 210(8): Nov 24 1969; 1590-1591

#### *Extracted Summary*

A clinical and hematologic remission associated at onset with the occurrence of serum hepatitis developed in a patient with lymphocytic lymphosarcoma unresponsive to conventional therapy.

No specific therapy was given to the patient for five months prior to the incident of viral hepatitis and a subsequent remission lasted for 22 months at which time the patient died of congestive heart failure.

#### SELECTED CASE REPORT

**A** 68-year-old white man was admitted to the New England Medical Center Hospitals for the first time on July 15, 1965, with the chief complaint of weakness. The patient had excessive night sweats for six months prior to his admission. During the last two months he noted progressive anorexia, weight loss, and fatigue.

**Physical Examination:** Findings from a physical examination were as follows: blood pressure, 115/65 mmHg; pulse rate, 68 beats/minute; respiration rate, 16/minute. There were a few 0.5 to 1 centimeter nodes in the axillary and inguinal regions. The lungs were clear to percussion and auscultation. The heart was not enlarged but there

was a grade 3/6 apical systolic murmur. This had been present for at least 15 years. The liver was palpated 4 centimeters below the right costal margin and the spleen 10 centimeters below the left costal margin.

**Laboratory Data:** Laboratory studies revealed the following values: white blood cell count (WBC), 27,000/mm<sup>3</sup> with 81% lymphocytes; 18% polymorphonuclear cells and 1% monocytes, hemoglobin, 12.1 gm/100 cc; reticulocytes 2%; platelets, 214,000/mm<sup>3</sup>; the bone marrow aspirate was hypercellular; 80% of the cells were mature lymphocytes; the Coombs' test was negative. There was no occult blood in the stool.

The patient's condition was classified as leukemic

lymphocytic lymphosarcoma because of the rather large liver and spleen with only minimal lymphadenopathy and minimal elevation of the WBC. He was treated with a single dose of 30 milligrams of mechlorethamine hydrochloride (a nitrogen mustard) intravenously. In the following four weeks the night sweats disappeared. The spleen decreased in size to 4 centimeters below the left costal margin and the liver to 2 centimeters below the right costal margin. This was associated with a fall in the WBC to 8,000/mm<sup>3</sup>, hemoglobin to 9.5 gm/100 cc, and platelet count to 74,000/mm<sup>3</sup>. The WBC and platelet counts returned to pretreatment levels but the hemoglobin value remained at 9.5 gm/100 cc. Subsequently, increasing anemia, reticulocytopenia, and an enlargement of the spleen developed. The Coombs' test remained negative and there was no evidence of blood loss. Prednisone, 60 mg/day, and oxymetholone, 200 mg/day, were given without significant change in the patient's clinical condition. He required numerous blood transfusions to maintain his hemoglobin level in the range of 10 gm/100 cc because of angina when the hemoglobin level fell to 6 to 7 gm/100 cc. The bone marrow remained infiltrated with lymphocytes. In December, 1965, three 1 gram doses of cyclophosphamide (Cytosan) were given intravenously at weekly intervals. The fourth week, he was maintained with 100 milligrams of cyclophosphamide given orally each day. No significant change in the patient's hematologic picture was noted with this therapy. During this time, the rate of fall in his hemoglobin level and his transfusion requirement increased, which suggested that there was a hemolytic component as well as decreased production. In the first week of January, 1966, in an attempt to eliminate any hypersplenism, the spleen was removed. The removal was performed without complication. At the time of the operation no stones were palpable in the gallbladder. The histology of the spleen was compatible with lymphocytic lymphosarcoma.

Following the operation, the rate of fall in his hemoglobin level and transfusion requirements decreased. It was elected to treat the patient conservatively with transfusions as necessary. This was continued for 4 1/2 months. In May, anorexia, fatigue, low-grade fever, and dark urine developed. He had no right upper quadrant pain. These symptoms persisted for two weeks. He was

then seen by a physician and noted to be jaundiced. A tender liver was palpated 8 centimeters below the right costal margin. The hemoglobin level was 10.1 gm/100 cc and the reticulocyte count was now 1.6%. The WBC was 18,000/mm<sup>3</sup> with 50% neutrophilic granulocytes. Bilirubin level was 5.4 mg/100 cc (total) and 2.6 mg/100 cc (indirect); serum glutamic pyruvic transaminase (SGPT) level was 510 units and serum alkaline phosphatase, 8 units. The patient was felt to have serum hepatitis and was admitted to the hospital.

