Turkish Journal of Endocrinology and Metabolism, (2004) 3 : 125-127 **CASE REPORT**

# Primary Pituitary Abscess Mimicking an Adenoma: A Rare Entity

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**Pituitary abscesses, rare lesions, may be divided into primary and secondary types. A 26-years-old woman presented with decreasing vision, and headache. Magnetic resonance images (MRI) was suggestive of a sellar tumour. She underwent a transsphenoidal approach to the pituitary gland. After dural opening, purulent material was obtained and no tumour or other associated lesion was detected. It could be mistaken for a solid mass or presumed to represent a pituitary adenoma. This images that emerges is of a rare and enigmatic problem that is commonly misdiagnosed but ordinarily well treated by transsphenoidal surgery. In intracellar, encapsulated and contrast enhancement masses, even if the clinical findings are normal, abscess of the pituitary should be thought.**

**Key words: abcess, adenoma, pitsitay**

## Introduction

Pituitary abscess is rare disorder, but potentially life-threatening disease. A review of the literature vital reveals 121 reported cases. Over a 13-year period, we have operated on 110 patients with pituitary adenoma but, we have operated only one case who had pituitary abscess (1% in all of cases). Preoperative planing and strategy is very important if the preoperative correct diagnosis was made.

## Case Report

A 26-year-old woman presented with mild frontal and orbital headache. She presented with gradually decreasing vision in both eyes during for 1 month and headache for 2 weeks. Her's physical examination was normal. There was no history suggesting of diabetes mellitus or insipudus, and no endocrinological abnormality. An blood chemistry and endocrinologic examinations revealed that the parameters were normal. All endocrinologic values were normal. The vision in the both eyes were 7/24. Visual fields showed bitemporal hemianopia. A fundus examination showed pale optic disc on the both side. An physical examination was normal.

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MRI showed a large lobulated mass arising from the pituitary fossa and extending into the supra-sellar cistern, after contrast injection leading to an initial diagnosis of pituitary adenoma (Fig. 1 and 2). The lesion was isointense on T1-weighted images and isointense to hypointense on T2-weighted images, measuring 34 X 25 mm. The tumour was encasing the optic nerve, optic chiasma, and anterior arterial circulation and no extending into cavernous sinus. After investigating the patient, definitive surgery was planned and transphenoidal surgery was used. A supurative material with cyst was evacuated and abscess wall was subtotally excised. A histopathological examination revealed the material to be suggestive of an infectious process (Fig. 4). We could not detected of primary origin.

Gram staining of the pus showed a fairly large number of pus cells, and gram-positive cocci in pairs, suggestive to poor growth of staphylococcus aureus, sensitive to seftriaxone and erytromycin. Zielh-Neelsen staining was negative. A blood culture showed no organisms. Cell necrosis and polymorphonuclear leukocytes characterized the histologic appearence. Glial fibrillary acide protein was negative and also CD 68 was strongly positive. The patient was given an administration of ceftriaxone and ertyromycin for 4 weeks. Post-operatively MRI showed subtotaly resected abscess wall (Fig. 3). No postoperative complication has occured.

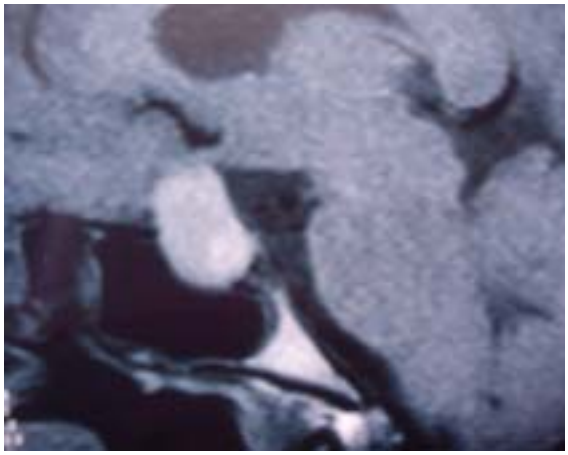

**Figure 1.** Preoperative sagittal view T1-weighted magnetic resonance imaging showing an hyperintense lesion in the sellar region with a wall.

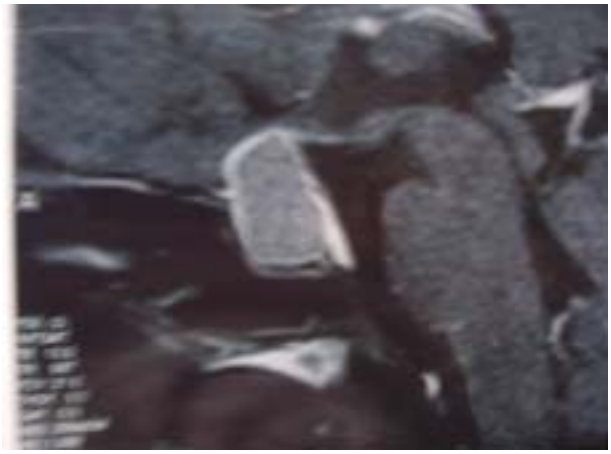

**Figure 2.** Preoperative T1-weighted sagittal section showing with contrast-enhanced images a large intrasellar, ring-enhanced lesion and, no showing the pituitary gland .

