Hypothalamo-Pituitary Abscess: A Case Report

Hipatalamo-Pituiter Apse Olgu Sunumu

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Abstract: We present a case of hypothalamo-pituitary abscess of unknown origin. The diagnosis of abscess was made during surgery. The difficulties in diagnosing and managing this entity are stressed.

Key Words: Hypothalamo-pituitary abscess, pituitary abscess, magnetic resonance imaging

Özet: Bu yazıda kaynaı saptanamayan hipotalamo-pituiter apseli bir olgu sunduk. Apse tanısı operasyon sırasında konuldu. Bu olguda tanı ve tedavideki güçlükler vurgulandı.

Anahtar Sözcükler: Hipotalamo-pituiter apse, pituiter apse, manyetik rezonans görüntüleme

INTRODUCTION

Pituitary abscesses are rare. A review of the literature reveals that, although more than 50 cases of pituitary abscess have been reported to date, no more than 30 have been analyzed in detail (1-11). In addition to the rarity of this finding, to our knowledge there are no previous reports of pituitary abscesses that also affect the hypothalamus. Hence, this is the first published case of hypothalamo-pituitary abscess.

CASE REPORT

A 22-year-old woman presented with a 7-month history of bifrontal headaches. She reported having menstrual irregularity and mild polydipsia and polyuria for 6 months prior to admission. She did not have diabetes mellitus, had no known malignancies, no history of drug abuse or blood transfusion, and had had no episodes of meningitis, rhinorrhea, or generalized sepsis. She also denied experiencing any visual abnormalities, and there was no history of head injury.

Physical examination:

The patient was conscious and afebrile. Cranial nerve function was intact, reflexes were normal, and there were no motor or sensory deficits. Ophthalmological examination showed normal visual fields and acuity. There was no papilledema, nor any restriction of extraocular movements.

Laboratory examination:

Routine blood chemistry testing revealed nothing abnormal. All pituitary function tests, except for prolactin level, were normal. The prolactin level was 180 ng/ml.

Radiological examination:

Magnetic resonance imaging (MRI) showed a 3 x 2.5 x 2 cm, heterogeneous, sellar mass with hypothalamic extension. Coronal and sagittal T1-weighted postcontrast images showed a thick

irregular area of peripheral contrast enhancement around a central nonenhanced area. There was marked enlargement of the pituitary stalk (Figures 1a and 1b). Coronal T2-weighted images also showed sellar and hypothalamic components of the mass (Figure 2).

Surgery:

The patient underwent a right pterional craniotomy, and the encapsulated sellar-suprasellar mass was exposed. There was diffuse enlargement of the pituitary stalk, which was pale compared to normal. A 20-gauge needle was inserted into the capsule, and approximately 4 ml of purulent fluid was aspirated. The cavity of the abscess was irrigated with antiseptic solution. A small piece of the capsule was removed. Histopathologic examination of the aspirated abscess contents showed polymorphonuclear leukocytes and cells with pale eosinophilic cytoplasm contained within a

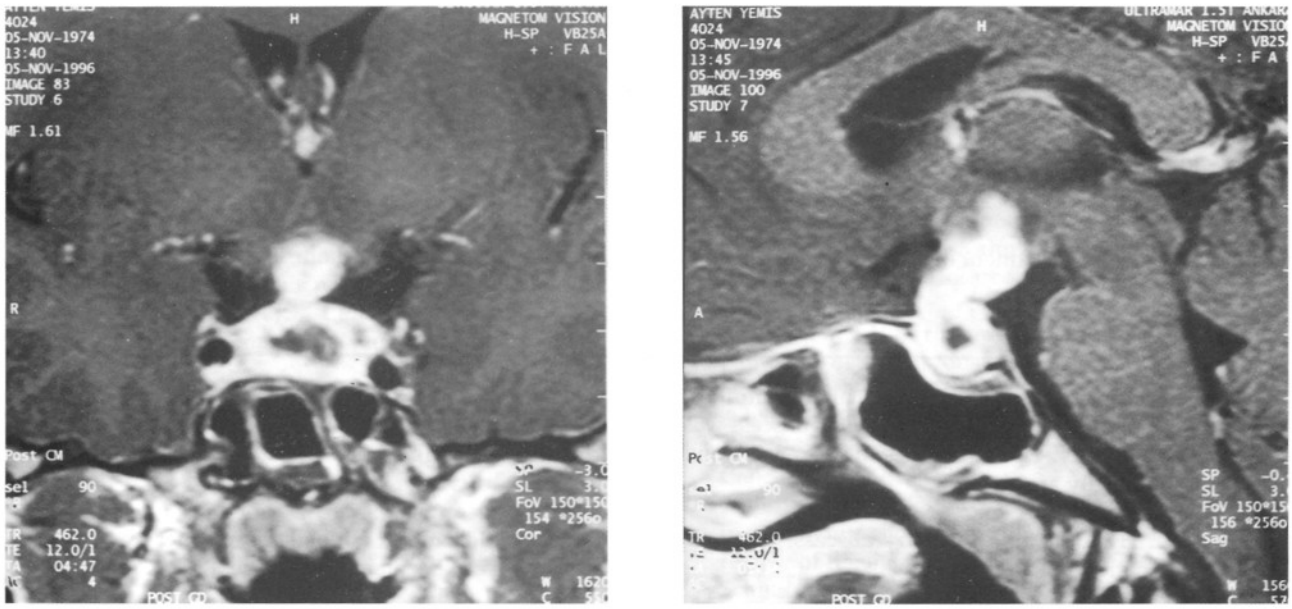

Figure 1 a, b: Coronal and sagittal T1-weighted MRI demonstrates a hyperintense sellar mass containing a hypointense area. Note the extension of the mass to the hypothalamus, and the enlargement of the pituitary stalk.

