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Cranial Hyperostosis: Think of a En Plaque Meningioma

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Abstract | **Case Report**

En plaque meningioma is a rare form of meningioma, representing less than 10% of meningiomas [1]. It is characterized by growth spread along the dura mater [2]. We report the case of a 63-year-old patient who consulted for an incomplete intracranial hypertension syndrome associated with a right temporal swelling and exophthalmos. Brain brain magnetic resonance imaging (MRI) showed the presence of a compressive right spheno-orbital tumor process associated with hyperostosis with meningeal thickening in the area, enhanced after contrast injection, extending to the lateral wall of the right orbit and reaching the optic nerve, responsible for grade III exophthalmos. The patient underwent subtotal surgery with adjuvant radiotherapy. After 6 months of follow-up, the patient is in clinical and radiological stability.

Keywords : En plaque meningioma, Cranial hyperostosis, radiological characteristic, case repport.

INTRODUCTION

Plaque meningioma is a rare form of meningioma (less than 10%) [1], defined by growth spread along the dura mater with a low nodular tumor component and often associated with bone hyperostosis [3]. The diagnosis remains difficult and can be confused with other causes of hyperostosis, notably osteosarcoma [3]. Certain radiological aspects can guide the diagnosis [4]. In this work, we will report a case of plaque meningioma and, we will discuss the radiological aspects of this clinical entity.

CASE REPORT

63-year-old patient, with no pathological history, whod consult for incomplete intracranial hypertension syndrome (headaches, decreased visual acuity of the right eye), and right temporal swelling with exophthalmos.

A brain scan was performed, which demonstrated the presence of a lesion process centered on the greater wing of the sphenoid and the right temporal bone, responsible for a grass-burning periosteal reaction, whose fleshy portion is spontaneously isodense, strongly and heterogeneously enhanced after injection of the contrast agent. This process is responsible for compression and the beginning of subfalcorian engagement (Figure 1). The MRI supplement confirmed the presence of a right spheno-orbital lesion process responsible for bony enlargement with isointense signal on T1 and T2, showing heterogeneous enhancement after gadolinium injection, associated with meningeal thickening in the corresponding area that enhances intensely after injection and measures 41 x 24 x 35 mm (Figure 2). The patient underwent surgical treatment followed by radiotherapy. Follow-up three months after the treatment indicates stability.

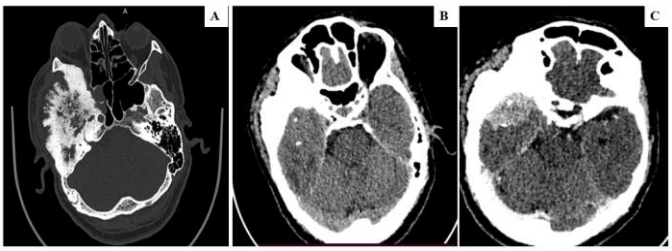

Figure 1: Axial CT scan image of a plaque meningioma (A: bone window; B: parenchymal window without injection ; C: parenchymal window with injection)

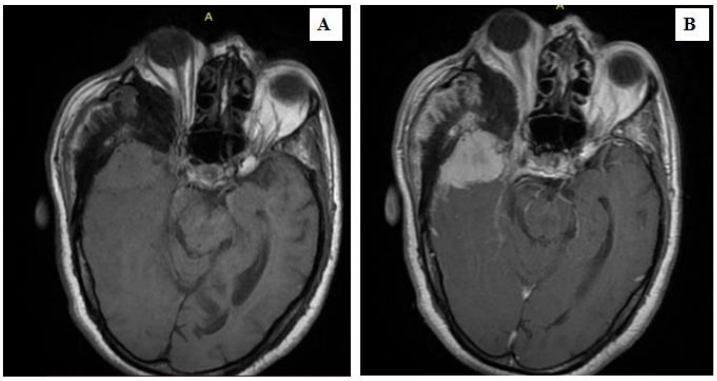

Figure 2: Axial section brain MRI image of a plaque meningioma (A: T1 sequence; B: T1 sequence after gadolinium injection)

DISCUSSION

Plaque meningioma is a particular form of meningioma, characterized by horizontal growth that extends along the dura mater [1]. It is often associated with marked bone hyperostosis [2]. This tumor process preferentially develops in the spheno-orbital region (the most frequent), the convexity, the falx cerebri, and the parasagittal region [2.3.5].

Pathophysiologically, hyperostosis is mainly due to tumor infiltration of the bone (main mechanism), but also to the osteoblastic reaction and associated tumor hypervascularization [6].

The clinical presentation depends on the location ; most often, for the spheno-orbital location, the diagnosis is made in the presence of progressive exophthalmos, a decrease in visual acuity, diplopia, or even an orbital apex syndrome. For other locations, the clinical signs may be limited to headaches, focal deficits, or seizures. The diagnosis is often late given the slow progression of this disease [7].

From a radiological standpoint, the CT scan remains the key examination for studying the bone. Certain signs are typical, notably marked hyperostosis, often irregular; thickening of the inner table ± outer table; obliteration of the diploë; and sometimes intra-orbital extension or extension towards the sinuses [8].

On MRI, the characteristic signs of a plaque meningioma are dural thickening in a plaque (Iso- or hypointense on T1 and variable on T2 with intense and homogeneous enhancement), the dural tail, and the involvement of adjacent structures (orbit, cavernous sinus) [9].

Diagnostic confirmation remains histological, based on a biopsy or the surgical specimen. Local treatment remains the preferred treatment. Surgery is often difficult (frequent incomplete resection) with a high functional risk (orbit, cranial nerves), and complementary radiotherapy is often performed [10].

CONCLUSION

Plaque meningioma is a tumor with a widespread growth. The presence of hyperostosis is more suggestive of a plaque meningioma than a classic meningioma; imaging plays a key role in the diagnosis, which remains histological (CT scan is the key exam for the bone, and MRI allows identifying dural and loco-regional extension). It is a benign but locally aggressive tumor, whose treatment is essentially surgery and/or radiotherapy.

Conflicts of Interest: The authors declare no conflictsof interest.

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