Case 7341

pituitary abscess MRI findings
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Patient: 47 years, male

Clinical History:
Unusual sellar mass in a 47-year-old immunocompetent male. Clinical and MRI features.

Imaging Findings:
A 47-year-old immunocompetent man developed deterioration of his general condition with fatigue, anorexia, loss of weight, retro-orbital pain and fever two weeks before admission. Physical examination showed that he was pale, hypotensive and pyrexial (38 °C). Blood chemistry showed the absence of an inflammatory syndrome. Neurological and ophthalmological examinations gave normal results. He was found to have diabetes insipidus with high daily diuresis (around 12 litres per day) and polydipsia. He also presented a reduction of libido. The laboratory evaluation of the pituitary reserve confirmed a total pituitary insufficiency. MRI brain showed an heterogeneous, sellar mass. Sagittal T1 weighted image showed the presence of an intrasellar lesion with low signal intensity (fig1) and heterogeneous high-intensity signal on coronal T2-weighted sequences (Fig2). On T1-weighted sequences after gadolinium injection (Fig3,4,5) showed with peripheral ring-enhancement. The surgical procedure was the treatment of choice. During surgery a large amount of purulent material was removed from an abscess authenticated by the presence of altered leukocytes. Bacteriological examination showed a Corynebacterium minutissimum, responsible for this abscess. The surgical outcome was good. The patient was treated with wide spectrum intravenous antibiotics and substitution hormonal treatment. He was discharged with a complete panhypopituitarism and returned to normal life.

Discussion:
Pituitary abscess implies involvement of the pituitary gland by an infectious process (1). Since the first description by Simmonds in 1914 (2), more than 210 cases have been reported in the medical literature (3). The presenting symptoms can mimic those seen in individuals with pituitary tumors (1, 2, 3). Headaches, visual disturbances, and endocrinopathy are the most common problems (4, 5, 6,). Fever and meningitic syndromes are associated with 60% of the cases. Our patient presented with a combination of diabetes insipidus and hypopituitarism. Pituitary abscesses occur in three settings (4). The first setting is a pre-existing pituitary adenoma, craniopharyngioma or Rathke’s cleft cyst (5). Tumors appear to be vulnerable to infection due to impaired circulation or areas of necrosis (2, 3). The second setting is direct extension or hematogenous spread from sphenoid sinusitis, meningitis, cavernous sinus thrombophlebitis, or contaminated cerebrospinal fluid leakage (1, 2, 5). The present case falls into the third setting, in which abscess occurs in a previously healthy gland with no identified source of infection. When cultures are positive, many sorts of micro-organisms can be seen: Streptococci, Pneumococci, Staphylococci, Neisseria, Escherichia coli, Klebsiella, Proteus, fungi and exceptionally Corynebacterium (4, 6), which was the case in our patient. Pituitary abscess cannot easily be differentiated by imaging from a solid pituitary mass lesion. MRI features of pituitary abscesses were first described in 1989 by Dickob et al (7) and later reviewed extensively by Wolansky et al (8). Like pituitary adenomas, most pituitary abscesses show high signal on T2-weighted images and signal intensity similar to that of surrounding brain on T1-weighted images (7, 8). Contrast-enhanced MRI has been
the most useful method of differentiating pituitary abscess by showing peripheral rim enhancement. Loss of the normal posterior pituitary lobe bright signal on T1-weighted MRI is more common in abscess than in adenoma. The pituitary abscess is easily distinguished on diffusion weighted images from a cystic tumor by their high signal intensity and decreased ADC as compared to low signal intensity areas with high ADC in cases of cystic tumors(10). In our case, the presence of contrast-enhanced out line, and the thickened stalk should suggest the diagnosis. Transsphenoidal drainage of the abscess associated with wide spectrum intravenous antibiotics is the procedure of choice (1, 9).

Differential Diagnosis List: Pituitary abscess

Final Diagnosis: Pituitary abscess

References:

10 - Jati A, Venkatesh SK, Patel K, Malik S.2004

Description: Sellar mass with low-intensity signal on T1 weighted sequence

Origin:
Figure 2

Description: peripheral ring-enhancement after gadolinium injection

Origin:
Description: heterogeneous high-intensity signal on T2

Origin:
Figure 4

Description: peripheral and heterogenous ring-enhancement after gadolinium injection

Origin:
Figure 5

Description: heterogeneous enhancement

Origin: