Peer reviewed article

A suprasellar arachnoid cyst destructing the sphenoid sinus: An unusual cause of headache in an elderly female

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Headache is one of the most frequent physical complaints of humans. Although headaches are generally benign, neuroimaging studies are frequently performed in clinical practice for the fear of missing a serious underlying disease.

Arachnoid cysts are cavities with a content similar to cerebrospinal fluid, frequently communicating with the subarachnoid space. Arachnoid cysts are often discovered incidentally in MRs performed for a variety of reasons [1]. They make up 1% of the intracranial space occupying lesions, and although typically seen in children (13%), they may be undiagnosed until the patient has become adult [2, 3]. In adults, suprasellar cysts represent 9% of all the arachnoid cysts while in the paediatric population this percentage reaches 15% [2].

Since a symptomatic arachnoid cyst in an elderly patient is rare [4], the case was reported.

Case report

A 66-year-old female with a history of chronic headache for about 5 years was referred for an otolaryngological evaluation. Waters view revealed a blurring in the sphenoid sinus, mimicking an isolated sphenoidal sinusitis. The remaining paranasal sinuses were without notice. Diagnostic nasal endoscopy was totally normal with no signs of any inflammatory condition, septal deviation or any space occupying mass. The computed tomography (CT) scan demonstrated a suprasellar right-sided arachnoid cyst, destructing the sphenoid sinus (Fig. 1 and 2). Though surgery was advocated to her, she refused it. She did not have neurological signs or any hormonal imbalance. In neurological and eye examination, no other possible cause for her headache was found.

Discussion

Prepontine (or suprasellar) arachnoid cysts are uncommon in clinical practice and experience in their management may therefore be limited [5].

Arachnoid cysts form a cavity containing a cerebrospinal-like fluid, the wall of which is composed of arachnoidal cells. Other types of intracranial cysts have been described, they differ from arachnoid cysts by the histological characteristics of their wall [6]. Two different types of suprasellar arachnoid cysts were postulated: a noncommunicating intraarachnoid cyst of the diencephalic membrane of Liliequist, and a communicating cyst that is a cystic dilation of the interpeduncular cistern [7]. Several localisations of these lesions have been described: the most frequent being the temporo-sylvian area [6].

The diagnosis of arachnoid cysts has become easier and more frequent with the general use of the CT scanner and magnetic resonance imaging (MRI). Their congenital origin is usually accepted [8]. Arachnoid cysts are considered as resulting from congenital malformations that can change during postnatal life. They can no longer be considered as resulting from cerebral atrophy. This arachnoid malformation could be the primary event or be explained by an impairment of the cerebrospinal fluid drainage generated by venous agenesis. Several mechanisms could account for the inflation of these cysts: secretion by the cells forming the cyst walls, unidirectional valve, liquid movements secondary to pulsations of the veins [6].

It is also postulated that head trauma in infancy may contribute to the pathogenesis of arachnoid cysts in some cases [8]. They correspond to liquid formations surrounded by an arachnoid sheet but their pathophysiology remains unclear. When they are asymptomatic and incidentally discovered, they do not require any specific treatment.

Arachnoid cysts may cause neurological symptoms [9]. Variable neurological signs depending on location may be inaugural, although intracranial hypertension is the most frequent [10]. Symptomatic cysts usually present with features of hydrocephalus due to obstruction of the third ventricle and aqueduct, and occlusion or partial obstruction of both foramina of Monro [5].

The treatment of these symptomatic cysts remains surgical. Several options are possible: direct approach of the cyst, derivation of the cyst with different modalities, or endoscopic fenestration [10]. Endoscopic treatment of suprasellar arachnoid cysts is now the treatment of choice. By marsupialising the roof of the cyst, the condition can be cured [11].

Figure 1

Suprasellar arachnoid cyst (black arrow) destructing the sphenoid sinus.

