Cerebellopontine angle epithelial cyst. A case report

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Abstract

A case of epithelial cyst in the cerebellopontine angle is reported. The cyst wall showed glandular epithelium with areas of non-keratinized stratified epithelium and flattened cuboidal cells. The glandular areas stained positively with antibodies to cytokeratin. In addition, the cyst wall contained areas of arachnoid tissue. This, and the unusual position of the cyst, suggest that the epithelial elements in the cyst wall may be metaplastic in origin. Similar previously described cysts were considered to be endodermal in origin.

Keywords: Arachnoid cyst, cerebellopontine angle, enterogenous cyst, epithelial cyst, neuroepithelial cyst.

1 Introduction

Posterior fossa cystic lesions are varied and largely well documented. Their classification, which is often confusing, is commonly based on their anatomical location or on the nature of their lining membrane. Using the latter classification, a broad distinction can be drawn between cysts of endothelial leptomeningeal, and ectodermal derivation. Those known to be derived from leptomeninges are easily designated as arachnoid cysts, and those with an unequivocally endodermal lining are usually referred to as enterogenous cysts. The ectodermal group form a mixed bag including epidermoids, dermoids and teratomas and can be further subdivided into those of non-neuroepithelial origin (such as those listed above) and those of neuroepithelial derivation such as colloid cysts and extra-ventricular ependymal cysts.

Intracranial epithelial cysts are a recognized pathological entity. The embryological derivation of these cysts, however, remains debatable. We describe an epithelial cyst in the cerebellopontine angle. The cyst wall showed histological features of arachnoid tissue. The pathogenesis of such lesions is discussed.

2 Case history

A 22-year-old woman presented with a 3-month history of right-sided facial weakness and numbness, right-sided deafness, intermittent dizziness, and mild right-sided headaches.

Examination: She had bilateral horizontal nystagmus, mild right-sided facial weakness, impairment of pin-prick appreciation over the right cheek, and an absent right corneal reflex. Sensorineural deafness was confirmed in the right ear. The remainder of the neurological examination was normal.

Investigations: CT scan (Figure 1) showed a large cystic lesion occupying the right cerebellopontine angle and extending, anterior to the brainstem, to the left side. There was associated mild hydrocephalus with displacement of the fourth ventricle to the left. MRI (Figure 2) revealed that the upper limit of the mass extended into the chiasmatic cistern, elevating the...
C1. On opening the tense dura, the large cystic tumor was encountered lying beneath normal arachnoid. The cyst contained clear mucinous fluid which, unfortunately, was not analysed. The cyst was dissected free and a third ventriculostomy performed.

Post-operative course: The patient made a good recovery with early improvement of her facial sensory loss, including the return of her corneal reflex. Audiometry confirmed partial recovery of right-sided hearing, but her nystagmus persisted.

Histological examination: The cyst wall had an outer collagenous layer and a lining of varying thickness and appearance. There were extensive areas of apocrine and goblet cell glandular epithelium (Figure 3) together with areas showing non-keratinizing stratified epithelium or flattened cuboidal cells. Immunocytochemistry showed strong positive staining of the glandular cuboidal and stratified areas with an antibody to cytokeratin (CAM 5.2). In certain areas of the cyst wall leptomeningeal elements were present with an arachnoid cell membrane and cell whorls (Figure 3).

floor of the third ventricle, with the lower limit at the foramen magnum displacing the cervical cord to the left.

Operation: A right posterior fossa craniectomy was carried out with removal of the arch of

3 Discussion
An increasing number of posterior fossa epithelial cysts are being reported. Leung et al. [9] surveyed the literature and found 16 cases of epithelial cysts; 10 were considered neuro-