TRIGEMINAL NEURALGIA AND ARTERIOVENOUS ANEURYSM OF THE CEREBELLOPONTINE ANGLE

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Trigeminal neuralgia has been reported as occurring very rarely in children. Grant, however, has successfully treated by resection a 7-year-old boy, and our patient, now 32 years old, has a history of having typical trigeminal neuralgia that dates back to her twelfth year.

REPORT OF CASE

F.S.W., a 30-year-old woman, was admitted to the neurosurgical service of the Lakewood City Hospital in May 1953, with a history of right trigeminal neuralgia that had developed at the age of 12 and continued until 1951, at which time the symptomatology changed to a burning, searing discomfort in the same area, which remained as long as 5 minutes per paroxysm. That year, through a subtemporal craniectomy, rhizotomy of the right 5th sensory root was performed elsewhere. She continued to have ghost pains involving the entire side of the face, and headaches, which had always been present intermittently, became more frequent and severe.

Operation. Because of persistent facial discomfort, development of deafness in the right ear, ataxia and atonia of the right arm and leg, and nystagmus, a right suboccipital craniectomy was performed by one of us (W.M.H.), revealing a collection of large, tortuous, aberrant arterial vessels. These extended beneath the cerebellar hemisphere on the right side adjacent to the medulla and into the cerebellopontine angle. No attempt was made to resect the lesion because of its nature and location.

Course. The patient’s symptomatology was not appreciably altered by operation; she was discharged from the hospital essentially unchanged and was lost to follow-up.

She was subsequently admitted to Cleveland Clinic Hospital on Jan. 21, 1955, 10 days after the acute onset of a sudden, loud noise in the head, “jumping and pulling” of the muscles of the neck, staggering gait, vomiting, headache, and stiff neck.

Examination. The patient was extremely apprehensive, and lumbar puncture at the time revealed xanthochromic cerebrospinal fluid. The blood pressure was 110 systolic and 70 diastolic; pulse rate and temperature were normal. The pupils were constricted and reacted only slightly to light. There was a fine nystagmus on lateral and vertical gaze. Funduscopic examination revealed early bilateral papilledema. There was no evidence of a vascular malformation in the retinal structures. Hearing was reduced in the right ear, and the Weber test indicated nerve deafness. Analgesia in the distribution of the right 5th nerve was complete, with paralysis of the muscles of mastication. The remaining cranial nerves were normal. The deep tendon reflexes of the right arm were notably diminished, but the patellar and Achilles reflexes were active and equal bilaterally. Unsteadiness in the Romberg position was pronounced and the gait was wide-based. The finger-to-nose and heel-to-knee tests were poorly performed on the right side. The Babinski sign was negative.

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Significant laboratory findings were xanthochromic cerebrospinal fluid at 220 mm. of cerebrospinal fluid pressure, containing 47 mg. per 100 ml. of protein and 3 cells. A right vertebral arteriogram revealed a large arteriovenous malformation in the right posterior fossa extending from the site of the suboccipital craniectomy to the level of the incisura and slightly above the tentorium cerebelli (Fig. 1). Carotid arteriograms filled only the upper extension of the malformation to a slight degree.

Course. No further treatment was undertaken. She remained in the hospital approximately 1 month, during which her neurological deficit was essentially unchanged. She became completely antagonistic and negativistic before discharge; she refused to eat and finally left against advice.

COMMENT

The occurrence of trigeminal neuralgia with lesions of the posterior fossa such as: cholesteatomas of the cerebellopontine angle, acoustic neurinoma, meningioma and thromboses of pontine vessels and the posterior inferior cerebellar artery, is well known. Olivecrona also mentioned a case of arteriovenous malformation in which typical trigeminal neuralgia was the principal symptom. Dandy stated that he had found 18 tumors in 250 cases of trigeminal neuralgia explored by the cerebellar route. In addition, he believed that free arterial loops elevating the nerve root, or venous branches crossing the nerve and sometimes dividing it, could account for the pain.

Peet and Schneider found only 4 tumors in 689 cases of trigeminal neuralgia approached by the subtemporal route. One of those tumors was a true aneurysm.
Hamby discussed aneurysm of branches of the internal carotid system as a cause of tic, and reviewed also the experience of several other authors.

Wyburn-Mason, in a discussion of arteriovenous malformations of the brain, referred to the severe psychoneurotic and psychotic changes that sometimes are produced by these lesions. The question of whether the malformation was conclusively the basis of the pronounced personality changes demonstrated by our patient remains unanswered. She had admitted to having tried to “do away” with her children 2 years previously. Letters from her referring physicians emphasized the existence of a behavior problem.

Pneumoencephalography was not performed. However, on the lateral carotid arteriogram, stretching of the pericallosal vessels was present. The arteriographic findings, papilledema and increased intracranial pressure are indicative of an associated hydrocephalus.

**SUMMARY**

An unusual case is presented in which there occurred trigeminal neuralgia with onset at age 12 years, subsequently found to be associated with and probably resulting from a large arteriovenous malformation of the right cerebellopontine angle, with hydrocephalus, a severely disordered personality, and cerebellar signs.

**REFERENCES**