THE NEUROSURGICAL ASPECTS OF SEVENTH NERVE NEURILEMMOMA*

LEONARD T. FURLOW, M.D.

Neurosurgical Department, Washington University Medical School, and the Barnes Hospital, St. Louis, Missouri

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In 1935, Altmann,¹ in a paper on neurogenic tumors of the descending part of the facial nerve, described the characteristic symptoms of this condition. He reviewed the cases reported by Schmid¹⁵ and Schroeder,¹⁶ and included as one of the cases in his own paper a patient reported previously by Grossmann and Leidler.² It is not necessary to go into the details of the symptomatology in each of the 4 cases presented by Altmann, or of the 2 cases reported previously, but it is interesting to outline the symptom complex that Altmann attributed to these tumors as they developed within the facial canal. The first symptom in all cases was a facial paralysis. In some instances it developed gradually, progressing in a step-like fashion from lower to upper branches of the nerve. In other cases it appeared suddenly, as does Bell’s palsy. In general, this paralysis, once developed, was persistent and unchanged, but occasionally a partial remission was seen.

In the cases in which taste was tested there was much variation. In 1 it was totally absent, in 2 it was diminished and in 1 it was undisturbed. Obviously this depended upon the site of origin of the tumor, for if the lesion began distal to the branching off of the chorda tympani, taste could be retained. If it began proximal to this point, taste was lost, and if the chorda tympani was only involved by pressure as the tumor grew, taste would be progressively altered.

A careful examination of the ear usually disclosed a mass of tumor in the external auditory canal. It seemed to arise from the posterior wall, and would obstruct the canal, either partially or completely. Although in the early stages the mass was covered by intact epithelium, later there was loss of epithelium, and ulceration, because of retained matter within the canal. In some cases the drum was intact. Eventually, however, as the middle ear was filled by tumor, the mass might erode through the drum. This almost always led to secondary infection with chronic otitis media. Indeed, in most of the cases in the literature, it was this sequence of events that led to the eventual diagnosis. Because of the persistent infection, mastoidectomy was done and the tumor was discovered during the surgical procedure.

In the beginning, hearing was normal. Later, it would be lost, either because the tumor obstructed the canal, filled the middle ear, or contributed to the persistent secondary infection. Exactly the same situation applied

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as regards reaction to caloric stimulation. Altmann concluded that these tumors could cause intracranial complications by either the extension of tumor into the cranial cavity, or the development of meningitis or brain abscess, secondary to the induced infection. He felt that the only satisfactory treatment was surgery, for in 1 of his cases irradiation was useless, and this was to be expected, for neurinomas as a class had not responded to radiotherapy. He also determined that the facial paralysis would remain unless the lesion could be removed at an early stage before total atrophy of the facial muscles had developed.

In 1953 I saw for the first time a patient having such a lesion.

Case 1. P.R., a white male aged 48, a resident of Indiana, was seen on May 18, 1953. In 1940 a peripheral facial paralysis began to develop which came on gradually and first involved the superior portion of the face, with decreased to finally absent blinking, and smoothing out of the forehead. Eventually the paralysis became complete. In 1942 he was seen at the Mayo Clinic, but nothing of significance was found except for the right 7th nerve palsy. The Department of Otolaryngology reported “negative” studies, and there was no involvement of the 5th nerve. The presumptive etiology was pressure neuritis, caused by the patient’s long established habit of sleeping with the right shoulder wedged into the right side of his face. A change of sleeping posture was recommended. He carried on his work as an automobile salesman without difficulty except for gradual loss of hearing in the right ear, which began in 1950 and was complete by 1952.

In December 1952, while applying warm compresses to the exposed right eye, he was conscious of “whirling spots of bright colors,” and that night during sleep he had a generalized convulsion. When he regained consciousness he was in an oxygen tent in a local hospital. Since that time, in spite of anticonvulsant medication, he had had five other convulsions, and during the last attack he dislocated his left shoulder. In January 1953, while talking to a client, he suddenly got up without any reason and left the client. The next thing he remembered was being in his car driving home. He had an uncontrollable desire to void, was incontinent of urine, and arrived home with wet clothes but no other reasonable excuse for being there. His wife also volunteered that for several months he had been moody, irritable, careless in business and in dress, and uninterested in his home.

Examination. He had no pressure signs and no involvement of the 5th nerve. There was an obviously long-standing paralysis of the 7th nerve on the right with eversion of the lower lid and pronounced sagging of the right face (Fig. 1). There were no significant motor, sensory or reflex changes, and there was no evidence of cerebellar dysfunction. He had several small café-au-lait spots on his back but no palpable neuromata.

Audiometer tests showed slight remnants of hearing in the right ear, and normal hearing in the left. There was no reaction to caloric stimulation on the right except very slight vertigo after 4 minutes of 68°F. water. His visual fields were normal.

The electroencephalogram was interpreted as mixed fast and slow dysrhythmia, nonfocal, consistent with convulsive disorder. Radioactive isotope localization was said to indicate a right cerebellopontine angle tumor. However, roentgenograms of the skull showed a slight displacement of the pineal to the left, and a thin, curvilinear calcification extending up into the middle fossa, suggesting a large globular mass in