

19. Remission of Injury Related Disorders



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Injury related disorders (ICD•9•CM* code numbers 800-999) refer to traumatic injuries to all parts of the body which occur primarily as a result of accidents or ingestion of toxic substances. Some of the injuries included in this category are bone fractures, sprains and strains of joints and muscles, intracranial injuries with or without skull fractures, internal injuries of the chest, abdomen and pelvis, open wounds, injuries to blood vessels, nerves or spinal cord, superficial wounds and contusions, poisoning by drugs,

medicinal or biological substances, toxic effects of chemicals other than drugs, medicinal or biological substances, and complications resulting from surgery.

Chapter 19 contains 7 references (2.1% of the 334 references in Part Two)—5 and 2 supplemental. Full text of 5 case reports (4.2% of the 120 cases reported in Part Two) is included.

* The International Classification of Diseases 9th Revision (ICD•9•CM) is a volume that provides an international standard for the classification of diseases. It was prepared by the Commission on Professional and Hospital Activities [Ann Arbor, Michigan: Edwards Brothers, Inc.], April 1986.

Injury Related Disorders

On the Spontaneous Cure of a Case of Pulsating Exophthalmos

DI LUCA G

Rivista Oto-Neuro-Oftalmologica (Bologna) 41(6): Nov-Dec 1966; 723-728

Extracted Summary

A case of traumatic pulsating exophthalmos is reported in a 22-year-old man who recovered spontaneously after eight years. The recovery was preceded by orbital manifestations found two years before the disappearance of exophthalmos and intracranial murmur.

Since systolic retinal artery pressure was higher at the damaged than at the sound side and since the ligation of the homolateral common carotid artery did not produce improvement, the author is of the opinion that crossed pulsating exophthalmos was present, though arteriographic examinations were not performed.

In 1949, I published a report of a case of pulsating exophthalmos that recovered spontaneously in a way not unlike this case. The former case regarded a 24-year-old woman with pulsating exophthalmos that appeared after a bad bicycle fall. Eight years later the woman suddenly lost consciousness and, after regaining it, noticed she could no longer feel the endocranial pulsation. Later the exophthalmos disappeared gradually and all evidence of collateral venous stasis regressed.

The recovery was attributed to the sudden closing of the fistula by a mobile thrombus and it was hypothesized that this was due to a valvular arteriovenous connection.

(Noetic Sciences translation)

Spontaneous Healing of a Carotid Cavernous Anastomosis

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Voprosy Neurokhirurgii 32(5): Sept-Oct 1968; 14-18

Extracted Summary

Two case reports of spontaneous healing of carotid cavernous anastomosis are presented. In one female patient the obliteration of the fistula developed right after carotid angiography. Particularities of the clinical picture attending self-healing of the anastomosis are described. Possible variations of thrombogenesis in the venous and arterial bed, along with isolated obliteration with the limits of the defective arterial wall, are discussed.

SELECTED CASE REPORT

A female patient, 40 years old, came to us on March 7, 1962. She had been ill for 4 months. She had suffered a serious craniocerebral trauma with fractured cranium during an automobile accident and was unconscious for a few hours. She began vomiting; traces of blood were present. The next day she had copious nose bleeding with minor excretion of fluid from the left auditory canal. She developed diffuse swelling of the face and ecchymosis (bruising) around both eyes. Soon after the trauma the patient felt synchroni with a pulse noise in the crown of the head radiating into the right ear. In the

beginning of the second month when the patient became ambulatory, she developed redness of the sclera and a slight bulging of the right eye. At the same time she developed a sharp headache in the temple area over the right eye. Her vision of surrounding objects was cloudy. With this significant deterioration of her condition she was referred to a neurosurgery institution.

Neurological examination: A blowing sound was heard in the area of the right orbit. Right sided exophthalmos with edema and hyperemia of the upper brow and conjunctiva was present; veins were highly dilated, wind-

ing and distinctly engorged with blood. There was no pupillary reflex in the right eye and moderate, limited movement of the bulbous oculi up and down. The bulbous oculi was immobile when looking to the right. On the bottom of the eye on the right side the retinal veins were very wide. Her visual acuity was 0.9 on the right, 1.0 on the left. Exophthalmometry revealed a right exophthalmos of 22 millimeters, a left of 12 millimeters. Intraocular pressure was 28 millimeters on the right and 24 millimeters on the left. There was a definitive hypertension in the area innervated by the second branch of the trigeminal nerve on the right side.

Carotid angiography on the right side revealed that in the siphon area of the internal carotid artery there was an accumulation of the contrast agent in the form of a continuous homogeneous shadow. The contrast agent was held up at the borders of the arterial and venous capillary beds, a little bit behind the Turkish saddle.

