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PITUITARY ABSCESS – A RARE CASE REPORT

Neurosurgery

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ABSTRACT

Study Design: Case Report **Objective:** To report a rare case of Pituitary Abscess, its management and outcome. **Background:** A 15-year-old boy presented with history of headache on and off for the past 9 months. MRI revealed a peripheral rim enhancing lesion in the sellar region. Patient underwent Right Frontal Craniotomy, Subfrontal Approach wherein there was pus in the sellar region which was aspirated. Patient was started on antibiotic therapy and on follow up patient got relieved of his symptoms. **Conclusion:** Pituitary Abscess is a very rare disease of the sellar region that is difficult to correctly diagnose on the basis of clinical manifestations and MRI. Despite its rareness, a Pituitary Abscess must be considered in the case of a pituitary mass associated with signs of raised Intracranial Pressure with/without pituitary hormone dysregulation and signs of infection. The treatment is a combination of surgery, antibiotics, and hormone substitution whenever needed.

KEYWORDS

Pituitary Abscess, Magnetic Resonance Imaging, Antibiotics

INTRODUCTION

Pituitary abscess is a rare disorder caused by an infectious etiology where purulent material accumulates inside the sella turcica. It accounts for less than 1% of all cases of pituitary lesions in specialized centers [1,2,3]. The rarity of Pituitary Abscess and the non-specific symptoms associated with it makes it difficult to make a diagnosis before surgery[4]. Magnetic Resonance Imaging (MRI) is the best imaging technique available because of its multimodality[5]. However, the diagnosis of Pituitary Abscess is often very challenging because many other pituitary conditions can present similar MRI features.

CASE REPORT

A 15-year-old boy presented to our institute with history of headache on and off for the past 9 months. MRI revealed a well-defined lesion appearing iso to hyperintense on T1 and heterogenously hyperintense on T2WI with a peripheral rim appearing T1 hyper and T2 hypointense in the sellar region causing widening of the pituitary fossa. The lesion measured approximately 16*21.5*15.1 mm. It was abutting the pituitary stalk and the optic chiasma. There was encasement of bilateral Internal Carotid Artery on either side. Patient was planned for Right Frontal Craniotomy, Subfrontal Approach and excision of tumour. Intraoperatively there was pus in the sellar region which was sent for Gram stain, culture, AFB stain and histopathological evaluation. The histopathology showed features suggestive of an inflammatory lesion. The Gram stain showed a few WBC s and culture was sterile. AFB stain didn't show any acid fast bacilli. Patient was started on antibiotics post operatively (Ceftriaxone, Vancomycin and Metronidazole for six weeks). Patient responded well and on follow up patient got relieved of his symptoms.

