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CASE REPORT

Composite Pituitary Adenoma and Intrasellar Tuberculoma: Report of a Rare Case

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Tuberculous involvement of the pituitary gland is rare. We report a unique case of a composite lesion consisting of pituitary adenoma and intrasellar tuberculoma. A 24-year-old lady presented with features of acromegaly and amenorrhea. Serum growth hormone levels were found to be raised. Radiological investigations were consistent with a pituitary adenoma. Decompression of the lesion was done through trans-sphenoidal approach. Histological examination revealed a growth hormone secreting pituitary adenoma in association with a granulomatous lesion suggesting of pituitary tuberculoma. No other evidence of tuberculosis was found in the brain or spinal cord. This type of dual pathology has been reported only once in the earlier literature. (Pathology Oncology Research Vol 7, No 1, 74–76, 2001)

Keywords: adenoma, endocrine, pituitary gland, sella, tuberculoma

Introduction

Intracranial tuberculomas constitute 0.15 to 4% of all intracranial space occupying lesions[6,12] but used to account for 30-50% of intracranial space occupying lesions before the advent of antitubercular chemotherapy.[5] Isolated intrasellar tuberculomas are extremely uncommon. Coleman et al[4] described the first case of intrasellar tuberculoma and since then 16 cases have been reported in the English literature.[1,7-11,13-16,18] excluding our own series of 18 cases,[17] of which almost half are from India.[11,15,18] Recently Gazioglu et al[10] reported a case of silent pituitary tuberculoma associated with pituitary adenoma. We report a rare case of intrasellar tuberculoma associated with a pituitary adenoma.

Case History

A 24-year-old lady presented with complaints of headache and heaviness of the head for 4 years, amenorrhoea for 3 years and hoarseness of voice along with coarse facial features for 2 years. There was no history of fever, cough or weight loss. She was non-hypertensive and non-diabetic. Physical examination revealed acromegalic features. In addition, three submandibular lymph nodes were palpable which were about 1 cm. in size and discrete. Investigation profile revealed normal hematological parameters and serum chemistry. Fasting blood sugar was 75 mg./dl. Cerebrospinal fluid cytology and biochemistry showed no abnormality. Hormonal assay revealed normal levels of T3, T4 and TSH, but level of growth hormone was raised (52 ng/ml, normal 0-7 ng/ml).

X-Ray chest was normal and X-Ray head showed enlarged sella. Contrast enhanced computerised tomography of head revealed a large sellar and suprasellar mass with cavernous sinus invasion (*Figure 1*). There was encasement of the internal carotid artery and sellar floor was eroded. No other meningeal or parenchymal lesion was identified in the CT of the head. MRI scan was not done. A pre-operative diagnosis of pituitary adenoma was made and trans-sphenoidal excision of the lesion was done.

Microscopic examination

Tissue was fixed in 10% buffered formalin, routinely processed and paraffin embedded. Five micron thick sections were cut and hematoxylin and eosin (H&E) staining done. Immunohistochemistry was done by using antibod-

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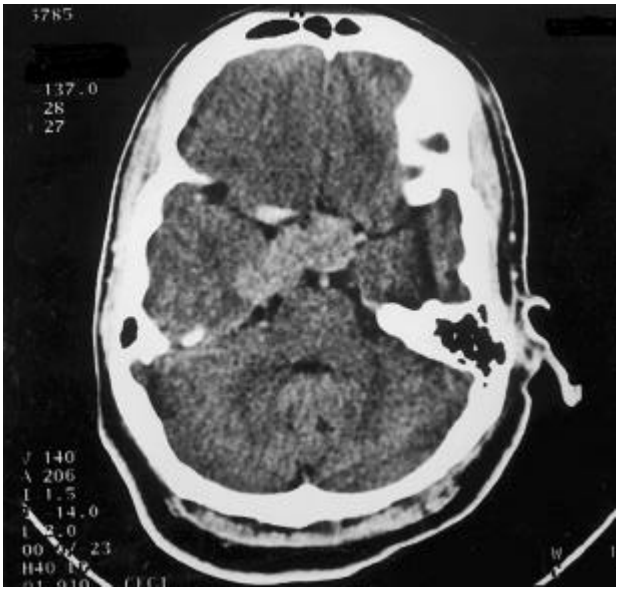