The day after angiography the patient developed acute inflammation in the area of the right eye. There was a further increase in the protrusion of the bulbous oculi, as well as edema of the brows and conjunctiva. She developed increasingly sharp pain in the area of the right orbit and temple. The patient noted a total disappearance of all

noise in the head. This was confirmed by our own examination. We noted a prolapse in sight in the right eye. Acute hemoptysis of the conjunctiva was steady for one month. An almost immobile bulbous oculi had sharply shifted forward, protruding out. The papilla of the optic nerve of the right eye was pale with fine borders and narrow vessels. Eventually the inflammation of the right eye regressed. Hemoptysis of the lower temple totally disappeared. The internal pressure dropped to 22 millimeters on the right side and 18 millimeters on the left. Exophthalmos of the right eye decreased to 15 millimeters and 12 millimeters on the left. The papilla of the optic nerve in the right eye turned white. Retinal vessels emptied out. In the area of the yellow spot there were numerous minute blood vessel ruptures, the blood from many of these had been partially reabsorbed. The patient was released May 29, 1962. The cessation of the pulsating sound in the head, regression of hemoptysis and protrusion of the right eye, gave us sufficient grounds to call this a spontaneous healing of an anastomosis, following angiography. Two months following the initial exam we performed another angiography, which then confirmed clinically full recovery of the patient. (Noetic Sciences translation)

Spontaneous Closure of a Traumatic Middle Meningeal Arteriovenous Fistula

SATOH T; SAKURAI M; YAMAMOTO Y; ASARI S
Neuroradiology 25(2): 1983; 105-109

Extracted Summary

A case is reported of a traumatic middle meningeal arteriovenous fistula, which was formed on the contralateral side to the head injury without a skull fracture and was no longer demonstrable on the repeated angiogram after 35 days without any surgical intervention. Possible mechanisms of fistula formation and its spontaneous closure are discussed.

SELECTED CASE REPORT

A 75-year-old woman who fell and struck her head after a syncopal attack visited Matsuyama Shimin Hospital complaining of nausea, vomiting and severe left temporalgia on 22 July 1980. On admission, she was alert and blood pressure was 104/62 mmHg, pulse rate 86/minute and respiration rate 24/minute. There was a contused wound in the right temporal region. Pupils were equal in size and were reactive to light. There was no motor weakness or sensory disturbance in the limbs. No bruit was heard over the head. The neck was supple with full flexion. No abnormalities were found in the laboratory data. Lumbar puncture disclosed an opening pressure of 110 mm H₂O and slightly bloody cerebrospinal fluid. Plain skull roentgenograms showed a linear right temporal fracture, but there was no evidence of a

fracture on the left side of the skull. On the plain computed tomograms, a subarachnoid hematoma was demonstrated in the left Sylvian fissure. The left carotid angiography performed 7 days after the head injury revealed the middle meningeal arteriovenous fistula at the base of the left middle fossa and demonstrated the following interesting venous draining system. Distal to the fistula, draining veins ascended along the sphenoid ridge to the superior sagittal sinus showing the so-called "railway configuration." Another vein running along the greater wing of the sphenoid passed through the foramen rotundum to the pterygoid venous plexus. Proximally, a dilated vein mainly ran out the foramen ovale into the pterygoid venous plexus, the palatine venous plexus and then the internal jugular vein. It was drained partially

into the posterior portion of the cavernous sinus, the lateral half of the basilar plexus, the inferior petrosal sinus and from there into the internal jugular vein.

The patient was treated only conservatively without any surgical intervention. Thirty-four days after the head

injury, her condition had improved remarkably. The left carotid angiogram repeated on the next day disclosed complete disappearance of the fistula. Irregularity of the wall of the anterior branch of the middle meningeal artery corresponded to the position of the fistula.

Spontaneous Healing of Extradural Hematomas *Report of Four Cases*

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Neurosurgery 14(6): June 1984; 724-727

Extracted Summary

Our recent experience with four cases of acute extradural hematoma found in neurologically intact or mildly symptomatic patients is reported. These patients did not require operation; complete resolution of the hematoma was demonstrated within 1 month in three cases and within 4 months in the last case. Although far from being codified, nonsurgical treatment of extradural hematomas in some selected patients seems to be feasible. The computed tomographic findings (size and location of the hematoma, midline shift) in these cases are discussed.

