Abscess formation in a Rathke’s cleft cyst

Case report

THEODORE G. OBENCHAIN, M.D., AND DONALD P. BECKER, M.D.
Department of Surgery/Neurosurgery, Harbor General Hospital, Torrance, and the University of California at Los Angeles, Los Angeles, California

An abscessed Rathke’s cleft cyst was removed in a 50-year-old woman who had had headaches and episodic fever for 3 years and had been on intermittent methotrexate therapy for psoriasis for 4 years. There was clinical and laboratory evidence of panhypopituitarism. Erosion of the sella turcica was present. The patient has remained asymptomatic on replacement therapy. A brief review of abscess formation in the region of the pituitary gland is presented.

KEY WORDS Rathke’s cleft cyst abscess □9 pituitary sella turcica

RATHKE’s cleft cysts and infections in the region of the pituitary gland are both rare entities. To our knowledge there are no previous reports of abscess formation within a Rathke’s cleft cyst.

Case Report

This 50-year-old woman was admitted to the Harbor General Hospital on February 18, 1970, with severe bifrontal headaches of 3 years’ duration. The patient’s headaches lasted from 1 to 4 days and were associated with nausea, vomiting, and generalized malaise. The temperature was elevated during the periods of headache to 102°F but would resolve spontaneously. The patient had noted a sudden cessation of her menses in 1967. Her face had become somewhat puffy and she gained 10 pounds. She had also noticed decrease in axillary and pubic hair over several years. She had been hospitalized elsewhere on four occasions since 1967 for evaluation of the above symptoms, but workup was not revealing. Skull films were normal including the sella turcica (Fig. 1 left). However, on two of these admissions she had a temperature of 106°F. During hospitalization in February, 1970, a lumbar puncture revealed an opening pressure of 190 mm H₂O, 1 white blood cell (WBC) per 100 mm, 25 red blood cells (RBC) per 100 mm, and a protein content of 65 mg%. At this time the skull series again showed a sella turcica of normal size; however, the dorsum sellae was attenuated and thin as was the floor of the sella turcica (Fig. 1 right). The patient was discharged with no medication.

Two weeks before her present admission she complained of episodic blurring of vision in the inferior temporal quadrants bilaterally, associated with the headaches. Since childhood, the patient had also had decreased vision in the left eye previously diagnosed as amblyopia exanopsia. The patient had a 20-year history of psoriasis. For four years she had received methotrexate 25 mg intramuscularly per week. This medication was discontinued in September, 1969, because of the history of febrile episodes. It was felt that her immunosuppressant response may have been altered by the drug. She was treated with prednisone 5 mg p.o.

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twice daily intermittently since that time.

Examination. The patient's temperature was 97°F. She was rather sallow with atrophic skin. There was severe psoriasis of the extremities. Body hair was fine but sparse. The thyroid was normal to palpation. Visual acuity was 20/30 in the right eye and 20/200 in the left. The right visual field was normal; the left was full to a 5 mm test object but constricted to a 2 mm test object in a pattern consistent with the diagnosis of ambylopia exanopsia. The remainder of the neurological examination was normal. Chest films showed bilateral apical scarring consistent with old healed tuberculosis although the pulmonary history was negative for tuberculosis. The protein-bound iodine count (PBI) was 1.1 μg%, the T-4 (Murphy Patte) 1.0 μg%, T-3 22.7, serum cortisol 1.0 μg%, and the 17-ketogenic steroids 2.6 mg/24 hrs. Luteinizing hormone was 6 mU/mL. These tests were consistent with the findings of panhypopituitarism. The skull series showed erosion of the dorsum sellae and the posterior clinoid processes, although the sella turcica itself was not increased in size. The sinuses were normal. Bilateral carotid angiograms showed slight elevation of both anterior cerebral arteries at their origin above the sella turcica. A pneumoencephalogram revealed an intrasellar mass with minimal suprasellar extension. The chiasmatic cistern was displaced superiorly but there was no encroachment on the anterior portion of the third ventricle.