During the following seven days the bilirubin and transaminase levels began to fall. Hepatic tenderness disappeared and the liver decreased in size as the patient's appetite returned to normal. He was discharged to convalesce at home. Within one month liver function test results were normal. The hemoglobin concentration continued to rise and in three months reached a plateau in the range of 14 gm/100 cc.

Twelve months after the episode of hepatitis, in May 1967, the patient was in excellent clinical condition. He had returned to full activity, gained 9.1 kilograms (20 pounds) in weight, and denied any fatigue or night sweats. A few small, 0.5 centimeter, axillary and inguinal nodes were palpable. The liver was palpable 1.5 centimeters below the right costal margin. The patient's hemoglobin level was 14.5 gm/100 cc; WBC, 18,000/mm<sup>3</sup>, with 75% neutrophilic granulocytes. Results of bone marrow aspiration revealed normal granulocytic and erythropoietic maturation. Megakaryocytes were present in adequate numbers and there was no lymphocytic infiltration.

In March, 1968, 22 months after the hepatitis, severe pain developed in the patient's hip which prevented him from walking. X-ray examination revealed severe degenerative arthritis and destruction of the joint space in the right hip. His blood values were unchanged from those in May, 1967. After a brief hospitalization he was treated at home with physical therapy, heat, and salicylates. Shortly after discharge he suffered an episode of acute congestive heart failure which was not associated with any coronary or pleuritic chest pain. He was admitted to another hospital but died several hours later despite treatment with digitalis, diuretic, and oxygen therapy. A postmortem examination was not performed.

## Hodgkin's Disease: Remissions After Measles

ZYGIERT Z

*Lancet*: Mar 20 1971; 593

### *Extracted Summary*

Observations of the condition of children with Hodgkin's disease after measles infection are reported. Of 98 children with histologically proven Hodgkin's disease treated in the Paediatric Oncology department, Medical Academy of Warsaw, 3 contracted measles while under observation. Their state of health improved just after measles. The lymph nodes became smaller, fever fell, the erythrocyte sedimentation rate became normal, and the blood supply to the skin improved. After

measles 2 of the children had one slight relapse each, one child in the 19th month, the other in the 26th month. After treatment both are now in good health, in the 4th and 6th year after the diagnosis of Hodgkin's disease. The third child has enjoyed an uneventful remission for 6 years since measles. He is now in very good condition, in the 7th year after the diagnosis of Hodgkin's disease. By chance none of these 3 children had been treated with X-rays, cytostatics, or adrenal hormones for at least 3 weeks before contracting measles.

## High Fever and Cancer

MUCKLE DS; DICKSON JA; JOHNSTON IDA  
*Lancet: May 8 1971*

### *Extracted Summary*

The observation of Dr. Zygiert (March 20) of occasional remissions in Hodgkin's disease after an attack of measles may augment a theory common in Central Europe 100 years ago that an attack of hyperpyrexia often produced a long-term remission in cancer. Rhodenburg in 1918 noted that, of 166 cases of spontaneous remission in cancer patients, 72 had suffered from a high fever due to an infection.

In-vivo and in-vitro work in the author's department has shown that, for certain animal and human tumours, the malignant cells are more susceptible to raised temperatures than normal tissue, and perhaps the remissions reported by Dr. Zygiert may be due to the associated pyrexia.

## Regression of Burkitt's Lymphoma in Association with Measles Infection

BLUMING AZ; ZIEGLER JL  
*Lancet 2: July 10 1971; 105-106*

### *Extracted Summary*

There have lately been reports suggesting a beneficial effect of natural measles infection on the course of acute lymphoblastic leukemia. The authors have observed a complete regression of histologically diagnosed Burkitt's lymphoma in an untreated African child who contracted measles shortly after diagnostic biopsy. (Note: See full text of case report on page 337.)