Figure 1. CECT head (axial image) showing hyperdense sellar and suprasellar mass with lobulated margins and extension into right parasellar region.

ies against Growth hormone (GH dilution 1:200), prolactin (PRL dilution 1:200) and ACTH (dilution 1:100) from M/s Dako Patt, Denmark. Special stains (Ziehl-Nielsen and Silver methanamine) for acid fast bacilli (AFB) and fungus were also done.

Examination of the H&E sections revealed a lesion with features of pituitary adenoma consisting of sheets of round to polygonal cells with moderate to abundant eosinophilic cytoplasm (*Figure 2*). The cellular outlines were distinct and nuclei were hyperchromatic to vesicular with occasional mitosis. In addition, there was another lesion comprising of non-necrotizing as well as necrotizing granulomas with central areas of necrosis surrounded by epithelioid macrophages, lymphocytes, plasma cells and Langhans' giant cells (*Figure 2*). No eosinophils were identified. This granulomatous inflammation was seen to be closely admixed with the adenoma component as well as extending into part of the surrounding normal pituitary gland included in surgical specimen. Special stains revealed no acid fast bacilli, fungus or parasite. The adenoma component was positive for GH (*Figure 3*) but negative for PRL and ACTH.

A final diagnosis of growth hormone secreting adenoma with intrasellar tuberculoma was made. Fine needle aspiration cytology done from submandibular lymphnodes and stained with Giemsa revealed granulomatous inflammation and stain for AFB was negative. ELISA for HIV was negative.

Follow Up

She received four drug antitubercular (ATT) regimen comprising of Isoniazid, Rifampicin, Ethambutol and Pyrizinamide for 6 months. She tolerated the ATT drugs well; and cervical lymph nodes regressed in size. After ATT she received radiotherapy for pituitary adenoma. At 1.5 year follow up she was doing well and there was no evidence of any recurrence or metastasis.

Discussion

Incidence of intracranial tuberculomas has decreased with the advent of antitubercular chemotherapy and improved socio-economic conditions. However 20% of intracranial space occupying lesions in India are still tuberculomas with 50% occurring in children and 75% below the age of 25 years.[2] Isolated intrasellar tuberculomas are, however, extremely uncommon and only 16 cases have been reported in the English literature and 7 of which are from India.[11,15,18] During a period of 15 years (1984 to 1999) in the Department of Pathology of our Institute 17 cases of intrasellar tuberculomas (including the case under discussion) and 1140 pituitary adenomas have been diag-

