Trigeminal neuralgia due to cholesteatoma of Meckel's cave

Case report

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A young man with typical symptoms of third division trigeminal neuralgia, without sensory impairment, was found to have a small localized cholesteatoma in Meckel's cave. Removal of the tumor resulted in immediate cure.

KEY WORDS · trigeminal neuralgia · cholesteatoma · Meckel's cave

The peripheral versus central etiology of trigeminal neuralgia remains obscure. Cushing and Eisenhardt considered that peripheral lesions produce secondary neuralgia. Stookey and Ransohoff indicated that a sensory deficit was the most common finding in secondary neuralgia, while Henderson wrote that impairment of sensation never occurs in trigeminal neuralgia even in patients with disseminated sclerosis. However, typical trigeminal neuralgia due to tumors, without sensory loss, have been reported. Both Olivecrona and Gardner noted that small slow-growing tumors produce a tic-like pain while large lesions that produce much more actual distortion of the nerve do not. Trigeminal neuralgia is probably a syndrome and not a disease.

There is no report of a solitary tumor within the confines of Meckel's cave that has produced typical trigeminal neuralgia without any sensory loss. Mahoney reviewed 142 cases of epidermoid tumors (cholesteatoma) and found 53 in the cerebellopontine angle, which was the most frequent site. Cholesteatomas lying quite close to Meckel's cave within the petrous bone have been described by Jefferson and Smalley and Pennybacker. Paratrigeminal extradural epidermoids causing erosion of the apex of the petrous bone have been described by Baumann and Bucy. A most remarkable dumbbell-shaped tumor, which split the layers of the dura of the middle fossa to involve the cavernous sinus and the cerebellopontine angle, was described by Montgomery and Finlayson.

In our case, there was a small cholesteatoma lying in Meckel's cave, causing typical third division trigeminal neuralgia without any sensory loss.

Case Report

Clinical Features

This 26-year-old man was admitted in December, 1969, with a 2-year history of severe spasmatic pain starting in the right lower molar tooth and shooting up to the preauricular region. He described the pain as "lightning, electric shocks" few in number and in rapid succession; the tongue on the
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right side felt sore and smarted. He experienced 2 to 20 such attacks a day and in between was absolutely all right.

Examination. There was no neurological or general physical deficit, nor sensory impairment. Blood and urine tests were normal. A diagnosis of right trigeminal neuralgia was made. The patient took Tagretol, 4 tablets/day for 4 weeks without relief, and so he was scheduled for fractional root section.

Operation. On January 6, the patient was operated on in the sitting position under general anesthesia. A subtemporal intradural retrogasserian section of the posterior root of the right trigeminal nerve was planned. After opening the dura and elevating the temporal lobe, we identified Meckel's cave, the tentorial attachment, and the superior petrosal sinus. On making the incision over the dura of the floor of the middle fossa forming the roof of Meckel's cave, only a small amount of cerebrospinal fluid came out, and, immediately, the white glistening surface of a typical cholesteatoma became visible. The dura over Meckel's cave was cut as a triangular flap hinged medially, and a well-circumscribed tumor the size and shape of a small almond was removed completely. The posterior root of the trigeminal nerve was seen flattened as a ribbon medially. After hemostasis was obtained, the wound was closed in the usual manner.

Histological Examination. The tumor was made up of sheets of tissue with clefts of well-defined kerato hyaline (Fig. 1). At places the clefts contained eosinophilic material and very faint pyknotic central nuclei suggestive of capsules of well-differentiated squamous epithelium. At other places the spaces appeared like those left by dissolved cholesterol crystals.

Postoperative Course. The patient had no pain, and the sensation on the face and cornea remained normal. The wound healed normally. A pneumoencephalogram did not reveal any mass in the cerebellopontine angle and was entirely normal.

Summary

We have reported a case of third division trigeminal neuralgia in a young healthy individual with no sensory loss. While doing a fractional sensory root section of the trigemi-

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**Fig. 1.** Left: Low-power photomicrograph of cholesteatoma tissue showing a large number of clear spaces with a well-demarcated outline. Some cytoplasmic remnants can be seen. No clear nuclei can be made out. H & E, ×100. Right: Higher magnification shows the spaces with some pyknotic nuclei and cytoplasmic remains plus keratin material lining the spaces and forming the cell outlines. H & E, ×450.
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A Meckel’s cave cholesteatoma was found and removed with complete cure. The relevant literature on the subject has been reviewed, and no similar case has come to our notice. The youthful age of the patient and the complete lack of response to drug therapy appear to be the unusual clinical features.

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