## Spontaneous Regression in Non-Hodgkin's Lymphoma

GATTIKER HH; WILTSHAW E; GALTON DAG  
*Cancer 45(10): May 15 1980; 2627-2632*

### *Extracted Summary*

Two hundred nine cases of non-Hodgkin's lymphoma have been analyzed retrospectively for the occurrence of spontaneous regression (SR). Complete, partial or minor SR was found in 18 out of 140 cases with nodular lymphoma and in 2 out of 69 cases with diffuse lymphoma.

The regressions in childhood ALL occurred predominantly in association with bacterial infections, but no clear association was detectable in our series. In patient 3, the regression occurred after a severe chest infection, and in patient 8, it started at the same time as the patient began to suffer from asthma and repeated attacks of bronchitis. In patient 12, the regression started after 11 months of continuous penicillin treatment for recurrent cellulitis. No other case had a recent history of bacterial infection.

None of our cases showed an association with viral infections. However, one of us (D. A. G. G.) has recently observed a dramatic regression of lymph nodes and a fall in lymphocyte count in a patient with CLL after generalized varicella zoster infection.

# Spontaneous Remission of Burkitt's Lymphoma Associated with Herpes Zoster Infection

MCCLAIN K; WARKENTIN P; KAY N

*American Journal of Pediatric Hematology Oncology* 7: 1985; 9-14

## *Extracted Summary*

Spontaneous remissions of cancer have been reported with several types of malignancy. Often these remissions are associated with a febrile illness caused by a variety of viruses or bacteria. Unfortunately, these reports rarely give any data about factors in the immune system which may be responsible for the "spontaneous" remission. Interferon, natural killer cells, and tumor-specific antigens have been responsible for tumor-specific lysis in model systems.

We report a case of spontaneous remission of Burkitt's lymphoma during a herpes zoster infection in a 12-year-old white female. The remission lasted nearly 2 months before the tumor recurred in the central nervous system. LDH isoenzyme determinations done on an earlier ovarian tumor and serum at time of bone marrow relapse showed different predominant LDH isoenzyme patterns. These data might be interpreted as showing that different malignant cell clones were responsible for ovarian and bone marrow relapses. Studies to elucidate the mechanism of spontaneous remission at the time of zoster infection demonstrated serum factor(s) which stimulated normal B lymphocytes.

# Spontaneous Remission in Diffuse Large Cell Lymphoma

GREM JL; HAFEZ GR; BRANDENBURG JH; CARBONE PP

*Cancer* 57(10): May 15 1986; 2042-2044

## *Extracted Summary*

A case of spontaneous remission in a Stage IIA diffuse large cell lymphoma is presented. Review of the literature suggests that whereas spontaneous regressions are a well-recognized phenomenon in indolent lymphomas, it is extremely rare in lymphomas of aggressive histologic subtype.

In the case report the author reports that "the patient received intravenous penicillin G for 5 days followed by oral cefazolin for 1 month to treat a possible bacterial infection." However, the author states that "With rare exception, spontaneous remission in lymphomas generally is not associated with an antecedent bacterial infection."

# Spontaneous Remission in High-Grade Non-Hodgkin Lymphoma Stage-IV (meeting abstract)

WINDLER F; WEH HJ; HAMPER K; HOSSFELD DK

*Blut* 55(4): Oct 1987; 341

## *Extracted Summary*

Spontaneous remission in high-grade non-Hodgkin lymphoma has been reported only rarely. We describe the case of a 60-year-old patient who underwent emergency laparotomy for an acute abdomen. Excision of a perforated stomach ulcer was performed and biopsies of metastatic liver lesions were taken. Histologically immunoblastic lymphoma of the stomach with involvement of the liver was diagnosed. Postoperative staging revealed no other site of manifestation. Sonography and computed tomography confirmed liver lesions. Immunoblastic lymphoma stage IVA was diagnosed and chemotherapy (CHOP) planned. Endoscopically a persistent stomach ulcer was found. Therefore gastrectomy was performed to prevent perforation during chemotherapy, 4 weeks after emergency laparotomy. At this time, no more liver lesions could be detected preoperatively.

