Pituitary abscesses. Report of three cases

Hamit Z. Gökalp¹, Haluk Deda¹, Mustafa K. Başkaya¹, Orhan Bulay², and Selim Erekül²

Department of Neurosurgery, ²Department of Pathology, Faculty of Medicine, Ankara University, Turkey

Abstract

Three cases of pituitary abscess are presented. In spite of improvements in radiological evaluation, preoperative diagnosis of pituitary abscess is quite difficult and definite preoperative diagnosis is rare in the literature. In our three cases, diagnosis was made postoperatively. Pituitary abscesses are associated with high mortality and morbidity. When first suspected, prompt antibiotic therapy should be considered. Early operative drainage seems to be an important factor in decreasing this high mortality and morbidity.

Keywords: Computerized tomography, infection, pituitary abscess, pituitary tumor.

1 Introduction

SIMMONDS first described a pituitary abscess in 1914 [11]. It is a rare condition: we have identified only three cases among 1068 pituitary tumors (0.27%) which were operated on in our clinic. Preoperative diagnosis is very difficult in spite of CT scan. Almost all patients with pituitary abscess have visual and endocrine disturbances, most complain of headache. Mortality from sepsis secondary to pituitary abscess was very high before antibiotics. Recently, however, early diagnosis and surgical and aggressive antibiotic treatment has decreased this high mortality.

2 Case reports

Case 1: A 28-year-old woman was admitted to the Department of Infectious Diseases in June 1983 because of severe headache, elevated temperature, and nausea. She had a history of otitis media at 16 years of age and intermittent headaches since nine months. On admission, she was drowsy, had a stiff neck, and a temperature of 38 ºC. Lumbar puncture revealed cloudy CSF with increased pressure, many cells mostly polymorphonuclear, protein 200 mg/dl, glucose 20 mg/dl. Cultures were negative. The patient was treated with high doses of penicillin and chloramphenicol and responded well to the therapy. CSF returned to normal, second cultures were also negative. One month after being admitted to the Department of Infectious Diseases, the patient was transferred to the Neurosurgery Department. 25 days before transferring to our department, she had suffered complete loss of vision on the right eye and CT scan had showed a hypodense intrasellar mass with suprasellar extension. On neurological examination, the patient was alert and oriented. There was complete loss of vision and weakness of lateral rectus on the right eye. Plain lateral X-ray of skull showed an enlargement of sella with erosion of dorsum. A carotid angiogram showed elevation of both A1 segments, which was greater on the right. Repeated laboratory evaluation including electrolytes, complete blood count, and sedimentation rate were normal. Hormonal workup revealed no hormonal deficits.

Right frontal craniotomy was performed. The right optic nerve was elevated by a mass and was covered by thick arachnoid. As we opened the suprachiasmatic cistern, a dark yellow pus exuded from the cystic cavity in the mass. After draining pus, all necrotic material was cleaned...
out, and the cavity was irrigated with antibiotic solution. All cultures were negative. The patient's postoperative course was without complications, and weakness of lateral rectus improved. Postoperatively, she was treated with trimetoprim and sulfametazol. During the early postoperative period no change occurred in visual loss, but six months after the operation she had regained her perception. Histopathological examination showed an abscess wall.

**Case 2:** A 16-year-old woman was admitted to our department in August 1988, because of a one-year history of headaches and ceased menstruation for 9 months. The nasal margins of both optic discs were blurred. There were no focal neurological deficits, loss of vision, or visual field defects. There was a history of sinus disease for one year. Because of this disease she had been under antibiotic therapy for two weeks. Serum prolactin was 56 n.g./ml (normal 1.3–21.0 n.g./ml), serum FSH level was 2.4 micro IU/ml (normal 3–10 micro IU/ml), and serum IH level was 0.6 micro IU/ml (normal 3–15 micro IU/ml). Thyroid function tests were normal as were GH, serum cortisol and oestradiol levels. Plain skull films showed an enlarged and eroded sella turcica. CT scan showed a large sellar mass that extended into the sphenoid sinus and both cavernous sinuses (Figure 1). In other CT slides, there was a small abscess mass in the retropharyngeal region. Right pterional craniotomy was performed. After opening the suprachiasmatic cistern, a congested tumor capsule was exposed. The capsule was bulging out and elevating both optic nerves. After opening the capsule, pus-like material from the mass was drained. The patient's postoperative course was without complications. Postoperatively, she was treated with ceftazidim. Histopathological examination was carried out because curettage had been applied for removal of the material. There was no typical abscess wall sign, but there was degeneration and necrobiotic changes in the pituitary cell and a microabscess sign with polymorphonuclear lymphocytes and necrotic changes. We also detected lymphocytes and an increase in connective tissue. Because these signs suggested an abscess wall. Biopsy showed no evidence of pituitary tumor, Rathke's cleft cyst or any other tumors (Figure 2). All cultures of the sella content were negative.

**Case 3:** A 45-year-old woman, previously well, presented with severe headache localized on the right side which had begun one year before the admission our department. She had five children. There was no a history of menstrual disorders, although she looked like acromegalic.

Clinical examination results were within normal limits. There were no focal neurological deficits. Fundoscopic examination was normal. No meningismus was noted. The blood chemistry tests yielded the following results: ESR 20 mm in the first hour, WBC 9600, RBC 4400000. Thyroid function tests and hormonal findings were within normal range except GH level, which was 16 ng/ml.

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**Figure 1.** Case 2: Coronal CT scan showing a large sellar mass with contrast enhancement.

**Figure 2.** Case 2: Degenerotic and necrobiotic pituitary cells, signs of microabscess, lymphocytes, and increased connective tissue can be seen. Hematoxylin and eosin, X 125.