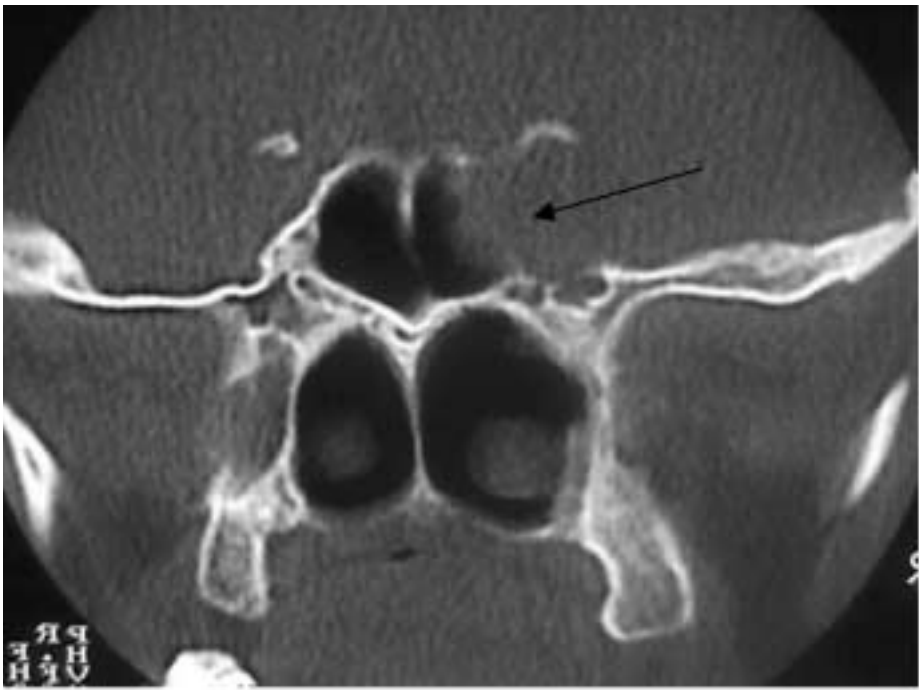
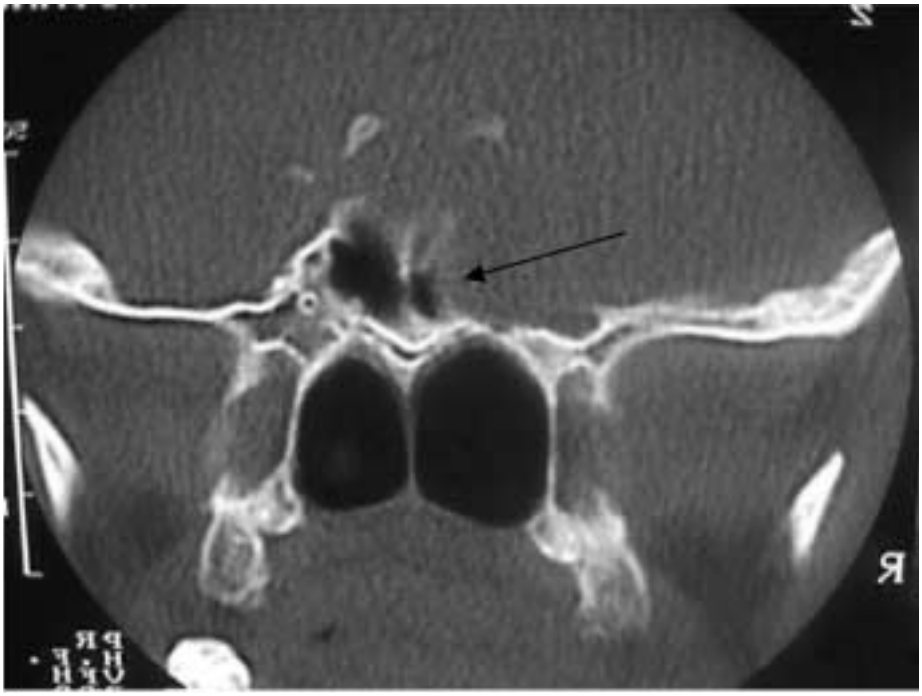


Figure 2

Suprasellar arachnoid cyst (black arrow) destructing the sphenoid sinus.



Arachnoid cysts of the paranasal sinus are rare. They have not been described yet in the sphenoid sinus [12]. Mewes et al. reported a 34-year-old female with a history of chronic headaches and a suspected mucocele of the sphenoid sinus in CT and MRI studies. An extended arachnoid cyst was found in the enlarged sphenoid sinus, which was obliterated with collagen, fibrin glue and abdominal fat [12].

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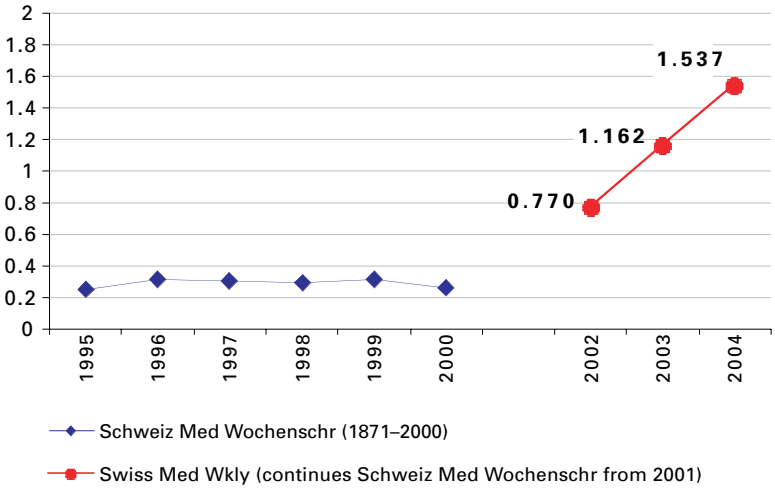

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