Histologically, no signs of lymphoma were found. Sonography and computed tomography of the liver also became normal postoperatively. Chemotherapy was withheld, and the patient remains in remission four years after diagnosis.

Possible mechanisms of spontaneous remission in non-Hodgkin lymphoma such as viral or bacterial disease, host defense factors or trauma like an operation are still unclear, but may provide important clues for understanding causes and developing concepts in cancer therapy.

## Spontaneous Regression in Non-Hodgkin's Lymphoma

### *Clinical and Pathogenetic Considerations*

DROBYSKI WR; QAZI R

*American Journal of Hematology* 1: 1989; 138-141

#### *Extracted Summary*

The spontaneous regression (SR) of tumor has been noted in a variety of neoplastic conditions. In non-Hodgkin's lymphoma, this phenomenon has been reported in indolent histologic subtypes, with a frequency of 10-20% in selected series. Investigators evaluating new therapies for lymphomas with a favorable histology need to be cognizant of SR's impact. Mechanisms which have been proposed to explain SR have included the role of contemporaneous bacterial or viral infection, as well as an augmented host-immune response which is able to mediate tumor regression via humoral and cellular effector mechanisms. Review of clinical experience as well as proposed mechanisms of spontaneous regression in non-Hodgkin's lymphoma will be explored in this report.

Defining specific mechanisms of regression has been difficult. What has been observed by some investigators, though, is the close temporal association between concomitant bacterial or viral infection and spontaneous regression of malignant lymphomas (Wiernik et al., NCI Monograph 44 (1976), 35, Bluming et al., *Lancet* 2 (1971), 105). More than 30 years ago, Nauts (Nauts et al., *Acta Medica Scandinavica*, 145: 1953, 1) demonstrated regression of cancer in 30 patients by treating them with culture fluid from bacteria, proposing a role for endotoxin as the mediator of tumor regression. While in the majority of cases of non-Hodgkin's lymphoma the reason for regression is not apparent, in a few of the reported cases there has been a temporal association with infection. Recent data also lend support to the hypothesis that infection may stimulate the immune system to induce tumor regression.

## Prolonged Spontaneous Remission of Case of Malignant Lymphoma

WOLF JW

*Missouri Medicine* 86(5): May 1989; 275-277

#### *Extracted Summary*

A case is reported of malignant lymphoma which appeared in eight different locations during seven years following initial diagnosis, and subsequently has been followed by 22 years of complete remission. The literature on regressions or remissions of malignant lymphomas is reviewed, and various implications of the present case are discussed.

The author reports, "Whether this patient's prolonged remission is spontaneous or in response to therapy may be argued. The only therapy was excision of four lesions followed by local radiation therapy and local radiation therapy without excision to four additional lesions. No generalized radiation therapy and no chemotherapy was given at any time. In the author's opinion, this does not constitute therapy for a systemic disease, and this was truly a spontaneous remission.

The three episodes of herpes zoster are another unusual feature of this case. While herpes zoster is a common complication of malignant lymphoma and other malignancies, suggesting poor disease resistance, three separate episodes in one patient is quite unusual. The first episode was the most severe, with additional lesions appearing on the right side after the initial eruption on the left. The two subsequent episodes were each milder than the previous attack. This may have demonstrated improving resistance. Possibly, the episodes of herpes zoster could have in some way been responsible for the patient's remission of malignant lymphoma. Acute viral or bacterial infections have been cited in the past as responsible for regression of hematologic malignancies. And even if the presence of malignant lymphoma is in some way responsible for the occurrence of herpes zoster, paradoxically, the viral infection of herpes zoster could be responsible for the remission of malignant lymphoma.

A case such as this indicates that the prognosis of malignant lymphoma may not always be so bad as generally pictured, that system treatment may not always be necessary, and that the treatment should not be so intensive as to injure the patient more than the disease itself."