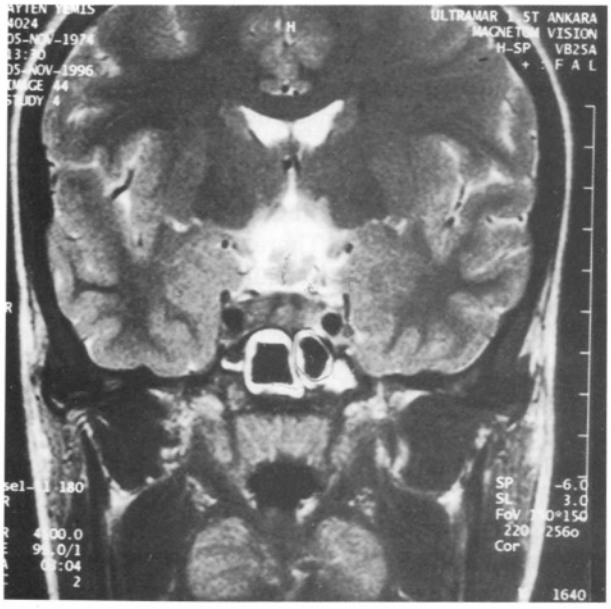

Figure 2: Coronal T2-weighted MRI demonstrates the extension of the mass to the hypothalamus.

fibrous wall (Figure 3). Aerobic and anaerobic cultures of material obtained during surgery produced no growth. As well, special staining for acid-fast bacilli was negative, and fungal culture was also negative.

Postoperative course:

The patient was immediately started on aggressive antibiotic treatment. During the early postoperative period, there was no change in her status, but on the third postoperative day, her temperature rose to 39.5 ºC. She became confused, drowsy, and developed urinary incontinence. Her status continued to deteriorate gradually, and the patient died on the seventh postoperative day.

DISCUSSION

Pituitary abscess is an unusual mass lesion in the sellar region. Such lesions are potentially fatal, and are usually diagnosed unexpectedly during

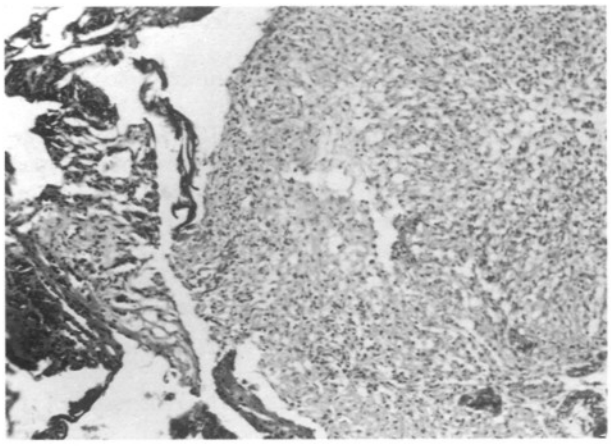

Figure 3: Photomicrograph of the sellar mass showing its fibrous wall surrounding polymorphonuclear leukocytes. (H&E x100)

surgery or at autopsy (6-8). In a review of the reported cases of pituitary abscesses, there was a slightly higher incidence in females than in males (2,5-7).

Similar to many cases of pituitary abscess in the literature, we were unable to find any primary source of infection or causative agent for our case (1,3,6,9). It is known, however, that pituitary abscesses can develop through direct expansion of an adjacent infection in the meninges, the sphenoid sinus, or the cavernous sinus (3,4,9). Some authors have stated that infarcted or necrotic tumor tissue provides a favorable site for the infection to develop (2,4).

The presenting symptoms in patients with pituitary abscess can mimic those seen in individuals with pituitary tumors (1,3,6,9). Headaches, visual disturbances, and endocrinopathy are the most common problems (1,3,4,6,7). The headaches may have been present for months to years, and they are often bifrontal (1,3,6,7). Our patient complained of having had headaches for several months. Menstrual irregularities are also common , as was the case in our patient.

Conventional radiology, pneumoencephalography, and angiography reveal changes consistent with sellar or parasellar masses, but there are no characteristic images pathognomonic for pituitary abscess (11). On high-resolution computed tomography (CT) scan, pituitary abscesses appear as a low-density cystic lesions with marginal enhancement (10,14). However, these CT findings are not specific, as various intrasellar and suprasellar cysts and tumors are similar in appearance (1). Approximately 75% of pituitary macroadenomas are isodense or minimally hyperdense with respect to normal brain on plain CT, and may show ring enhancement with contrast administration if hemorrhage or infarction has occurred (14). Furthermore, pituitary apoplexy may simulate the CT appearance of pituitary abscess (14).

There have been only a few recent reports detailing the MRI appearance of pituitary abscess (1,6,7). On MRI, a pituitary abscess appears as a sellar lesion with an isointense to mildly hypointense signal on T1-weighted sequences, and a high signal intensity on T2-weighted sequences (12). MRI is known to yield a better overall demonstration of the effect of a mass lesion on its neighboring structures (12). Overall, the advantages of MRI for diagnosing sellar region masses include multiplanar capability, excellent contrast resolution with absence of bone-induced artifacts, and visualization of surrounding blood vessels. However, even with the advantages of this technique, MRI characteristics specific to pituitary abscesses have not been published to date. In our case, the tentative diagnosis was macroadenoma with suprasellar extension, and we opted for craniotomy instead of the transsphenoidal route. It is likely that meningeal contamination occurred as a result of the approach we chose, and that this ultimately led to the patient's death on the seventh postoperative day.

In conclusion, pituitary abscess should be considered in the differential diagnosis in patients whose sellar-parasellar mass MRI shows regular or irregular, hypo- or hyperintense areas.

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