TRIGEMINAL NEURALGIA DUE TO CONTRALATERAL TUMORS OF THE POSTERIOR CRANIAL FOSSA

REPORT OF 2 CASES*

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INTRODUCTION

Major trigeminal neuralgia is so typical in its manifestations that confusion in diagnosis rarely arises. As experience increases, however, more cases are encountered that require careful reconsideration of our conception of this disease. In several reported cases, pain indistinguishable from major trigeminal neuralgia has been found to be due to lesions compressing the ipsilateral trigeminal root. I have found only 1 report in the literature of trigeminal pain caused by a contralateral neoplasm. Two such cases recently seen furnish the clinical basis for this report.

CASE REPORTS

Case 1. Pronounced signs of posterior fossa lesion without papilledema. Clinical impression of pontine glioma or aneurysm of basilar artery. Exploration of right cerebellopontine angle, on side of trigeminal pain, revealing evidence considered characteristic of a pontine tumor, with severe stretching of trigeminal root. Death following section of trigeminal root. Autopsy: Meningioma under left side of pons and cerebellum.

P.J., a 54-year-old woman, was examined on April 14, 1945 for Dr. I. I. Sidenberg of Niagara Falls, New York.

In February 1944, left radical mastoidectomy had been done for relief of chronic otitis media. Five days after operation there suddenly developed left peripheral facial paresis, dysphagia and dysarthria. These gradually improved. During the following year numerous neurological difficulties developed. Vision became impaired, with diplopia in either direction of gaze. She had head pain, which became progressively severe in the right eye, radiating over the vertex to the right occipital region. The pain was severe, paroxysmal, lasted for about 30 seconds and then disappeared. It was initiated by change in position of the head. No facial paresthesias nor numbness were noticed. Dysarthria persisted, with frequent slurring of speech. Gagging, occasional regurgitation of fluid through the nose and hiccoughing were frequent. True external vertigo and ataxia of gait had persisted since the initial attack. Nausea and emesis developed in recent months. Considerable pain was noted about the left shoulder joint.

Examination. The patient was an acutely ill woman, who walked unsteadily and fell in the Romberg position. She had frequent paroxysms of pain striking over the right eye, resembling the picture presented by patients having trigeminal neuralgia of the ophthalmic division. The neck was flaccid. The right pupil was larger than the left, both reacting. The optic discs appeared normal and the visual fields were not restricted. Vision was depressed. Extra-ocular movements were normal without nystagmus, but diplopia was experienced on deviation of the eyes to either side. The left corneal reflex was diminished. Mild left peripheral facial palsy was noted. Air conduction was absent in the left ear but bone conduction was equal on the two sides. The left side of the palate was paretic. Elevation of the left shoulder was weak. The left side of the tongue was paretic and atrophied. Movements of the left arm were slowed and produced pain in the left shoulder. No ataxia of the arm was noted. Tendon reflexes in the left arm were increased, while those of the legs were normal, without Hoffmann

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or Babinski responses. Senses of vibration and position were not impaired. The remainder of the neurological examination was normal.

On April 27, 1945, an encephalogram failed to fill the ventricles. The subarachnoid markings showed no lateral distortion. The cisterna magna appeared normal. The cisterna pontis was not visualized.

Discussion. The patient presented evidence of bilateral involvement of the brain stem developing suddenly 5 days after a left mastoidectomy and progressing subsequently to involve other cranial nerves. The precipitous onset suggested a lesion involving the blood supply of the pons. The progressive involvement of pontine structures suggested progressive obliteration of pontine branches of the basilar artery. The progression of signs and particularly the severe right trigeminal pain that was initiated by change of position of the head indicated the possibility of an aneurysm of the basilar artery. Since a pontine glioma could not be eliminated clinically and since the right trigeminal pain had become disabling, exploration of the right cerebellopontine angle was considered necessary for diagnosis and for relief of pain.

Operation. On May 1, 1945, with the patient under intravenous sodium pentothal anesthesia and in the sitting position, respiration ceased and the blood pressure fell to an unrecordable level. On temporary change of position and forced oxygen administration respiration were resumed and blood pressure improved. The patient then was replaced in the sitting position and the operation proceeded without difficulty.

Through a right retromastoid vertical incision and craniectomy the cerebellopontine angle was explored. Dural tension was not increased. The 9th, 10th and 11th nerves and then the 8th were identified. The vertebral and basilar arteries were not seen. The pons and medulla appeared expanded. As the cerebellopontine angle was approached, a large bilobed, pulsating, blue mass was seen and at first appeared to be an aneurysm. More careful inspection proved this to be the petrosal vein dilated to 5 mm. in diameter and constricted into 2 globules by a band of arachnoid. The vein was coagulated and severed. The 5th nerve root ran directly downward, instead of upward and forward, and its lower end was tightly compressed between the pons and the incisura of the tentorium. The root was severed. The pons appeared enlarged, tightly filling the incisura. To relieve compression the tentorium was incised laterally for 3 cm. The wound was closed.

Postoperative Course. The patient did not respond and had considerable respiratory difficulty. She expired suddenly 48 hours after operation.

Autopsy Findings. The cerebrum was markedly swollen, with flattened convolutions. The brain stem was compressed, with foraminal herniation of the cerebellar tonsils. In the left cerebellopontine angle was a $6 \times 4 \times 0.5$ cm. meningioma displacing the cerebellum and brain stem backward and to the right. It arose from the dura and invaded bone in the medial posterior aspect of the petrous portion of the temporal bone and the adjacent left lateral part of the basilar portion of the occipital bone. It invaded the left internal acoustic meatus and the jugular foramen, completely destroying the bone in these areas.

Comment. This left posterior fossa meningioma produced bilateral cranial nerve signs and symptoms suggesting a pontine glioma or an aneurysm of the basilar artery. It caused contralateral trigeminal pain without sensory loss, resembling trigeminal neuralgia. At operation, displacement of the brain stem was mistaken for the appearance of a pontine glioma, so the possibility of a contralateral mass was not recognized.

Case 2. Typical left-sided trigeminal neuralgia of all divisions. Exposure for trigeminal tractotomy revealing a contralateral posterior fossa meningioma. Cure following removal.

D.M., a 69-year-old woman, was examined on Nov. 8, 1945 for Dr. W. C. Smith of Erie, Pennsylvania.

For 18 months this patient had suffered from pain in the left side of the face. She so feared attacks of the pain initiated by talking, that the history was obtained from positive and negative responses to direct questioning. The pain was paroxysmal and instantaneous, involving the entire face. Talking, eating and touching the face initiated the paroxysms.