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# Aspergillosis of the sphenoid sinus simulating a pituitary tumor

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**Summary.** Sphenoidal aspergillosis is an unusual cause of sella turcica enlargement. Pituitary abscess secondary to Aspergillus had been reported. In the present case, a woman with sphenoid sinus aspergillosis mimicked a pituitary tumor. This patient survived her infection with intact pituitary function following a transsphenoidal approach. No postoperative amphotericine-B and 5-fluorocytosine were necessary. CT scan revealed a mass occupying the sphenoid sinus extending to the sella turcica. Factors that should alert the clinican to the presence of a sphenoidal and pituitary abscess in a patient with sella turcica enlargement are prior episodes of sinusitis, meningitis and immunosuppression and, as in the present case, hyperglycemia.

**Key words:** Aspergillosis – Pituitary abscess – Transsphenoidal surgery

Aspergillus spores are common in the upper respiratory tract in normal conditions, but in immunosupressed patients infection by aspergillus developes. Viollier [1] reported that in 50% of neoplastic patients the aspergillus sinusitis is present.

Early diagnosis of aspergillus infection is very important because diffuse aspergillus meningoencephalitis is a lethal infection. We report a patient who had sphenoidal aspergillosis with sella turcica enlargement and intact pituitary function. The discussion reviews criteria for recognition and therapy.

## Case report

A 52-year-old woman was admitted to the hospital in September, 1987, for evaluation and management of headaches over a six-month period. She gave a history of diabetes mellitus and multiple upper respiratory tract infections. Physical examination was completely normal as were complete blood count biochemical profile and endocrine function. Blood sugar on admission, was 265 mg/dl.

Skull X-ray films and sella tomography revealed a greatly enlarged sella turcica with erosion of the floor (Fig. 1). CT revealed a large intrasellar mass extending into the sphenoid sinus, eroding through the sellar floor (Figs. 2, 3).

In October, 1987, the patient underwent a transphenoidal exploration of her sella turcica for a presumed pituitary tumour; however a purulent mass with necrotic material was found within the sphenoid sinus, extending into the sella turcica.

