Cerebellopontine angle dermoid cyst

Involvement of the cerebellopontine angle is rare and may be secondary to the caudal extension of a dermoid cyst originating in the parasellar region [1) 2) 3)].

Differential diagnosis

Cerebellopontine angle epidermoid cyst:

Keratinous or epidermoid cysts (ECs) are encapsulated lesions lined by squamous epithelium. They comprise approximately 1% of intracranial lesions. Contrary to dermoid cysts, they lack dermal elements such as sebaceous or apocrine glands and hair follicles.

Non-enhancing extra-axial CPA masses are cystic (epidermoid cyst, arachnoid cyst, neurenteric cyst) or contain fat (dermoid cyst, lipoma).

Two primary lesions that occur with relatively rarity are cerebellopontine angle lipomas and dermoid cysts. These lesions share similar clinical manifestations and imaging characteristics, which can lead to a misdiagnosis [4)].

Case reports

The association between a dermoid cyst and arachnoid cyst is extremely rare and when it is present may suggest the existence of a common factor. Abbou et al. presented a unique case of a young girl who developed headache and ataxia as a result of an intracranial infratentorial dermoid cyst and an arachnoid cyst of the cerebellopontine angle. Complete removal of the dermoid cyst and drainage of the cyst leads to a full recovery. Dermoid and arachnoid cyst are two pathologies with a possible common embryogenic factor, early surgery can give a better outcome in the long term [5)].

A 71-year-old woman underwent removal of a left supratentorial and infratentorial dermoid cyst via a left transzygomatic approach. Three years, 6 months after surgery, screening computed tomography revealed CSDH in the supratentorial and infratentorial regions. Four months later, the patient was transferred to the emergency department with cerebellar ataxia, vomiting, and deterioration of consciousness. Two hematomas, one in the supratentorial region and one in the infratentorial region, were greatly compressing the brain, and seemed to be separate lesions. It was difficult to judge on computed tomography whether there was communication between these two hematoma cavities. The patient underwent hematoma removal via suboccipital craniotomy for the posterior fossa CSDH to resolve brain stem compression. Burr-hole irrigation was used for the supratentorial CSDH to avoid upper herniation. The patient recovered uneventfully and was discharged with no neurological deficits

[6]
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Bertot et al. demonstrated a unique case in which a CPA lipoma was misidentified as a dermoid cyst, leading to surgical intervention. Further, the paper provides a literature review of CPA lipomas and dermoid cysts to aid readers in further differentiating between these two unique tumors [7].

Jeong KH, Choi JW, Shin JE, Kim CH. Abnormal Magnetic Resonance Imaging Findings in Patients With Sudden Sensorineural Hearing Loss: Vestibular Schwannoma as the Most Common Cause of MRI Abnormality. Medicine (Baltimore). 2016 Apr;95(17):e3557. doi: 10.1097/MD.0000000000003557. PMID: 27124066; PMCID: PMC4998729.

A 64-year-old man complained of transient dizziness. MRI incidentally disclosed a 20-mm-diameter cystic lesion in the left cerebellopontine angle. Since the cyst was asymptomatic, follow-up MRIs were performed. One year later, sudden headache and left oculomotor palsy occurred. MRI showed niveau formation within the cyst and scattered fat droplets within the cerebrospinal fluid space, which indicated a spontaneous rupture of the dermoid cyst. Since hydrocephalus on MRI and gait disturbance appeared 2 months later, the tumor was resected, and a ventriculoperitoneal shunt was inserted. The patient's symptoms disappeared, and there were no postoperative neurological deficits. The pathological diagnosis was dermoid cyst. Only 48 cases of spontaneous rupture of a dermoid cyst have been reported. All were symptomatic, and MRI showed a large cyst. Of these cases, none was detected incidentally. Therefore, this is the first case report of an incidentally found dermoid cyst that ruptured spontaneously. Although asymptomatic, small dermoid cysts are usually followed up by MRI without surgical intervention. The possibility of spontaneous rupture, which may give rise to hydrocephalus, as in this case, should always be kept in mind [8].

An hour-glass-shaped multidensity lesion found by CT in a 6-year-old boy who had been admitted to the emergency department after a mild car accident. This lesion turned out to be a congenital dermoid tumour of the right cerebellopontine angle-tentorial notch region containing 12 mature teeth and 14 pseudocarilagenous structures. This is the first case of dermoid tumour containing so many teeth, reported in an asymptomatic person and located off the midline [9].

A 46-year-old female with a history of steatocystoma multiplex, bradydactylies and kyphosis showed oscillopsia, ataxia and hemifacial spasm. MRI findings suggested a giant dermoid cyst extending from the left middle temporal fossa to the cerebellopontine angle, and this was confirmed surgically [10].

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