First Operation. On March 2, 1970, the patient underwent a right frontal craniotomy. The chiasm was minimally elevated by the encapsulated intrasellar mass. A No. 22 spinal needle was inserted into the capsule and approximately 2 cc of purulent fluid aspirated. Gram stain showed many white blood cells and a small number of gram-positive cocci. Acid fast stain was negative. Rather than risk an intracranial spread of the infection, the cyst was not opened and the craniotomy was closed in the usual manner. The patient was started on 20 million units of penicillin daily as well as INH 300 mg per day and ethambutal 800 mg per day. Two cultures of the cyst fluid taken intraoperatively grew Staphylococcus epidermidis. Acid-fast cultures revealed no growth.

Second Operation. The patient was maintained on the above medication and 1 month later a transsphenoidal approach to the sella turcica was carried out. An encapsulated mass was encountered, which when incised
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yielded approximately 3 cc of purulent material. The capsule and contents were excised.

Pathological Examination. The capsule contained a fibrous stroma, xanthoma cells, and cystic spaces lined with cuboidal and columnar cells consistent with the findings in a Rathke's cleft cyst (Fig. 2). There were chronic inflammatory cells scattered throughout this tissue as well as throughout the pituitary gland (Fig. 3). Cultures again grew Staph. epidermidis.

Postoperative Course. Recovery was uneventful. The patient has been followed on maintenance thyroid and steroid medications and has done well. There has been no recurrence of the headaches or the fever.

Discussion

Abscess formation within the sella turcica is a rather rare entity. Simonds12 presented seven such cases of which four were the result of spread from sphenoid sinusitis and three were metastatic from septic processes. Henke and Lubarsch6 (as quoted by Asenjo7) stated that chronic hypophyseal inluxation can be a localization of a generalized sepsis, sinusitis, sphenoid osteomyelitis, meningitis, or thrombophlebitis of the cavernous sinus.

There have been three cases of abscess formation within the substance of a pituitary adenoma.1,7,13 All were presumed secondary to an associated sphenoid sinusitis. Two were diagnosed only upon removal of the tumor within which a purulent collection was found. Whalley's case13 presented with fulminating sepsis and coma, leading to death.

Although cysts in the area of the sella turcica are being recognized more often, they have not been reported with coexistent infection. They have been termed "cysts of the pituitary, hypophyseal duct tumors," and "tumors of Rathke's cleft, and "colloid cysts of the pituitary gland." Our patient had the signs and symptoms of a typical pituitary mass lesion. The sella turcica was eroded, and on air study there was minimal extrasellar extension of the mass. The cyst contents of our patient were purulent whereas the contents in the other cases have generally been described as mucinous in character. Microscopically, the cyst wall was similar to those in the other cases, with a fibrous capsule and respiratory epithelium. In addition, our case had purulent contents within the cyst and chronic inflammatory cells in the remnants of the pituitary gland.

That Staph. epidermidis, an organism not ordinarily pathogenic, was responsible for...
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the infection may be related to concomitant immunosuppression with methotrexate. The patient had been started on the medication 1 year prior to the onset of symptoms referable to the pituitary gland.

Another entity somewhat similar to this patient's clinical picture has been described recently. A small number of patients on intermittent methotrexate therapy may develop fever, headaches, dyspnea, and cyanosis. All patients so far described have had acute leukemia and bilateral interstitial pulmonary infiltrates on chest x-ray. This is a monophasic illness, probably with an allergic basis. It usually subsides with discontinuation of the medication. Our patient continued to complain of episodic headaches and fever for 7 months after the methotrexate was discontinued. She has remained free of symptoms since the abscess was excised.

References

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Address reprint requests to: Donald P. Becker, M.D., Department of Surgery, Medical College of Virginia, 1200 East Broad Street, Richmond, Virginia 23219.