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Head and Neck

Nontraumatic intradiploic arachnoid cyst of the sphenoid bone

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ABSTRACT

The intradiploic arachnoid cysts are rare radiological entities which are generally post-traumatic in nature and occur mostly in occipital region. We present a rare case of non-traumatic, asymptomatic intradiploic cyst of the greater wing of sphenoid in an elderly patient. The CT and MR imaging confirmed an intraosseous multiloculated cystic lesion which showed communication with the cerebrospinal fluid in anterior temporal fossa, through the small bony defects.

Introduction

Intracranial arachnoid cysts are benign cerebrospinal fluid (CSF)-containing cysts that are generally developmental in nature and are rarely post-traumatic or posthemorrhagic [1,2]. These cysts most commonly occur in the middle cranial fossa and can occasionally be symptomatic. Intradiploic arachnoid cyst is, however, a rare entity, can remain asymptomatic, and get diagnosed incidentally. The term "intradiploic arachnoid cyst" was first used by Weinand et al. in 1989 [3]. These intraosseous cysts are mostly post-traumatic in origin and very rarely non-traumatic in nature and are mostly documented in occipital regions [4–6]. Intradiploic arachnoid cysts may pose diagnostic challenge, and understanding the clinicopathologic correlation and imaging characteristic is crucial to avoid any misinterpretations.

Case report

A 77-year-old female patient had a head computed tomography (CT) examination for recent headache. There was clinical history of previously treated and cured gastric cancer 13 years ago and also history of melanoma in the past. However, no history of recent or previous trauma or any other neurologic symptoms were present. Clinical examination was unremarkable without any neurologic deficit. No previous neuroimaging was available in our records to compare.

The head CT (unenhanced and contrast enhanced) did not reveal any acute intracranial finding or any meningeal or parenchymal abnormality. The bony floor of the left middle cranial fossa, the greater wing of sphenoid bone, showed localized area of nonexpansile, multiloculated lesion of CSF attenuation with associated significant bony cortical thinning and small focal

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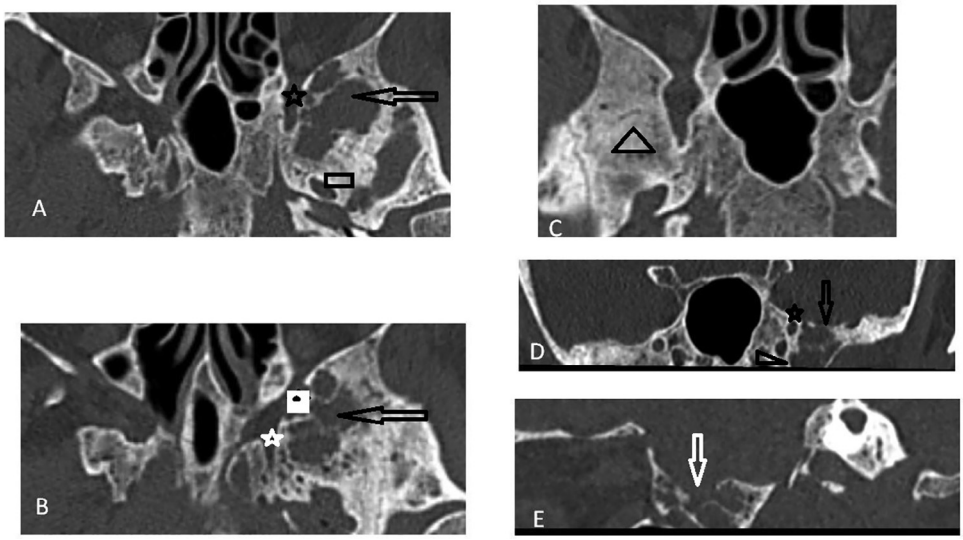

Fig. 1 – Computed tomography images. Axial images of the abnormal greater wing of the left sphenoid (A and B); axial image of the normal right sphenoid (C, triangle); and coronal (D) and sagittal images of the left sphenoid (E). These images show the lytic, multicystic lesion with focal cortical erosions at bony margins (arrows) on the left. Normal-looking foramen rotundum (star; A, B, and D), foramen ovale (rectangle, A), pterygopalatine fossa (white square, B), and vidian canal (side triangle, D).

bony defects (Fig. 1). There was no associated soft tissue component. This abnormality did not show any relationship or evidence of origin from adjacent structures of the skull base. The sphenoid sinus and orbits appeared normal with intact bony walls. The bony outlines of various foramina at mid skull base, including the sphenopalatine, the rotundum, the ovale, the spinosum, and the vidian canal, were intact (Fig. 1).

Subsequently, the patient had a contrast-enhanced head and neck magnetic resonance imaging (MRI) examination to assess the skull base in particular. The lesion was confirmed as a benign multicystic lesion in the greater wing of the sphenoid, which showed a CSF signal, marked low at T1-weighted imaging and high at T2-weighted imaging (Fig. 2), suppression of high signal at T2-fluid-attenuated inversion recovery

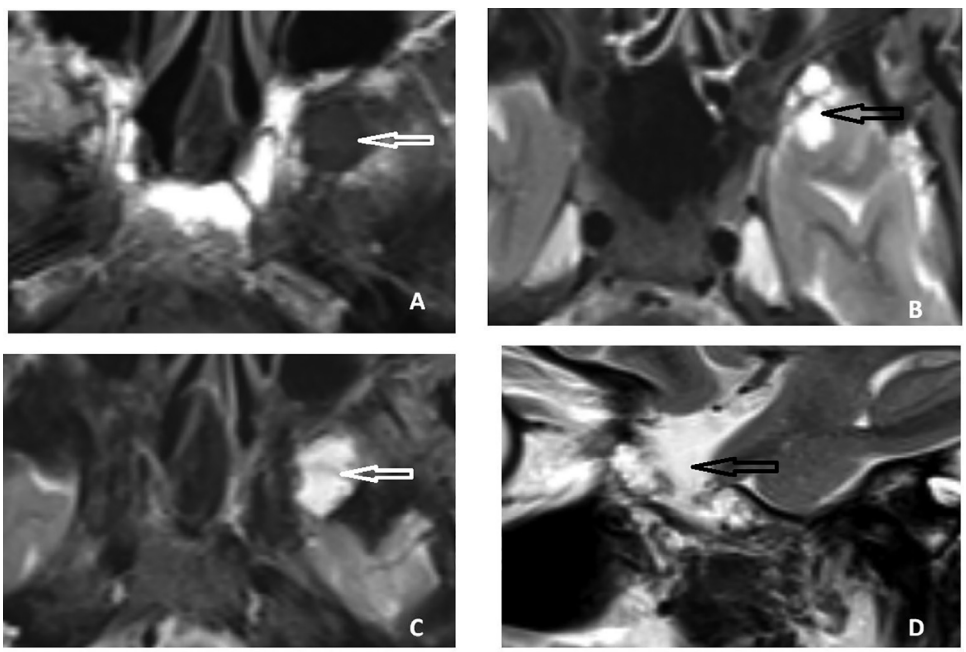

Fig. 2 – Magnetic resonance images. Axial T1-weighted (A), axial T2-weighted (B and C), and sagittal T2-weighted (D) images demonstrate the intradiploic simple multiloculated cystic lesion of the left greater wing of the sphenoid (arrows), communicating with the small intracranial arachnoid cyst.