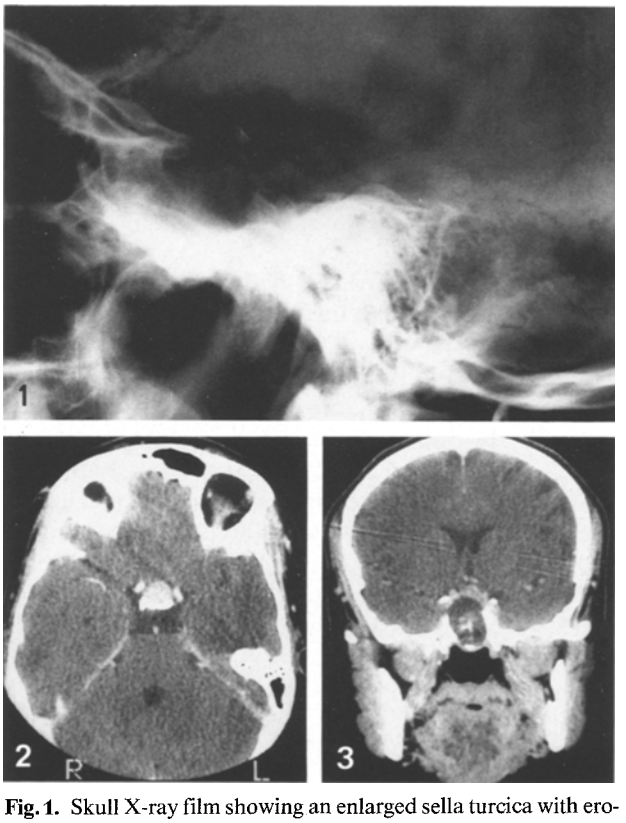


**Fig. 1.** Skull X-ray film showing an enlarged sella turcica with erosion of the floor

**Fig. 2.** Enhanced scan showing an enhancing intrasellar mass, corresponding to the capsule of abscess

**Fig. 3.** Coronal section of the abscess. Contrast-enhanced peripheral rim is apparent

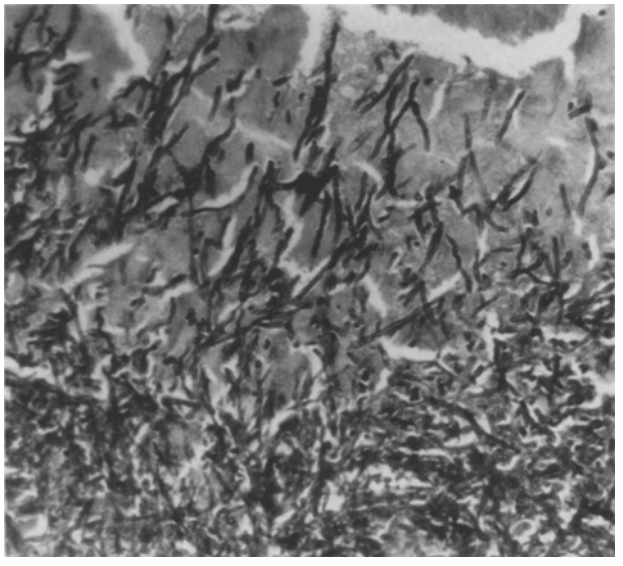

**Fig. 4.** Photomicrograph of the purulent material encountered at surgery showing dichotomous branching hyphae, probably with septa, typical of *Aspergillus*. PAS × 250

Histopathology demonstrated typical aspergillosis (Fig. 4). There were normal pituitary cells, but there was no evidence of pituitary tumour. The material was not cultured.

The postoperative period was characterized by transient diabetes insipidus. No other foci of aspergillosis were found. The patient was discharged on insulin.

During her follow-up period of one year she has shown no recurrence.

## Discussion

A pituitary abscess can be indistinguishable from a pituitary tumour. The sphenoid sinus cyst or abscess progressively expands the sinus and eventually extends into adjacent areas to present; intracranially as a sellar and suprasellar mass. Suspicion of an abscess before surgery is very important, because of the lethal nature of cerebral aspergillosis [4].

In both disorders, patients are likely to present with headache, visual disturbance and endocrine deficiency. Thus, most sphenoid sinus abscesses with extended sellars are diagnosed intraoperatively when the surgeon finds pus or necrotic material rather than tumour. Several features can suggest a pituitary abscess (purulent sinusitis, meningitis ...) but our patient had no evidence of infection.

The communication from sphenoid sinus to sella turcica may also be along vascular pathways as reported by Green [2].

On CT these lesions are most frequently isodence with brain tissue, but a significant number can be less or more dense. Infected lesions may show a rim of enhancement, as in our case. Coronal scanning yields the most accurate information concerning the margins of the mass [3] (Fig. 4).

Fuch [5] reported a similar case without predisposing factors, manifested as a pituitary tumour. Long stay in hospital and immunosuppression are probably important in the aetiology of the infection, as was reported by Walsh et al. [6]. In our case chronic hyperglycemia is thought to have been an important factor.

A transphenoidal operation is the best surgical appraach for sphenoid sinus aspergillosis because it minimizes the likelihood of CSF contamination. Combined amphotericin-B [7] and 5-fluorocytosine or rifampicin has shown evidence of synergism against aspergillus species [8], but, in this case, were not administred.

We conclude that no preoperative diagnostic meneuvers are specific for sphenoidal abscess simulating pituitary tumour; however, the presence in a patient with sella turcica enlargement of prior episodes of sinusitis, meningitis, immunological deficit, hyperglycemia and demonstration on coronal scanning of a rim of enhancement should lead one to suspect the diagnosis of a sphenoidal abscess with invasion of the pituitary gland.

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