CASE REPORTS AND TECHNICAL NOTES

ACOUSTIC NEUROMAS IN CHILDREN
REPORT OF 2 CASES

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Tumors affecting the acoustic (eighth cranial) nerve occur most frequently in the fourth, fifth and sixth decades of life, according to statistics reported in the majority of published series.2,4,9 Recently, we operated on 2 children, 11 and 14 years of age, who had typical acoustic neurofibromas (neurilemmomas). The uncommon occurrence of typical tumors of the eighth nerve in the cerebellopontine angle of children less than 15 years old has prompted us to report these cases.

The available pertinent literature lends emphasis to the fact that these tumors are rare in children. In his monograph Tumors of the Nervus Acusticus, Cushing2 in 1917 quoted Henschel as reporting on a patient 19 years old with a tumor of the eighth nerve. Cushing,3 in 1927, again reported on a patient between the ages of 10 and 15 years. The exact age was not given. Zülch10 reviewed 121 histologically verified brain tumors in a series of patients 1 to 20 years old, in 1938. There was 1 case of a neurofibroma of the cerebellopontine angle in this series. Of the 100 tumors in children reported by Bailey and his collaborators1 in 1939, 1 case concerned a neurinoma (neurofibroma) of the twelfth cranial nerve in a patient 12 years old. There was no instance of such a tumor affecting the eighth nerve. Of the 130 patients with acoustic tumors reviewed by Nielsen9 in 1942, the youngest was 18 years old. The youngest patient in the series (154) reviewed by Gonzalez Revilla5 in 1947 was 19 years old. Keith, Craig and Kernohan4 reported 477 brain tumors in children less than 15 years old in 1949. There was no instance of a neurofibroma of the acoustic nerve in this report. Love7 in 1950 reported on an intrapetrous neurofibroma that had originated in the eighth cranial nerve in a 16-year-old female. This patient’s symptoms were of 8 years’ duration, and presumably the tumor had been present when she was 8 years old. Edwards and Paterson1 listed 2 patients between 10 and 20 years of age, but exact ages were not stated. An unusual case in which a unilateral tumor of the eighth nerve afflicted an 8½-year-old child was reported by Mark and Sweet8 in 1952. This lesion was an acoustic neurofibroma. The patient was 6 years old at the time of onset of symptoms. Among the patients with approximately 410 verified unilateral acoustic neurofibromas operated on at the Mayo Clinic between January, 1915 and July, 1953, only 2 have been less than 15 years old.

The cardinal signs and symptoms of tumors of the acoustic nerve in the cerebellopontine angle are so well known that it seems unnecessary to repeat them here.

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However, it occurred to us that presentation of two cases of these tumors in children would be of interest and would show the close similarity between the symptoms as they appear in young children and the symptoms as they appear in adult persons.

**REPORT OF CASES**

*Case 1.*—A white boy 11 years old was examined at the Mayo Clinic because of bifrontal headaches that had begun 8 months earlier. The headaches usually had been present when the patient awakened in the morning, and by noon had subsided. The headaches had been constantly present throughout the patient’s illness, and were aggravated by coughing, sneezing and straining. Considerable relief was obtained by lying down. Two episodes of nausea and vomiting had been associated with the headache.

Concurrent with the headaches, the patient became aware of an intermittent buzzing in his left ear associated with a gradual loss of hearing. Periodic attacks of “dizziness,” during which the patient would stagger and bump into objects, also were experienced.

One month before examination the patient’s left arm tired easily and had become increasingly awkward.

*Neurologic Examination.* Positive findings were sensory impairment on the left side of the face with decreased corneal reflex, slight weakness of the left facial muscles and minimal inco-ordination of the upper extremity and the presence of Babinski’s reflex on the left. Movements of eyes disclosed horizontal nystagmus, more marked to the left, with paresis of conjugate gaze to the left. Subacute edema of the ocular fundi (right 2 D., left 3 D.) was noted. Caloric stimulation was difficult to evaluate because of the marked spontaneous nystagmus.

A diagnosis of tumor of the left cerebellopontine angle was made.

*Operation.* Left suboccipital craniectomy was performed. After the dura mater had been opened, the cerebellum was retracted mesially. An acoustic neurofibroma, 8 by 5 cm., was found. Total removal was accomplished. After removal of the tumor the seventh cranial nerve appeared to be intact, and the dura mater was closed. The internal auditory meatus was not curetted.

*Course.* The patient’s postoperative convalescence was uneventful. A postoperative peripheral type of palsy of the seventh cranial nerve developed on the left. The patient was dismissed on the 12th postoperative day.

Four months later the patient returned for re-examination. He was found to have made an excellent recovery, except for the persistent deafness. The facial palsy on the left showed some abatement to clinical examination and to electromyographic tracings.

*Case 2.*—A 14-year-old girl was first seen at the clinic in September, 1952. She complained mainly of loss of hearing in the left ear of 5 years’ duration, buzzing in the left ear for the same period, and twitching of the left eyelid of 2 years’ duration. Generalized headaches had been present for the year previous to her admission, associated with episodes of nausea and vomiting which had become more frequent in the last 6 months. Three weeks prior to admission she had become aware of a loss of balance, difficulty in walking and inco-ordination of the left arm. She also had noticed some degree of double vision.

*Neurologic examination* revealed horizontal nystagmus, more marked on gazing to the left, loss of hearing on the left graded −3 (0 normal; −4 complete deafness) and a decreased corneal sensation left (graded −3).

In addition, hyporeflexia on the left, drooping of the left side of the face, marked inco-ordination of the left upper and lower extremities, ataxia and muscular hypotonicity on the left side were recorded.

There was also swelling of the optic nerve heads (right 4 D., left 5 D.). The electroencephalogram was reported as disclosing no abnormality. Roentgenograms of the skull showed slight erosion of the tip of the petrous ridge on the left, and decalcification of the floor of the sella (Fig. 1).

In view of the clinical and radiologic findings, a diagnosis of tumor of the left cerebellopontine angle was made.