SELECTED CASE REPORTS

Case 1: A 71-year-old man fell at home and injured his head. When he was seen in the emergency unit, he was partially conscious with retrograde amnesia. Because of persisting obtundation, he presented for our evaluation 2 days after the trauma. Examination disclosed mildly impaired mentation, but no definite neurological deficit. A skull x-ray film was normal. A CT scan showed a right parietal extradural hematoma of moderate size, with diffuse brain atrophy and no shift of midline structures. The patient's confusion lasted for some days, and a repeat CT scan on Day 5 after admission showed an unchanged hematoma. A CT scan on Day 10 revealed initial resorption of the clot, but the patient refused further evaluation and went home. A CT scan 4 months later showed disappearance of the hematoma. The patient has remained asymptomatic since leaving the hospital.

Case 2: This 22-year-old man was involved in a motorcycle accident and suffered a head injury with immediate loss of consciousness. When admitted a few hours later, he was mildly obtunded and showed brisk, purposeful movements in all limbs. No focal deficits were present. X-ray examination of the skull revealed a line fracture of the left frontal bone. A CT scan showed a thin, biconvex extradural collection of blood in the right temporoparietal area. There was no shift of midline structures. Consciousness was fully regained during the ensuing 24 hours. A repeat CT scan on Day 7 was unmodified, whereas a scan on Day 22 showed complete resolution of the hematoma. The patient was discharged and is now being followed as an outpatient.

Spontaneous Healing of a Carotid Cavernous Fistula Caused by a Gunshot

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Neurochirurgia 28: 1985; 22-24

Extracted Summary

We report the case of a 22-year-old male with a carotid cavernous fistula after gunshot injury. A few weeks later the fistula turned into an intracavernous aneurysm of the internal carotid artery. After four years the aneurysm was no longer demonstrable; the ipsilateral internal carotid artery was spontaneously obliterated. According to the literature a carotid cavernous fistula is found in 0.4% to 1.7% of all cases with head trauma. Its spontaneous cure is a rare occurrence.

SELECTED CASE REPORT

On August 1, 1977 this 22-year-old patient shot himself in the mouth with a shotgun with suicidal intention. On admission he was unconscious, showed spontaneous movements of the right side, hemiparesis on the left side, wide and stiff right pupil, medium wide left pupil reacting to light, and hemorrhage of the nasal region and pharynx which spontaneously stopped. X-ray examination on the right side using a high parietal projectile revealed splinters over the base of skull on the right side. There was a hematoma in the far right thalamic region, caving into the right side ventricle. He was treated with artificial respiration, dexamethasone, and osmotic diuresis.

On August 7, 1977 (7th day) he was responsive and had developed a pulsating exophthalmos on the right side. On August 11, 1977 (11th day) carotid angiography of the right side revealed a carotid cavernous fistula on the right side. There was strong epistaxis during the night. The hemorrhage was stopped by means of tamponage of the nose. On August 16, 1977 (16th day) he made his first attempts at walking. Carotid angiography on the left side showed compression of the right internal carotid artery and a confirmation of the carotid cavernous fistula on the right side. He ran a high temperature during the next 24 hours.

In September, 1977 there was complete regression of the pulsating exophthalmos. On September 28, 1977 (59th day) a roundish mediobasal formation was visible in the right temporal lobe, which showed a concentration

of opaque substance at the edges. It was interpreted as a pathological vascular structure.

On October 4, 1977 (65th day) carotid angiography on the right side (direct puncture of the internal carotid artery) showed an intracavernous carotid aneurysm on the right side (26 x 23 x 19 millimeters) with the end part of the right internal carotid artery constricted. There was retrograde filling of the right external carotid artery and slight filling of the right midcerebral artery.

On October 11, 1977 (72nd day) he was transferred to rehabilitation. The patient was completely oriented, showed spastic hemiparesis of the left side and ophthalmoplegia on the right side. His visual acuity was 0.5 in the right eye, and 1.0 in the left.

A carotid angiography on November 3, 1977 (95th day) and a CCT on April 3, 1978 (246th day) still showed the aneurysm of the internal carotid artery. It was decided to wait and watch the further course.

The patient was reexamined in August 1981 (4 years later). The patient showed subjective well-being, and had completed commercial education. His neurological symptomatology was unchanged. CCT with bolus-like KM injection and picture sequence showed no pathological increase of density in the region of the formerly proven aneurysm of the internal carotid artery. Doppler-sonography revealed obliteration of the internal carotid artery 2 centimeters above the bifurcation.

(Noetic Sciences translation)

SUPPLEMENTAL REFERENCES INJURY RELATED DISORDERS

Spontaneous Disappearance Of Middle Fossa
Arachnoid Cyst After Head Injury
YAMANOUCHI Y; SOMEDA K; OKA N
Childs Nervous System 2(1): 1986; 40-43

Post-Traumatic Pancreatic Pseudocyst with
Spontaneous Regression
GAY C; MACABEO V; CHAMPIONNAT C; MIALON G
Pediatre 42(2): 1987; 99-101