Imagerie des tuberculomes intra-sellaires : rapport de 2 cas

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Le tuberculome hypophysaire est extrêmement rare. Il peut être confondu avec les tumeurs les plus communes de la selle turcique : les adénomes. Les aspects radiologiques caractéristiques, mais non spécifiques, sont dans la majorité des cas le rehaussement intense sur l’examen TDM injecté et l’épaississement de la tige pituitaire mieux visible à l’IRM. Nous illustrons les aspects radiologiques chez deux patients atteints de tuberculose hypophysaire. Dans ces cas, un diagnostic précis et non invasif est apparu important car un simple traitement médical anti-tuberculeux est efficace et curatif.

Mots-clés : Hypophyse, infection, IRM, tuberculose.

Imaging features of intrasellar tuberculoma: two cases

Hypophyseal tuberculosis is extremely rare. It may be confused with other more common sellar tumors such as adenomas. Characteristic, but not specific, radiological features are in the majority of cases: intense enhancement on contrast CT and thickening of the pituitary stalk better visible on MRI. We describe imaging findings in two patients with pituitary tuberculosis. In these cases an accurate non-invasive diagnosis was found to be important as antituberculous chemotherapy is curative.

Key words: Infection, MRI, pituitary gland, tuberculosis.

INTRODUCTION

Brain tuberculomas are amongst the rarest intracranial space occupying lesions in the developed societies. They commonly involve cerebrum and cerebellum, but can rarely occur in brain stem, basal ganglia, thalamus and sellar or suprasellar regions. In the preCT and preMRI era, their clinical diagnosis could only be presumptive. The imaging features of hypophyseal tuberculosis is non-specific. However, making a more precise diagnosis on the basis of clinical, biological, hormonal, and radiological examinations is of capital importance, as it may lead to a less aggressive, still very efficient, medical therapy in the case of hypophyseal tuberculosis.

The aim of this paper is to describe two cases of sellar tuberculomas associated with tuberculous meningitis. The diagnosis in both cases was established as lesions regressed under standard antituberculosis drug therapy.

CASES REPORTS

Case 1

A 52 year-old man, without previous medical history or drug intake, was admitted for extreme weakness, headache and vomiting. He had a low-grade fever (38,5°C), a meningeal syndrome and a third cranial nerve palsy leading to ptosis and areflexic mydriasis. The basic
Laboratory tests showed an inflammatory syndrome with a rise of erythrocyte sedimentation rate (ESR) (80mm/h), and hyperleucocytosis. There was no clinical or biochemical evidence of endocrine dysfunction. Lumbar puncture was done and lead to the diagnosis of tuberculous meningitis. A CT scan and a MRI of the brain were performed showing an endosellar mass extending to the opto-chiasmatic cistern and a thickening of the pituitary stalk. This mass was homogeneously hypointense on T1 and isointense on T2 weighted sequences. A peripheral contrast enhancement of the lesion was present after gadolinium injection (fig. 1a and 1b). Radiological examinations did not show any primary tuberculous lesion. A sellar tuberculoma was suspected and the patient was treated by a quadruple antituberculosis therapy which was maintained for a total of 18 months. The evolution was marked by the regression of the endosellar mass within the fifth month of treatment and the four-year follow up showed no relapse of the inflammatory syndrome. The patient presents no complaint and pituitary MRI is normal (fig. 2).

Case 2

A 62 year old diabetic man, presented with a first episode of generalized tonic-clonic seizure and a one-month history of a low-grade fever. Clinical examination revealed a lethargic patient with a mental confusion. Laboratory investigations revealed an elevated ESR, a depressed TSH and T4 and a typical cerebrospinal fluid changes suggestive of tuberculosis meningitis. The other endocrine tests didn’t show any abnormality. A CT scan was done showing an intrasellar enhanced lesion and two lesions in temporal and occipital region.

Figure 1: Sagittals sections of T1 weighted MRI pre-Gado (a) and post-Gado (b): showing an enlarged pituitary gland pressing on the chiasma with peripheral enhancement. Thickened pituitary stalk.

Figure 1 : Coupes sagittales d’IRM en pondération T1 sans Gado (a) et après Gado (b) : rehaussement périphérique de la glande hypophysaire élargie qui refoule le chiasma optique. Épaississement de la tige pituitaire.

Figure 2: MRI 18 months after antituberculous therapy. Sagittal section post- Gado T1weighted MRI: Reduction size of pituitary gland and stalk with normal enhancement.

