

Intrasellar abscess after transsphenoidal pituitary surgery

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Abstract

Sellar abscess is extremely rare complication that could occur after a transphenoidal surgery (TSS). Here we report 45-year-old female patient with left cheek numbness for one month. The Magnetic resonance imaging (MRI) report suggested a pituitary adenoma. Therefore, transphenoidal surgery was performed. During follow up, the patient complained of headache for few days. Subsequent MRI revealed recurrent or residual pituitary tumor. We attempted to excise the lesion using a transfrontal approach. However, pus in the sellar region was found at operation, and no tumor tissue was identified. After the surgery, the patient received antibiotic therapy and fully recovered. Sellar abscess is a serious condition with a high mortality rate. However, a combination of surgical resection and specific antibiotic therapy seems to be very promising.

Keywords: pituitary adenoma, pituitary surgery, Sellar abscess, transphenoidal surgery

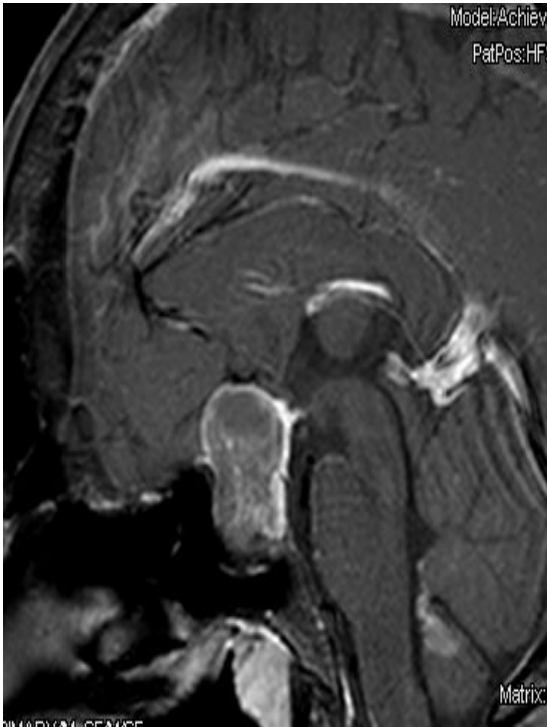
Introduction

Sellar abscess is a rare clinical entity but one with potentially high mortality and morbidity. Preoperative diagnosis of a sellar abscess is difficult, partly because patients with this condition do not commonly show systemic signs of inflammation and also

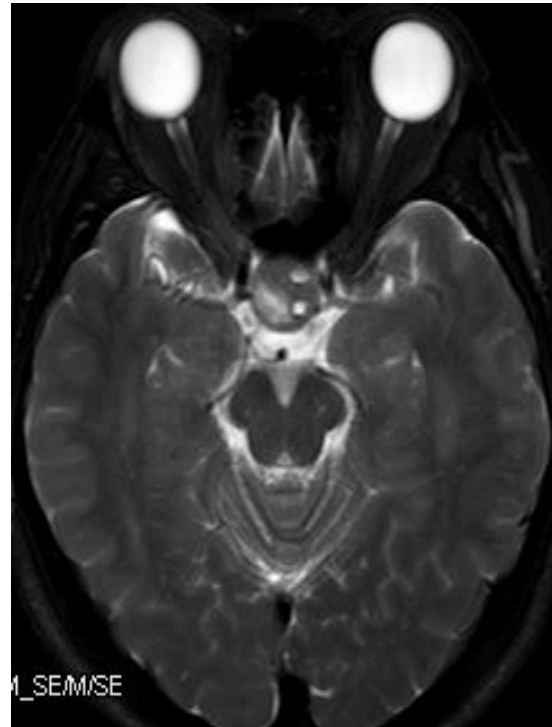
clinical manifestations of sellar abscesses are nonspecific (11). So it may be misdiagnosed as pituitary adenoma. Sellar abscess after TSS operation of pituitary adenoma has high mortality. Early diagnosis and treatment with surgical management and antibiotics are important. Our case report involves a 45-year-old female patient with intrasellar abscess formation after transsphenoidal pituitary surgery.

Case report

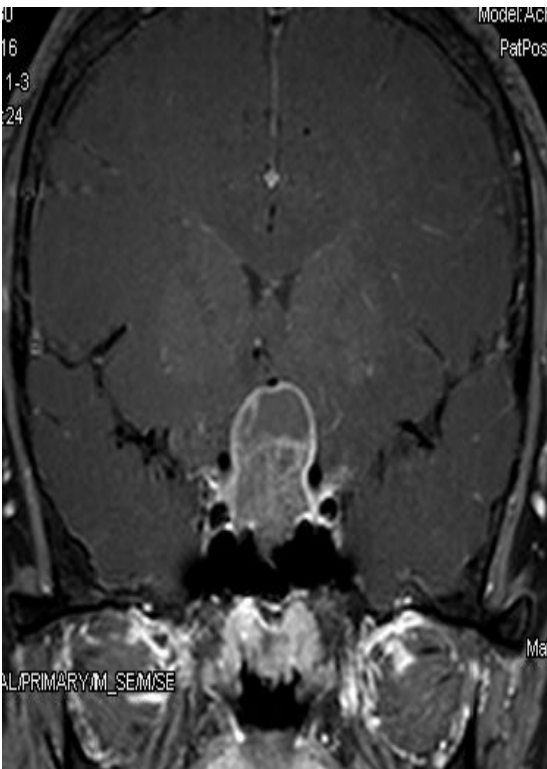
The patient, a 45-year-old woman, had a numb left cheek for one month. There was no blurring of vision, however. Moreover, the patient did not have any complaints of headache, polydipsia, polyphagia, polyuria. On examination, no neurological deficit was detected. On the magnetic resonance imaging (MRI) examination of sellar region demonstrated 2.05x1.84x2.2 cm sellar mass with mixed signal, tearing the diaphragma sellae, had waist-like symptoms, little push bilateral optic nerve (Figure 1). The computed tomography (CT) of the skull base shows: sellar lesions, mostly the pituitary tumor. Patient underwent transsphenoidal surgery (TSS) during which we did not find any significant adhesions in surrounding structures and saddle compartment. Soft, gray tissue was removed without any complication and hemostasis was maintained on the tumor bed.



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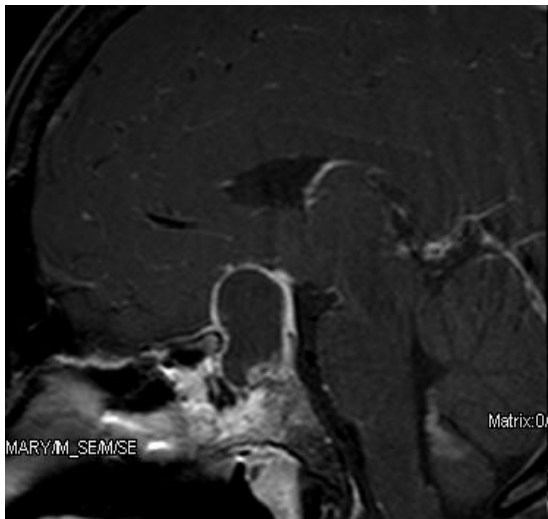


B

Figure 1 MRI brain showing a sellar suprasellar mass lesion hypo-hyperintense with enlargement of sella suggestive of a pituitary macroadenoma

Bone chips fixed to surrounding tissues with acrylic glue were used to pack the sella. The tumor bed and sphenoid sinus were loosely packed with adipose or muscle tissue, mucosa, nasal turbinate bone and collagen sponge to prevent cerebrospinal fluid (CSF) leakage. Histopathological examination revealed pituitary adenoma. The patient had a good recovery postoperatively (Figure 4 A).The patient presented with headache for couple of weeks in the four months of follow up. No abnormality was found on examination, however. Observe the recurrent or residual pituitary tumor in the MRI scan of the head (Figure 2). Thereafter, craniotomy was done and showed that sellar tension was high, filled with milky white turbid pus, no tumor tissue. The purulence remaining in

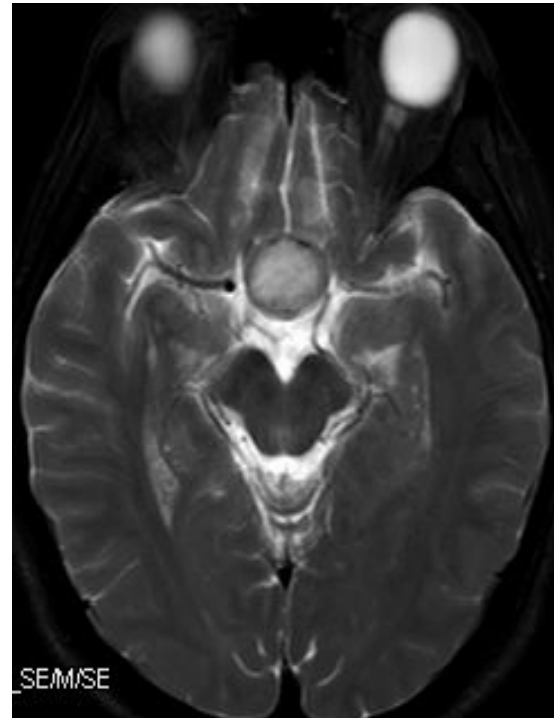
the sinus and sella was evacuated by irrigation and aspiration. Postoperatively patient was managed in the intensive care unit with specific antibiotics, hormonal and fluid therapy. Patient was monitored with CSF study to know the control of infection. Histopathological examination confirmed abscess (Figure 4b). Patient was discharged following a full recovery. No pituitary mass was observed on the follow-up MRI (Figure 3).



A

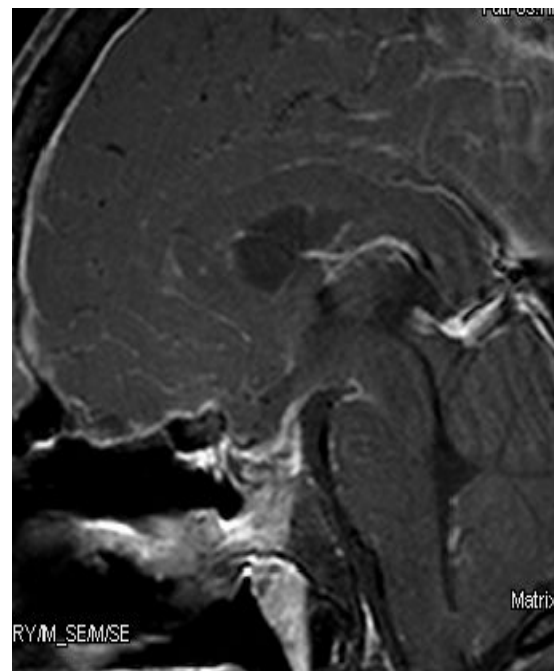


B



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Figure 2 After 4 months of follow up, MRI brain showing a sellar suprasellar mass lesion hypointense with enlargement of sella suggestive of recurrent pituitary macroadenoma or abscess



A

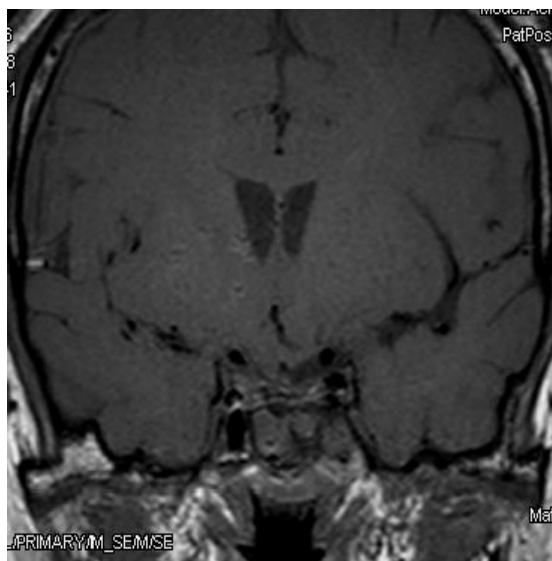
**B**

Figure 3 MRI brain showing no sellar suprasellar mass after second operation

Discussion

The first case of pituitary abscess report was by Heslop in 1848 (3). More than 200 cases of pituitary abscess have subsequently been reported in the literature. To our knowledge, there are only three published reports of intrasellar abscess as a complication of TSS (4, 9, 10). Our case is the fourth case reported in the literature. A sellar abscess is a potentially life threatening disease that is usually misdiagnosed because its presentation is similar to that of a pituitary adenoma. Despite recent improvements in radiological evaluation, making a definite preoperative diagnosis of sellar abscess is difficult. MRI is the best technique for the radiological evaluation. Generally, sellar abscess can be divided into primary and secondary types (2). A primary abscess can spread haematogeneously or by direct extension from meningitis, sphenoid sinusitis, cavernous sinus thrombophlebitis, osteomyelitis or a contaminated CSF fistula (8, 12). And one-third of sellar abscesses are

secondary, arising within pre-existing lesions, such as adenomas, craniopharngiomas and Rathke's cleft cysts (5, 6).

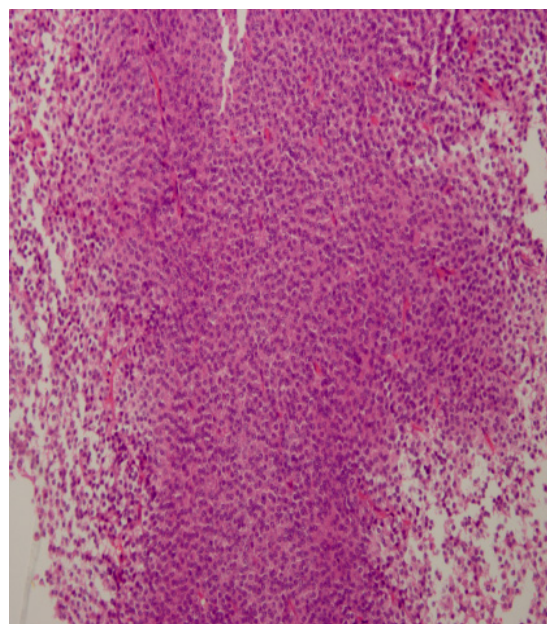
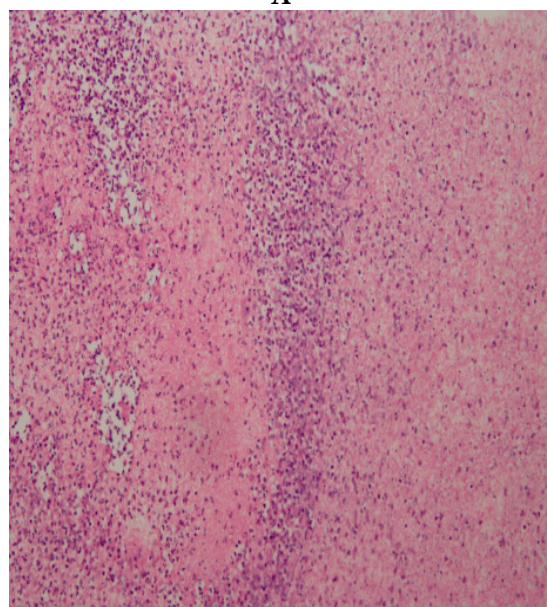
**A****B**

Figure 4 Photomicrograph of the surgical specimen (a) Pituitary adenoma (b) Necrotic foci and abscess formation with neutrophil infiltration (H&E staining; original magnification x20)

In our knowledge, factors leading to abscess development in our case include impaired circulation, areas of necrosis, local immunological impairment or using adipose or muscle tissue during TSS. Surgery can be performed via the transsphenoidal or transcranial approach. The TSS approach is considered to be a better choice to prevent contaminating the CSF and causing meningitis or meningoencephalitis (1, 7). In our case, we preferred craniotomy as we suspected remnants of tumor too. Our patients treated with TSS approach showed favourable outcomes without recurrence.

Conclusion

Sellar abscess is extremely rare complication after TSS with a high mortality rate. An early diagnosis to prompt surgery and initiation of long term use antibiotics is the single best method for treating a sellar abscess.

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