CASE REPORTS AND TECHNICAL NOTES

A METASTATIC LESION SIMULATING AN INTRACRANIAL ANEURYSM

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Considerable attention has been focused, recently, on the diagnosis and treatment of intracranial aneurysms. The question of the indications for arteriography is a much debated one and it is the opinion of some authors\(^1\) that: “Arteriography is helpful in making the diagnosis, but is not necessary. It is possible to localize intracranial sacular aneurysms accurately by clinical means alone when they occur in the cavernous portion of the internal carotid artery, giving rise essentially to palsy of the third nerve with evidence of involvement of the first or first and second divisions of the fifth nerve and frequently the fourth, sixth, and motor divisions of the fifth cranial nerve, as well.” Others\(^2\) have equally emphasized the case with which aneurysms within the cavernous sinus may be diagnosed and have repeatedly stressed the disadvantages of arteriography. The following case, though pathologically unique, offers rather conclusive evidence that one may be misled by clinical signs and symptoms no matter how typical of aneurysm they may seem. It is offered in support of the opinion\(^2\) that: “Cerebral angiography is indicated especially whenever surgical treatment is under consideration and a precise diagnosis is required for such therapy.”

CASE REPORT

A 54-year-old female was admitted to the Hospital Sept. 13, 1947, complaining chiefly of intermittent pain in the left maxillary region and behind the left eye. The onset of this pain was abrupt and occurred about Sept. 10, 1947. She had had several teeth extracted without relief. There had been complete amenorrhea for 6 months. The history was otherwise non-contributory.

Examination revealed ptosis of the left upper lid, but no inequality of the pupils. There was an incomplete left 6th nerve paralysis. Hypoalgesia was evident over the distribution of the 1st division of the left 5th nerve. Other cranial nerves were normal. Deep and superficial reflexes were normal. Sensation to pain, touch, vibration and position was normal throughout the extremities and trunk. Routine cerebellar tests were normal. No contributory signs were found on otolaryngological examination.

Lumbar puncture, September 24: Intraspinal pressure, 100 mm. of water; cytological, chemical and serological examination of spinal fluid revealed nothing abnormal. Several later spinal punctures were also normal. Roentgenograms of the skull on September 24 were normal.

On October 13 a mucopurulent postnasal discharge developed and she was seen again at this time by an otolaryngological consultant. X-rays of the paranasal sinuses showed no significant abnormality and it was felt that there was no relevant sinus pathology.

Pain behind the left eye and in the left frontal region continued to be severe. The left ophthalmoplegia progressed and on October 1 there was complete paralysis of all external ocular muscles on the left. The left pupil was dilated and fixed to light. Ptosis of the left lid was complete (Fig. 1). There was no impairment of visual fields or acuity. Fundi were normal. Hypoalgesia had now progressed to involve both the 1st and 2nd divisions of the left 5th cranial nerve. The remainder of the neurological examination was negative.

Presumptive Diagnosis: Aneurysm of left internal carotid artery within the cavernous sinus. On a basis of the literature quoted above and the findings and course of this case, it was felt that arteriography was not indicated.

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Carotid compression was started. This did not relieve her pain and after 5 minutes of compression she complained of numbness in the right hand.

Operations. On October 4 the left common carotid artery was ligated. No untoward symptoms developed. On October 16 it was decided that sufficient time had elapsed for the establishment of collateral circulation. Findings at this time were similar to those of October 1 and remained restricted to those due to involvement of the left 3rd, 4th, 5th and 6th cranial nerves. A left transfrontal approach was made and the anterior fossa and parasellar region were explored. No abnormality was found. A silver clip was placed on the left internal carotid artery just proximal to the posterior communicating artery. Immediately following this procedure the left internal carotid artery was ligated in the neck.

Course. A right hemiparesis developed which was mild and transient. Postoperative course was otherwise uneventful. On October 29 a right ophthalmoplegia began to develop. Following this her course was gradually downward, and she expired on Nov. 2, 1947.

Fig. 1. Photographs showing complete ophthalmoplegia and area of hypoalgesia on the left.

Autopsy revealed an infiltrating adenocarcinoma of the uterus which had metastasized to the nasopharynx, presumably by way of the paravertebral veins. There were no other metastases. The lesion in the nasopharynx had extended through the supra-orbital fissure and body of the sphenoid bone to completely fill both cavernous sinuses. There was one small intradural nubbin of neoplastic material in the left middle fossa, but the anterior fossae and parasellar region were completely free of intradural extension. There was marked compression of the contents of both cavernous sinuses and some microscopic invasion of the left gasserian ganglion. The brain appeared normal. It seemed probable that death was due to ischemia following compression of the right internal carotid artery, the left having already been ligated.

Comment. Review of postoperative x-rays taken on Oct. 28, 1947 did show erosion of the body of the sphenoid bone but examination of preoperative x-rays of the skull taken on Sept. 24, 1947 and the paranasal sinuses taken on Oct. 13, 1947 failed to show any erosion even in retrospect.

SUMMARY

The case herein presented fulfilled all of the criteria for the clinical diagnosis of unruptured aneurysm of the internal carotid artery within the cavernous sinus. The fallacy of making this diagnosis without arteriography is illustrated.