Figure 2 : IRM réalisée 18 mois après le début de traitement antituberculeux. Coupe sagittale pondérée T1 avec Gado : Réduction du volume de la glande hypophysaire et de l’épaississement de la tige avec un rehaussement normal.
that were hypodense with a peripheral enhancement after contrast injection. A brain MRI was done and confirmed the lesions seen on the scan. The brain lesions were hypointense on T1 and moderately hyperintense on T2 weighted sequences with a peripheral enhancement after Gadolinium administration. One temporal and three nodular occipital lesions were also found (fig. 3). The sellar mass was typically associated with a thickened pituitary stalk (fig. 4a and 4b). Based on the clinical features, the biological result and imaging findings, a preliminary diagnosis of brain and pituitary tuberculosis associated with a tuberculous meningitis was made. The patient was started on anti-tuberculous chemotherapy. Within two months, a significant improvement of the symptoms was noted and after three months, a follow-up MRI showed a partial resolution of these lesions.

**DISCUSSION**

Despite a relatively high prevalence of intracranial tuberculomas in developing countries (0,15-4%) [1, 2, 6], tuberculomas of the sellar region are extremely uncommon and account for less than 0,1% of all intra-cranial tumors [4]. During the primary stage of pulmonary tuberculosis, dissemination of the tuberculous bacilli may result in foci in the pituitary gland. Secondary reactivation of these tuberculous foci results in clinically manifest pituitary tuberculosis. Focal lesions and tubercular abscesses occur uncommonly. Pituitary tuberculosis may also occur from local spread of the disease and has been associated with tuberculous meningitis [7]. Usually pituitary tuberculosis mimics clinically and radiologically a non functional sellar neoplasm. It may lead to chiasmatic compression or hypopituitarism consequently to pituitary destruction or mass effect. The headache is the
most common symptom [2], the pituitary dysfunction is uncommon. In our case reports the first patient has a headache and no pituitary dysfunction, the second presented with secondary hypothyroidism. The review of the literature revealed a female predominance and even an hypopituitarism disproportional to the lesion size [4, 8]. Imaging features of this pathology is very variable and may lead to the diagnosis of pituitary adenoma in particular when an increased level of prolactin, due to pituitary stalk compression, is observed. Pituitary apoplexy, subarachnoidal haemorrhage and thickening of the dura at the sellar floor are other features of intrasellar granulomas [1]. On MRI the pituitary lesion may appear isointense or hypointense on T1 and hyperintense on T2. They may occasionally appear hyperintense on T1 due to high protein content [8]. These signal characteristics are non specific and overlap those of pituitary adenomas. A peripheral contrast enhancement of the lesion after Gadolinium administration was sometimes described but it is not constant nor specific, in fact it could be observed in all pituitary abscesses due to tuberculosis or other germs [3, 6, 8]. The infundibular thickening in association with the focal pituitary lesion has also been considered fairly suggestive [5, 9], though not specific for tuberculosis by most of the authors. Most of these authors consider it indicative of an inflammatory disorder such as tuberculosis, sarcoidosis, Langerhans cell granulomatosis, and lymphocytic hypophysitis [4, 8]. In our two cases we found an intrasellar mass hypointense on T1 and hyperintense on T2 weighted sequences associated with a thickened pituitary stalk and an enhancement after contrast MRI images. The association with a tuberculous meningitis in the first case and tuberculous meningitis and cerebral tuberculomas (temporal and occipital) in the second case lead to the diagnosis of hypophyseal tuberculosis. The establishment of this diagnosis avoid the surgical treatement which is not efficient in these cases. Our patients were treated by antituberculosis chemotherapy and the evolution was marqued by the regression of the lesions. This good outcome confirmed the diagnosis of tuberculosis in the two cases. In fact, even the certain diagnosis is histopathological [3, 4], in the most reported cases, the diagnosis was presumptive and based upon the other supportive clinical data and mainly the presence of typical cerebrospinal fluid changes or systemic tuberculosis. However, in developing countries with high prevalence of intracranial tuberculomas, and because of the great polymorphism of the CT and MRI features of intrasellar tuberculomas [4], this diagnosis must be considered in front of non secreting adenomas, especially when associated with dural thickening of the hypophyseal stalk. The common challenge for the clinician and radiologic physician is to determine which patient is likely to have tuberculoma and thus be treated medically, and which one is likely to have another type of lesion in whom the surgically treatement is indicated.

REFERENCES