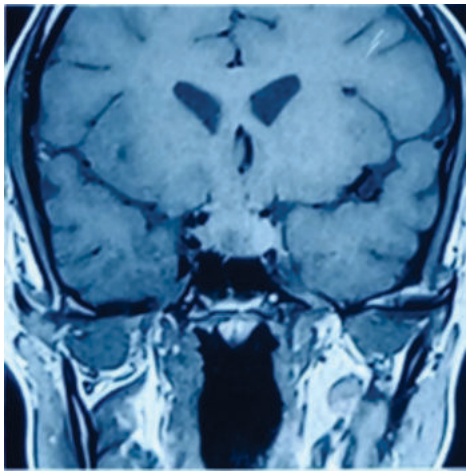

Fig. 1 : Mri Brain – Coronal Cut Showing Pituitary Lesion

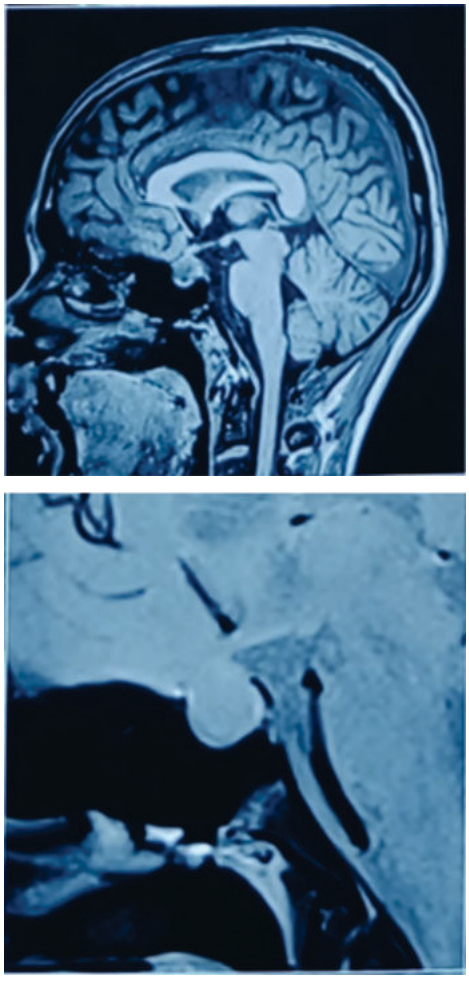

Fig. 2 : Mri Brain – Sagittal Cut Showing Pituitary Lesion With Peripheral Rim Enhancement

DISCUSSION

Pituitary Abscess is a rare condition, often with a poor prognosis. Only about 200 cases have been described in the literature till date [1, 6] after the description of the first two cases by Heslop in 1848 and Simmonds in 1914, respectively[7]. Pituitary Abscess can be primary (arising in a previously normal pituitary gland), accounting for about 70% of cases,

and secondary (developing within preexisting pituitary lesions), accounting for 30% [8]. The primary subtype arises from hematogenous spread of a systemic infection or local spread from a regional infection such as paranasal sinusitis, meningitis, and cavernous venous thrombophlebitis [5,8]. Secondary subtype can develop from preexisting conditions such as a pituitary adenoma, Rathke's cleft cyst, craniopharyngioma, granulomatous disease, and autoimmune lymphocytic hypophysitis (in children)[9, 10, 11]. There have also been reports where secondary Pituitary Abscess have occurred as a complication of pituitary surgical procedures or radiological interventions[8,12,13].

The clinical presentation of Pituitary Abscess is usually misleading because there are no specific symptoms. Patient might present with headache, pituitary hypofunction, visual disturbances, and an increased intracranial pressure syndrome; with symptoms of infection often being discreet and inconstant[1, 6, 8, 14]. Classical signs of infection such as fever or laboratory markers of inflammation are easier to be identified, but they still lack sensitivity and specificity[15].

The pathogenic microorganisms in Pituitary Abscesses are widespread and include Gram-positive bacteria, Gram-negative bacteria, anaerobes and fungi[16,17]. Streptococcus and Staphylococcus are the most predominant Gram-positive bacteria, whereas Escherichia coli, Mycobacterium and Neisseria have also been reported[15,18,17].

Preoperative diagnosis is difficult as symptoms such as pituitary abnormal function are non-specific, radiological findings are not distinctive of an abscess and symptoms like headache or visual disturbances are vague. In addition, infectious symptoms such as fever, meningitis and high white cell count (WBC) are not seen in around 70–80% of cases.

Multimodal MRI is the mainstay imaging modality for a proper pre-operative diagnosis. However, despite all the advances in MRI, accurate diagnosis is challenging because many other diseases can exhibit the same MRI features.[5]. MRI scanning of Pituitary Abscess might demonstrate a cystic or partially cystic pituitary mass, sometimes accompanied by some special signs like peripheral rim enhancement and a thickened pituitary stalk. [11, 19,20,21]. The signal of the lesion is determined by the composition of its content: the proportion of water, proteins, and lipids and whether hemorrhagic or not.

Although antibiotics alone could be successful in the treatment of Pituitary Abscess[22], most authors consider prompt surgical exploration, to be the first choice[14, 23,24,25,26]. Culture of the purulent material and postoperative antibiotic therapy on the basis of antibiotic sensitivity test is necessary along with Hormone replacement therapy whenever recommended.

CONCLUSION

Pituitary Abscess is a very rare disease of the sellar region that is difficult to correctly diagnose on the basis of clinical manifestations and radiological imaging. MRI of Pituitary Abscess usually reveals a cystic or partially cystic pituitary mass, sometimes accompanied by some special signs like peripheral rim enhancement and a thickened pituitary stalk. Despite its rareness, a Pituitary Abscess must be considered in the case of a pituitary mass associated with signs of raised Intracranial Pressure with/without pituitary hormone dysregulation and signs of infection. The treatment is a combination of surgery, antibiotics, and hormone substitution whenever needed. The keys for successful treatment of a Pituitary Abscess include an early diagnosis, early surgery, and the use of spectrum-specific antibiotics.

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