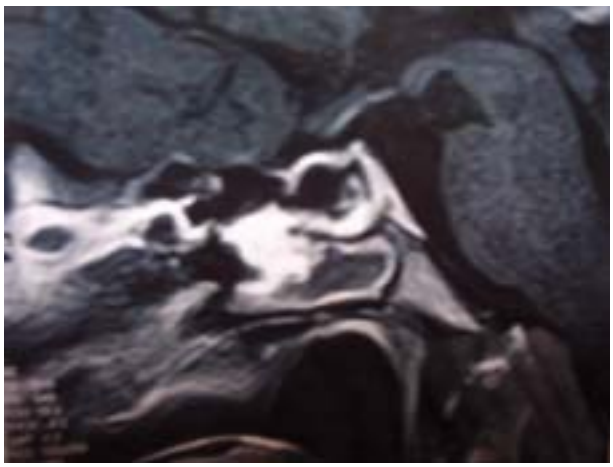

**Figure 3.** Postoperative 1.day MRI with contrast administration, T1-weighted sagittal section view obtained a subtotally resected intrasellar abscess wall (small remnant of the lesion).

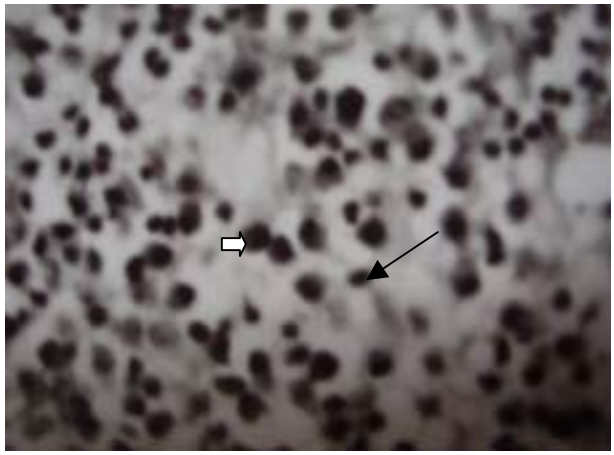

**Figure 4.** Histopathology suggestive of a pituitary abscess with plasma cells (small arrow) and lymphocyte (tall arrow) (HXE, 400).

## Discussion

Primary abscess of pituitary gland is relatively rare. Simmonds described the first case of pituitary abscess in 1914 (1). Since then, only 121 cases have been appeared in the literature. Vates, et al. (2), reported 24 cases of pituitary abscess drawn from a series of more than 3500 pituitary surgeries (0.68%). Over a 13-year period, we have operated on 110 patients with pituitary adenoma but, we have operated only one case who had pituitary abscess (1.08%).

Vates et al (2) suggested that, the most common presenting complaint of the abscesses was headache and male-female ratio was 15/9. The usual clinical features are chronic headache, visual disturbances and symptoms of pituitary insufficiencies, such as diabetes insipidus, which is less common in is association with pituitary adenomas than with abscesses (3-5). A primary abscess can be acute or chronic. The source of infection can be either haematogenous spread or direct extention from meningitis, sphenoid sinusitis, cavernous sinus thrombophlebitis, or a contaminated CSF fistula (3). The usual organisms associated are staphylococci, streptococci, and pneumococci (6). The contamination was not possibilty due to intraoperative sterility. Even prior to the development of MRI, it had been suggested that the presence of diabetes insipidus might be of value in the differential diagnosis of pituitary abscess and adenoma. Diabetes insipidus is present in only 10% of adenomas, but occurs in almost half of patients with abscesses (7). This case not presented with diabetes insipidus. At examination, the common visual abnormalities are

bitemporal hemianopia, ocular movement disorders, and optic atrophy leading to total blindness (8).

The advent of the CT and MR modalities has improved the sensitivity with which pituitary lesions are detected, and have helped to verify the diagnosis of pituitary abscess by demonstrating a ring-enhancing, pituitary lesion. On T2-weighted images, pituitary abscess have a nonspesific appearence, but tend to give high signal. On T1-weighted images, they characteristically have a signal intensity similar to that of brain. This may suggest a solid lesion, such as adenoma, and could dissuade one from considering an abscess in the differential diagnosis. The increased signal of these lesions is probaly due to their high protein content. In this case did not contamined, because the material was supurative and having a smell. In this case, the signal within the lesion were markedly increased on T1-weighted images, suggesting a very high protein content. The typical primary pituitary abscess gives the same or slightly lower signal than brain on T1-weighted images, and could be mistaken for a solid mass or presumed to represent a pituitary adenoma. The pituitary abscess does not invade the cavernous sinus. This feature is important in radiological differential diagnosis. In this case there was no invasion into cavernous sinus.

Antibiotic therapy should be initiated as soon as the diagnosis of pituitary abscess is strongly suspected preoperatively or confirmed during surgery in a patient who exhibits symptoms of sepsis. We initiate antibiotic therapy by using meningitis-level doses of a third generation cephalosporin until a specific organism is identified in cultures, at which time more specific antibiotic therapy is tailored to the sensitivies of the cultured organism. If no microbial culprit is identified, it is left to discretion to the surgeon, in consultan infection disease specialist, whether to continue antibiotic therapy.

A histopathological examination revealed a pitutitary abscess. No tumor or glandular tissue was present.

## Conclusion

A pituitary abscess is a rare entity that can present with a dramatic course suggestive of a central nervous system infection and a pituitary mass, but more often mimics an indolent and routine mass lesion of the pituitary area. Nonetheless, if a patient is suspected of having a pituitary abscess, transsphenoidal evacuation is reccommended after appropiate medical and endocrinological evaluation. If a pituitary abscess is unexpectedly encountered during an operation in a patient in whom a different pituitary disorder has been diagnosed, the surgeon can be confident that the correct intervention was made. Broad-spectrum antibiotic therapy should be started after surgery, and subsequently narrowed or stopped depending on the results of cultures. Early diagnosis, prompt surgery, and correct antibiotic therapy remain the mainstay of treatment. Outcome is excellent, and recurrence is extremely rare.

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