### SUPPLEMENTAL REFERENCES LYMPHOMAS

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End Results in Lymphosarcoma Treated by Toxin Therapy Alone or Combined with Surgery and Radiation (87 cases) or with Concurrent Bacterial Infection (14 cases)  
NAUTS HC; FOWLER GA  
*Cancer Research Institute Monograph 6: 1968*

Spontaneous Remission in Burkitt's Lymphoma  
ZIEGLER JL  
*National Cancer Institute Monographs 44: 1976; 61-65*

Chronic Pneumococcal Infection Complicating Progressive Lymphoma  
MARKMAN M  
*Journal of the American Medical Association 249: 1983; 352-353*

### OTHER LYMPHATIC AND HEMATOPOIETIC TISSUE MALIGNANCIES

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## Multiple Myeloma

COLEY WB  
*Annals of Surgery 93: 1931; 77-88*

#### *Extracted Summary*

The primary purpose of this paper is to try to throw some light upon the problem of treatment of multiple myeloma. That multiple myeloma is always fatal, and that no treatment is known of any value even in checking the progress of the disease, has been so universally accepted that the question of treatment is scarcely referred to in the very considerable literature on the subject. According to Ewing these cases invariably have a fatal termination. But that multiple myeloma is, in most cases, highly sensitive to both the toxins of erysipelas and *Bacillus prodigiosus* and to radiation has been definitely established. Furthermore, the inhibitory action of these two agents is not only sufficient to cause great amelioration of the symptoms in most cases, but the disappearance of the tumors, in a few cases with apparently, a lasting cure of the disease.

#### SELECTED CASE REPORT

The most important case of our series is that of Dr. J. J. Thomas of Boston. Although published in the *Boston Medical and Surgical Journal* in 1901, and referred to in my publication in 1913, its real significance has never been recognized because the later history of the case has never been recorded in detail. It is a clear-cut case with the diagnosis well established by clinical and microscopical evidence. What makes it unique is the later history. At the time of Thomas' report, only a few months had elapsed since the operation and the appearance of rapidly developing metastases to the ribs. It was stated that

the patient was taking Coley's toxins, and had shown improvement. As a matter of fact, the improvement continued. The toxin treatment was kept up, twice a week, for two years, under my direction. The patient made a complete recovery, and remained well for five years when he died of acute lobar pneumonia.

So far as is known, this is the only case on record of a multiple myeloma that has recovered under any form of treatment, and the patient remained alive for five years, except the Gilmore case in which there was a difference of opinion in regard to the diagnosis.

## Multiple Myeloma: Report of a Case Showing Unusual Remission Lasting Two Years Following Severe Hepatitis

LONDON RE

*Annals of Internal Medicine* 43: 1955; 191-201

### *Extracted Summary*

This is a case report with autopsy findings of a 41-year-old woman with multiple myeloma who, for two years following severe hepatocellular damage, sustained a complete clinical and hematologic remission with concomitant normal total proteins of the blood. The relationship of the remission to the deranged metabolic state resulting from hepatitis is suggested.

The picture of multiple myeloma as presented by this patient was of a rapidly progressive disease of approximately eight months' duration in which the clinical course, the pleomorphic appearance of plasma cells in the bone marrow, and the profound changes in the blood forbode an early termination. The poor prognosis was confirmed by the failure to respond to adequate therapy with adrenocorticotrophic hormone and urethane. The onset of a serious liver involvement, with jaundice and ascites, rapidly led to a moribund state. Following a week of hepatic coma there was noted an unexpected reversal of the clinical condition, with complete recovery not only from the liver disease but also from the symptoms and signs of multiple myeloma. For two years the patient felt completely well, and monthly hematologic and total protein studies revealed no abnormalities. Even the bone marrow at the end of 21 months apparently was normal.

