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Research Article

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Extensive Olfactory Groove Meningioma after Hormone Therapy for Gender Transition

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Abstract

Possible complications that may occur and how to solve them before surgery are essential. This case is of special interest for being low-incidence pathology in a rare location. The case is of high interest because of the importance of resecting the lesion to prevent sequels and the complexity of its management and highlights the importance of considering the diagnosis of this event after hormone therapy.

Keywords: Meningioma; Hormone therapy; Olfactory groove; Cyproterone acetate

Introduction

Presentation of a 7.5 cm giant olfactory groove meningioma case in a 52-year-old patient undergoing treatment with hormone therapy to transition to the female gender. The case is of great interest because the olfactory groove is a rare location, constituting 4.5% of all meningiomas **[1-3].** And for having hormone therapy as a probable etiology and growth facilitator of the meningioma given a long time of exposure per cumulative dose for 10 years.

Material and Methods

A 52-year-old patient who, after 10 years of hormone therapy with cyproterone acetate 50 mg every 12 hours and estradiol patches of 100 micrograms every 3 days due to gender dysphoria to make a female gender transition, presented with oppressive headache in the bilateral fronto-parietal region and alterations of the behavior of recent onset, associated with personal carelessness. No focalities. A brain CT revealed a 7.5x 6.4x 4.5 cm extra axial tumor

in the anterior cranial fossa with a base of implantation on the floor of the same. A left supraorbital lateral craniotomy **[4,5]** was performed with complete Simpson I resection, revealing in the pathology a grade I meningioma with a fibroblastic histological pattern. Persisting at present without neurological focalities **[6,7].**

The observation that meningioma cell lines proliferate after exposure to progesterone and estrogen provide molecular and physiologic evidence for a potential role of sex steroid hormones in the development and growth of meningioma. Clinical evidence suggesting that meningioma might be a hormone-sensitive tumor is based on observations of higher incidence in women than in men, an observed increased growth of meningioma during pregnancy and menses, increased incidence of meningioma in women with breast cancer, and a higher prevalence in women with lymphangioleiomyomatosis, a cystic lung disease that is commonly treated long term with progesterone and other hormonal agents **[8-11] (Figure 1-5).**

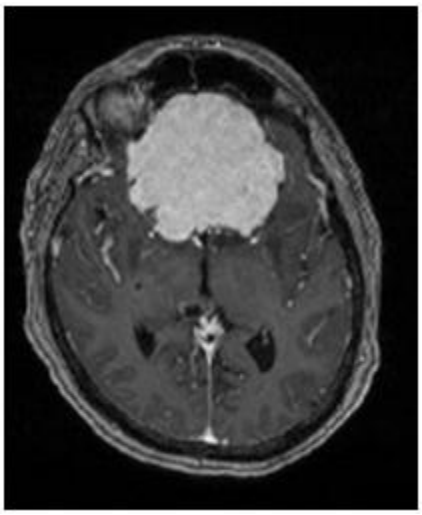

Figure 1: Axial MRI.

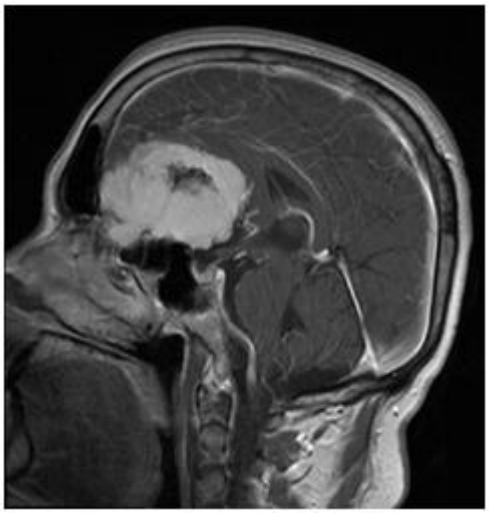

Figure 2: Sagittal MRI.

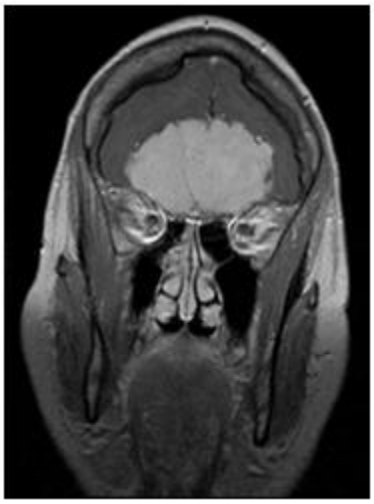

Figure 3: Coronal MRI.

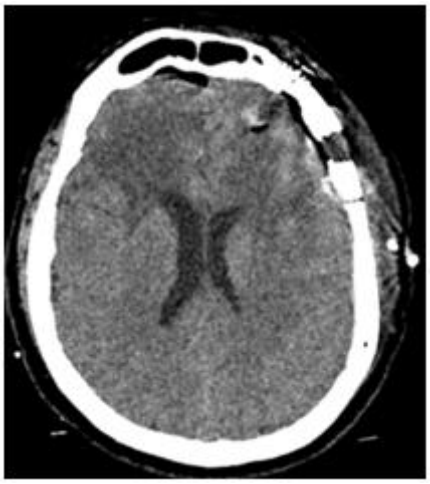

Figure 4: Postsurgical Axial CT.

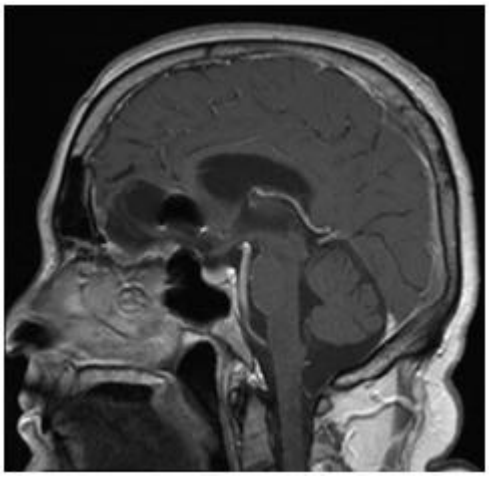

Figure 5: Postsurgical Sagittal MRI.

Conclusions

It is suggested that hormones may be part of the etiology of meningiomas since they may present a large number of estradiol receptors. Although hormonal therapies are not associated with meningioma in women, the risk in men has been observed with even short-term, high-dose therapy. The increased risk of both single and multiple meningiomas due to the use of high-dose cyproterone acetate has been described in the literature and by the Spanish Agency for Medicines and Health Products. This risk increases with the accumulated dose and should be discontinued after diagnosis.

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