TIC DOULOUREUX AND ITS RELATIONSHIP TO TUMORS OF THE POSTERIOR FOSSA
ANALYSIS OF TWENTY-FOUR CASES

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Since the introduction by Dandy\(^1\) of the cerebellar approach for section of the sensory root of the trigeminal nerve, the advantage of this route in the disclosure of organic lesions that might account for the production of tic douloureux has been pointed out several times.\(^2,3\) Dandy\(^4\) found that 60 per cent of his patients operated upon by the cerebellar approach showed definite abnormalities such as tumors, aneurysms, angiomas, aberrant vessels on the nerve, congenital anomalies, and adhesions between the sensory root and brain stem. For detailed figures regarding these abnormalities the reader is referred to his paper.

It is the purpose of this communication to analyze only that group of cases in which tumors were found incidentally upon sectioning the sensory root at the pons for tic douloureux.

From 1925 to 1945 there were 757 cases diagnosed as tic douloureux at the Johns Hopkins Hospital, and in 473 of these, operation was performed by the cerebellar approach. In the whole series 58 per cent were females and 42 per cent were males. The ages ranged from 30 to 70 years. In 24 (5.1 per cent) tumor was found in the neighborhood of the 5th nerve. Three types of tumors were encountered: neurinomas, epidermoid cysts and meningiomas.

GROUP I. NEURINOMAS

Eleven neurinomas (46 per cent) were found in this series. These presumably arose from the 8th nerve. Males and females were about equally affected. Eight of the 11 patients were between the ages of 50 and 70. The chief complaint on admission in all cases was intermittent, lancinating pain in the distribution of one or more branches of the trigeminal nerve. The 3rd branch alone was not affected in any case, the 1st branch in 1, the 2nd branch was involved in 3, the 1st and 2nd in 1, the 2nd and 3rd in 6, and all branches in 1. There was no significant predominance of sides, 6 occurring on the right and 5 on the left. The pain was typical of tic douloureux with definite trigger zones and was precipitated by swallowing, chewing, washing of the face, etc. Ten patients showed associated loss of hearing on the same side and in the remaining case there was no impairment: the hearing deficiency was not found significant in this age group. Loss of hearing preceded pain in 8 cases by an average of 7.5 years. In 1 case tic was present 11 years before impairment of hearing and in another both the 5th and 8th nerves were affected simultaneously. Tinnitus on the affected side was present in
only 5 cases and bilateral tinnitus in 1. In 1 case the tinnitus, which had been present for 7 years, abruptly disappeared with the onset of pain. Dizziness was present in 1 case. Dysphagia occurred only once in this series, this being in the one case that did not show any impairment of hearing. There was a history of gustatory fits in the affected side in 1 case. In 10 cases the neurologic examination corroborated the subjective impairment of hearing, this being moderate for low tones and quite pronounced for high tones. Vestibular tests were performed in 6 of the 10 patients: 5 had loss of vestibular response on the same side and 1 on both sides. Mild sensory changes in the affected side of the face were found in 4. In 1 case there was bilateral papilledema with unilateral deafness but there were no sensory changes.

The diagnosis of tumor of the cerebellopontine angle was suspected in 6 cases and accordingly X-rays of the skull were taken. Erosion of the porus acusticus was definite in 3.

The unilateral cerebellar approach as originally described by Dandy was used in each case. The tumor was totally removed in all cases. It was usually small, the average weight being 6.28 gm., the largest 15.6 gm. and the smallest 0.1 gm. The gross and microscopic appearance of the tumors was that of typical neurinoma. All these tumors, with the possible exception of one, seemed to arise from the porus acusticus and pressed on the 5th nerve in varying degrees. The 5th nerve was sectioned in all but 2 and in these 2 there was complete relief of pain after the operation. There was 1 fatality in the series. Death occurred a few hours after the operation, and autopsy revealed edema of the medulla and pons with small hemorrhages. The rest of the patients showed complete relief of symptoms after operation.

Comment. Eleven cases of neurinoma producing typical tic douloureux have been summarized. The chief complaint on admission in all these cases was that of pain in one side of the face. In 10 cases hearing was impaired on the same side of the lesion, which in an age group of from 50 to 70 years is apt to be minimized. Mild sensory changes were found in 4, and in 1 there was bilateral papilledema with unilateral deafness but without sensory changes. X-rays of the skull were taken in 6, only 3 showing definite erosion of the porus acusticus. Most of these cases could easily have been diagnosed as "idiopathic" tic douloureux and the nature of the underlying condition could have been missed had it not been for the route of approach selected. A vivid example is Case 4, summarized below, in which section of the 5th nerve was performed by the subtemporal route in another clinic, with recurrence of pain 2 years later. At operation through the cerebellar approach a neurinoma was found. It can be safely concluded that all cases of tic douloureux showing significant impairment of hearing on the same side should be considered potentially as neurinomas of the cerebellopontine angle possibly arising from the porus acusticus.

Case 1. #13400. Mr. W. H., a white male aged 67, was admitted July 27, 1927 with the chief complaint of pain for 2 years in the right side of the face, starting in the right temple with radiation to the lower jaw. The pain was lancinating and intermittent with trigger zones in