After slightly more than 2 years following the disappearance of all the signs and symptoms of multiple myeloma, the disease recurred. Over the next two months the patient's condition deteriorated and she died. At postmortem examination, evidence was found to conclude that the patient had (1) multiple myeloma with involvement of the ribs, sternum, vertebrae, lungs, liver, spleen, and kidneys; (2) portal cirrhosis; (3) nephrosis; (4) pulmonary fibrosis; and (5) cor pulmonale.

# Diseases Other Than Cancer

## Remission of Macroglobulinemia Coincident with Hepatitis

WOLF RE; RIEDEL LO; LEVIN WC; RITZMANN SE  
*Archives of Internal Medicine* 120: 1972; 392-395

### Extracted Summary

A patient exhibited the classical clinical and laboratory manifestations of macroglobulinemia (Waldenstrom) associated with serum hyperviscosity and high rheumatoid factor (RF) activity. Complete, spontaneous remission of the macroglobulinemia occurred coincident with recovery from a life-threatening episode of serum hepatitis. There may be an association of viral hepatitis and spontaneous remission of monoclonal gammopathies.

## Transient Remission After Viral Infection in 3 Patients with Chronic Autoimmune Thrombopenia

TERTIAN G; DERYCKE M; DELFRAISSY JF; LAURIAN Y; TCHERNIA G  
*Nouvelle Revue Francaise D'Hematologie* 28(1): 1986; 11-14

### Extracted Summary

We describe three patients with chronic autoimmune thrombocytopenia who exhibited transient remission during viral infection (varicella, hepatitis B, and influenza virus pneumopathy). In two patients, a male homosexual and a hemophiliac, thrombocytopenia was associated with AIDS-related complex. The third patient had classic idiopathic thrombocytopenic purpura. The mechanism of these rare remissions is discussed.

### SELECTED CASE REPORT

**E**xcerpt from Case Report:...In June, 1984, the patient was hospitalized on account of a severe case of varicella which was treated, because of the autoimmune deficit, with Acyclovir. The evolution of the varicella had a favorable outcome. At the same time, a rapid correction of

the thrombocytopenia took place seven days after the occurrence of the varicella, while Coombs' Test for platelets went from positive to negative...

(Note: See complete text of case report on page 355.)

## Histopathological and Immunological Studies in Spontaneous Remission of Nephrotic Syndrome After Intercurrent Measles Infection

LIN CY; HSU HC  
*Nephron* 42(2): Feb 1986; 110-115

### Extracted Summary

Two cases of childhood nephrotic syndrome (NS) were diagnosed in September, 1981 and February, 1982 respectively. The patients were first cousins. There was no other family history of renal disease. Five months after onset of nephrosis in 1 patient and 1 month after onset of nephrosis in the other both had an intercurrent measles infection and the NS rapidly went into spontaneous remission. However, relapses occurred 3 and 7 months later. At that time both

patients were started on steroid treatment and obtained remission. Unfortunately, both relapsed again 14 months later. Kidney biopsies were performed, the pathologic findings demonstrated that both were mild mesangial proliferative glomerulonephritis. The mononuclear cell subsets and lymphoproliferative responses were studied during the acute measles infection, 4 weeks later, in remission and relapse of NS. The mononuclear cell subsets and lymphoproliferative response in medium containing autologous serum with complement were decreased during the acute measles infection. Both patients had an increase of OKT8 cells and Leu-7 cells in relapse and decrease in remission. Taken together, natural measles infection caused a prolonged depression of cell-mediated immunity, T-cell subset and induced temporary remission of steroid-sensitive NS.

## Spontaneous Remission of Refractory Anemia with Excess of Blasts After Septicemia

DEHARO S; BIZET M; MONCONDUIT M; TILLY H; SARI F; PIGUET H  
*Annales de Medecine Interne* 138(8): 1987; 663-664

### *Extracted Summary*

The spontaneous evolution of an acute leukemia toward a complete remission is uncommon. Such remissions during the course of myelodysplastic syndromes are even more uncommon. We report on a case of spontaneous regression of a refractory anemia with an excess of blasts (AREB) during a severe infectious episode. *E. coli* was isolated in hemoculture. (Noetic Sciences translation)