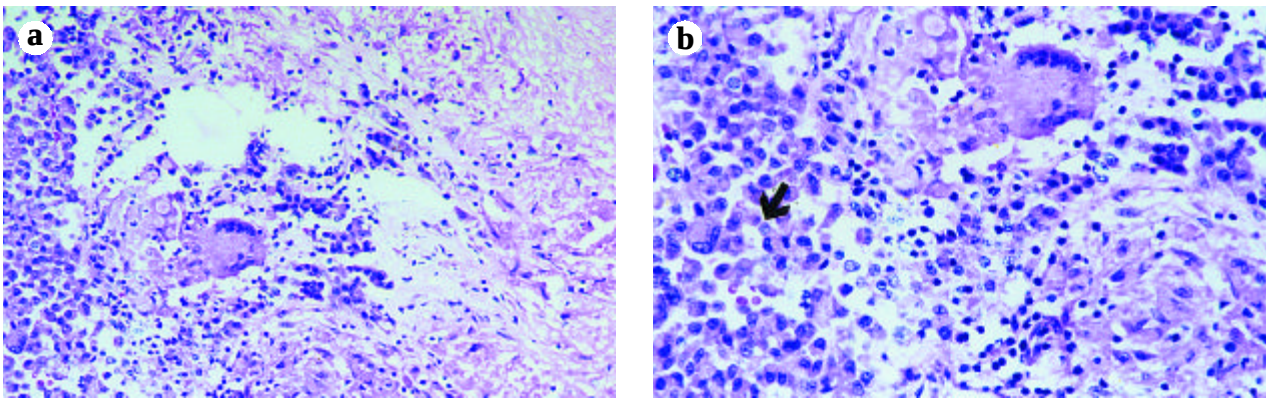

Figure 2. (a,b) Photomicrographs showing necrotising granulomatous reaction with Langhan's type of giant cells. A part of pituitary adenoma (arrow) is also included (a, H&E x100; b, x200)

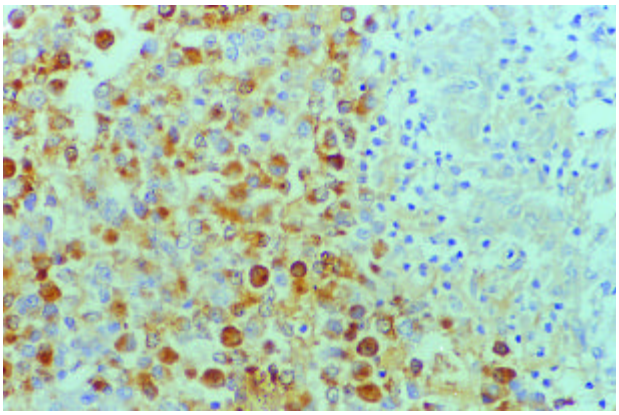

Figure 3. Immunohistochemical staining showing adenoma cells to be positive for growth hormone. A part of pituitary adenoma is also included in the photomicrograph (X 200)

nosed.[17] But combination of these two lesions has been observed in one case only and to the best of our knowledge has been reported only once in the literature.[10]

The reported female preponderance and young age for intrasellar tuberculomas is also observed in the present case. Pituitary tuberculosis is observed in relatively healthy individuals. Clinically this patient presented with acromegalic features which was further confirmed by hormonal assay. Radiologically, this lesion was contrast enhancing and showed extension into suprasellar region and sphenoid sinus. On the other hand, intrasellar tuberculomas are generally more contrast enhancing as compared to pituitary adenomas on CT scan. Only radiological feature suggestive of intrasellar tuberculoma is thickening of pituitary stalk on MRI scan.[13,15] However, this feature may be seen in other inflammatory conditions like sarcoidosis and syphilis. MRI scan was not done in this case.

Microscopically, other differential diagnoses considered were sarcoidosis, syphilis and giant cell hypophysitis. In the absence of other clinical features, possibilities of sarcoidosis and syphilis were ruled out. Moreover necrotising granulomatous inflammation is more suggestive of tuberculoma. Giant cell granuloma of the pituitary gland mimics pituitary adenoma. It commonly occurs in young adults with female predilection and is not associated with pregnancy. Morphologically it is characterised by non-necrotising granulomatous inflammation and special stains and culture fails to identify causative organism. However, in the present case althongh there was necrotising granulomatous inflammation, acid fast bacilli could not be demonstrated in this lesion, as has also been reported in the literature[14]. Moreover, FNAC of the submandibular lymph node, revealed granulomatous inflammation which further supports the diagnosis of tuberculosis.

The endonasal trans-sphenoidal approach is the preferred one for dealing with sellar tuberculoma because it avoids CSF contamination. Antitubercular therapy is recommended for 3 to 18 months[8,11,15] and this patient has been put on ATT for 6 months. Coexistence of these two lesions though very rare, may be incidental owing to the high incidence of tuberculosis in India. Therefore, there may not be any etiological correlation between these two lesions. However, this finding may become more frequent especially with the recent increase in the incidence of HIV infection.

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