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Case Report

Pituitary Abscess: Report on a Case

Nabil Raouzi*, Alshamaileh Eshaq yousef, El Farissi Amine, M Khoulali, Noureddine Oulali, Faycal Moufid

Neurosurgery Department, CHU Mohammed VI, Mohammed Premier University, Oujda, Morocco

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***Corresponding author:** Raouzi Nabil

Abstract

Pituitary abscess is a rare, but potentially life-threatening condition unless promptly diagnosed and treated, and it accounts for less than 1% of all pituitary diseases, few cases have then been published in the literature, the majority of this cases are diagnosed either post mortem or post operatively. Pituitary abscesses may occur in a normal pituitary gland in 70% of cases (primary types), or secondary to a preexisting lesion. We report a successfully managed case of a 66-year-old woman. We discuss the pathogenicity, the morphologic and radiologic criteria suggestive of this unusual infection of pituitary region and also treatment options

Keywords: Pituitary region, Abscess, Transsphenoidal Surgery, Antibiotic Therapy.

INTRODUCTION

Pituitary abscess is a rare and serious condition that is associated with high rates of mortality and morbidity despite being only 1% of pituitary lesions [1-5]. Totally 272 cases have been reported in the literature [29] the majority were isolated cases [2]. The first case was diagnosed on autopsy in 1848, by Heslop, the diagnosis is difficult and frequently made per and postoperatively when pathological studies are observed [2]. This observation illustrates a difficult case of pituitary abscesses. Therefore, the diagnosis of pituitary abscess should be considered in front of any lesion of the pituitary area.

CASE REPORT

A 66-year-old woman with no significant past medical history was investigated for severe headache and persistent vomiting with impaired general status, but no fever or other associated clinical signs of infection, severe hyponatremia (Na 120 mmol/L) with normal volume, low plasma osmolarity, elevated urinary sodium, and hypocortisolism. The patient was diagnosed with syndrome of inappropriate ADH secretion (SIADH) and adrenal insufficiency. Examination of routine blood work showed mildly high white cell count. Laboratory investigation of inflammatory markers, showed elevated erythrocyte sedimentation rate, and elevated hypersensitive c-reactive protein. Magnetic resonance imaging (MRI) scan showed a thickening of the stalk and a sellar mass measuring 2.1×1.6×1.4 cm with suprasellar extension. After administration of gadolinium, there was a partial rim enhancement appearance of the lesion on T1-weighted images. The pituitary mass had smooth borders and it compressed the optic chiasm. (Figure A and B). Transsphenoidal resection was performed. Intraoperatively, a significant amount of yellowish pus was encountered. The pus was drained. The pituitary gland was found to be intact after the removal of the lesion. The samples were sent for histological analysis and culture. No pathogen was isolated and the pathology showed, tissue with infiltration by lymphoplasmacytoid cells. Empirical antibiotic therapy with intravenous ceftriaxone and hydrocortisone replacement therapy were given to the patient for 2 weeks and oral antibiotic therapy for 4 weeks. Postoperatively, the patient was no fever, four months after surgery, the endocrine laboratory test results were all normal. Visual field examination was normal also.

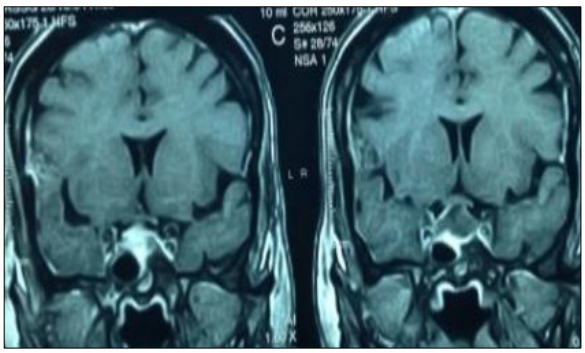

Fig-A

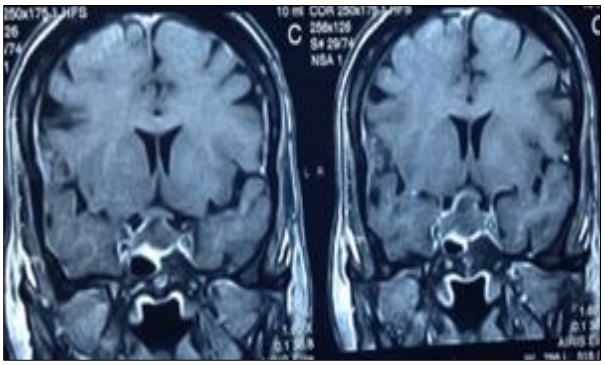

Fig-B

(A) Preoperative T1- weighted coronal MRI shows hypointense and isointense signals.

(B) T2-weighted MRI shows rim enhancement after gadolinium injection

DISCUSSION

Pituitary abscesses are rare but serious condition, representing 0.27% of operated pituitary tumours and 0.24–0.6% of all pituitary diseases [4]. Recent retrospective studies have been published, Lu Gao. al than in 2016 about 66 cases [30], and another one in 2012 about 29 cases [6]. The other cases published were isolated cases. The most commonly isolated pathogens are Staphylococcus spp. and Streptococcus spp, followed by Neisseria spp., Micrococcus, Citrobacter spp., Escherichia coli, Brucella, Salmonella, Corynebacterium and Mycobacterium [23]. However, in immunosuppressed patients, Aspergillus, Candida and Histoplasma are the most frequent pathogens (24). In this case, no infectious agent was isolated, which may be due to previous antibiotic treatment. Divided in tow major groupes according to the mechanism of appearance, hematogenous (primary types) it's the more frequent [7–9], or direct extension of an adjacent infection (secondary types), such as meningitis and purulent sphenoiditis, [10,11] or sometimes thrombophlebitis of the cavernous sinus. Having pituitary affections can raise the probability of developing pituitary abcess, by exemple immunocompromised patients or those with concurrent pituitary lesions, such as ; pituitary adenoma, and craniopharyngioma, may have an increased risk for pituitary abscess. Because of impaired circulation, areas of necrosis or local immunological impairment [4]. The difficulty of making the diagnosis is essentially due to absence of charestaristic clinical or radiological findings, to make it different from other lesions such as pituitary adenoma, or apoplexy, before performing surgery and pathology studies.

Presurgical diagnosis is usually difficult due to the rarity of the condition and the nonspecific presentation; symptoms mimic other pituitary lesions [25], progressive and chronic headache being the most rapported symptom, the vision impairment was found in about 50% of cases, and adenohypophysial hormone deficiencies (3--50%).(2,4) Infectious manifestations only occur in one-third of the patients and meningism in25%,(1.4.7) but when they occur, they support diagnostic suspicion. Diabetes insipidus may be helpful for differential diagnosis because it is an uncommon symptom in pituitary adenomas, while it is common in abscesses almost one-half of patients. There have, however, been very few cases reported of syndrome of inappropriate ADH secretion associated with a pituitary tumor [8]. initially occurred and subsided after abscess drainage, leaving diabetes insipidus as a sequela. CT and MRI modalities has improved the sensitivity in detecting pituitary lesions by demonstrating a ring-enhancing cystic pituitary lesion, in case of abscess, Computed tomography scanning may reveal a round low-density area with ring enhancement [9,12,13] or an isodense mass with homogeneous enhancement in the sella [2]. MRI is considered the radiographic diagnostic technique of choice [14]. Pituitary abscess usually appears as a cystic sellar lesion with peripheral ring-shaped enhancement after contrast administration. On T1-weighted images, it may appear slight hypo- or isointense similar to that of brain. On T2-weighted images, pituitary abscesses have a nonspecific appearance but tend to give high signal. The increased signal of these lesions is probably due to their high protein content. (15.16.17) Pituitary stalk thickening simulating infiltrative disease may also be seen [18]. These findings are non-specific and suggest differential diagnosis with cystic adenoma, craniopharyngioma, or Rathke cleft cyst. Further, the signal intensity of an abscess may be modified by its protein content or the presence of haemorrhage [2, 16]. Diffusion-weighted MRI may also help in differentiating the abscess, by showing a high diffusion signal with a low appar-ent diffusion coefficient (ADC), from necrotic tumors, which show a low diffusion signal with high ADC.[19,14], Although accumulated clinical experience and the typical CT or MR characteristics contributed to the preoperative diagnosis of pituitary abscess, a definitive diagnosis based on the intraoperative finding and postoperative pathology , a clinician should never ignore the existence of pituitary abscess after consideration of commons diagnosis's for a cystic pituitary mass.

The treatment of choice consists of trans-sphenoidal surgical drainage and antibiotic therapy for 3-6 weeks [18, 19]. The first surgical case was described by Simmonds in 1914 [5]. Endoscopic transnasal transphenoidal surgery is considered gold standard for patients with pituitary abscess, the technique is safe, and minimally invasive. Allows decompression of the optic chiasm, helps in the management of associated sinusitis [6], the bacteriological study, determine the pathogens agents and adapt the antibiotic treatment for a good outcome. Compared with the traditional microsurgery, the

endoscopic transsphenoidal surgery is more superior at the protection of the normal structure of nasal cavity and then believed to be less traumatic [6]. In addition, this approach permits a direct look into the surgical anatomy, gives better magnification and visualization of "hidden" zones, greater comfort for patients because of minimal trauma for inner nose and minimal immediate respiratory difficulties. Nevertheless, the disadvantages of this approach are learning curve, loss of 3D vision, and difficulty in bleeding management [20]. Craniotomy is appropriate if the abscess is exclusively suprasellar, or if the suprasellar extent of the abscess is so significant that approach from the transsphenoidal route is unlikely to provide significant evacuation of the abscess cavity and decompression of suprasellar structures. The most common complications of surgery for pituitary abscess include meningitis, cephalitis, infectious vascular injury, and cerebrospinal fluid leakage [21]. Pituitary hormone deficiencies remain in the majority of patients following treatment, though no long-term follow-up data exist in the literature. Two recent small studies suggest that the most determining factor for the persistence of pituitary hormone deficiencies is the duration of symptoms before diagnosis [26,27] Broad-spectrum antibiotic therapy, which includes agents that are effective against Gram-positive, Gram-negative, and anaerobic bacteria, should be initiated as soon as the diagnosis of pituitary abscess is strongly suspected in a patient who shows symptoms of sepsis preoperatively, or confirmed during surgery [22]. Medical treatment includes antibiotic therapy, which should be given for about 4–6 weeks [28]. Empirical treatment with ceftriaxone [29] is indicated while awaiting microbiology and histological confirmation. Pituitary abscess mortality is 30% and, if a large tumour or meningitis coexists, this increases to 50%. [23]

CONCLUSION

Pituitary abscess is a rare and serious entity that is usually misdiagnosed as a pituitary tumor with a definite diagnosis only made per or postoperatively. To better determine the salient signs and symptoms that help in making the diagnosis, and to determine the most appropriate treatment transsphenoidal evacuation is recommended after appropriate medical and endocrinological evaluation. Over the last several decades, advances in healthcare have led to a significant decrease in morbidity and mortality due to pituitary abscess.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

Disclosures: None.

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