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Petrous Apex Congenital Epidermoid Cyst

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Editorial
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Abbreviation

DWI: Diffusion Weighted Imaging.

Editorial

While an acquired cholesteatoma that originates in the middle ear may extend to invade the petrous apex, a congenital epidermoid cyst (= cholesteatoma) of the petrous apex is a cystic lesion brought on by the retention of epithelium remnants in the area of the foramen lacerum, embryonically [1,2]. As the foregut's epithelial remnants recede before the developing cephalic flexure, the cartilage in this area, which is a remnant of the embryonic mesenchyme in the cephalic flexure, may trap them [2].

The clinical signs and development pattern resemble those of progressive petrous apex lesions (symptoms related to adjacent anatomical structures (Eustachian tube, cranial nerves III through VIII, dura, and internal carotid artery). Petrous apex congenital epidermoid cysts are slow-growing lesions and may be asymptomatic for years. They usually appear in early middle age or young adulthood [1,2]. CT scan provides the clearest image of the growing pattern of bone erosion characteristic of a congenital cystic lesion. On MRI, an epidermoid cyst is characterized by a low-to-medium signal intensity on the T1 image and a high signal intensity on the T2 image. Epidermoid cysts are markedly hyperintense on diffusion weighted imaging (DWI), which distinguishes them from arachnoid cysts. T2 FLAIR sequences show a dirty, heterogeneous appearance with intermediate signal, another feature that may help distinguish epidermoid cysts from arachnoid cysts [1,2].

Surgical treatment of this epidural tumor is necessary due to compression of the cranial nerves and the vascular and ventilatory structures of the temporal bone caused by the increasing pressure produced by retained keratin within a stratified squamous epithelial cyst wall [2].

There is no consensus regarding the extent of surgical excision, and some still support total surgical excision to prevent disease recurrence even when aggressive surgical strategy is needed. To reduce patient morbidity, however, subtotal excision of these lesions may be carried out [3]. Decompression and exteriorization of the epidermoid cyst are suggested by many authors because it is not feasible to remove the stratified squamous epithelial lining from the surrounding structures (internal carotid artery, dura, jugular bulb, and cranial nerves) without causing severe morbidity [2]. It has been suggested that once a congenital epidermoid cyst has been evacuated, it may require 10–20 years for sufficient reaccumulation to produce clinical symptoms [2].

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