Primary pituitary tuberculosis: A rare clinical entity

Tuberculosis is an infectious disease that has been a cause of major public health issue for centuries. The disease typically affects the lungs but can also affect other sites.[1] Primary pituitary tuberculosis is an extremely rare disease.[2] Clinically it may present with visual loss, headache, seizure, hormonal abnormalities, or with cranial nerve palsies.[3] The majority of cases are misdiagnosed as adenoma with postoperative histopathology showing infective aetiology.[4] Therefore, histopathological diagnosis is essential irrespective of the clinical presentation and radiological findings.[5] We here present a rare case of isolated pituitary tuberculosis. A 42-year-old male presented with the complaints of headache and pain in eye along with partial loss of vision.

Ophthalmological examination done showed impaired vision with bitemporal hemianopia in both eyes. MRI brain showed an intrasellar, solid mass, with suprasellar cystic component measuring 19.7 × 10.7 × 16.4 mm. The pituitary gland, including the neurohypophysis and pituitary infundibulum, is not seen separately. The superior pole of mass was abutting the optic chiasma, which is draped over it without any intracavernous extension [Figure 1]. The X-ray of chest showed no significant pleuroparenchymal lesion. Blood investigations showed Hb 14.5 g/dL, TLC 6,990 cells/mm^3, platelet count, and 3.1 lakh cells/mm^3, and liver and kidney function tests were within normal limits. Entire hormonal profile was checked that showed S.FSH- 3.15 mIU/mL, LH 0.67 mIU/mL, prolactin 5.66 ng/mL, cortisol 3.24 µg/dL, TSH 0.18 µIU/dL. Patient underwent transsphenoidal excision of pituitary mass lesion, biopsy of which reveals multiple epithelioid granuloma comprising foci of caseous necrosis surrounded by epithelioid histiocytes, lymphomononuclear infiltrate, and numerous Langhans giant cells [Figure 2]. Acid fast bacilli (AFB) was not seen. The patient started on 4 drugs antitubercular regimen comprising rifampicin, isoniazid, streptomycin, and pyrazinamide as per body weight. Apart from standard antitubercular treatment (ATT) regimen, he was started on thyroid hormone as well as steroids. Presently, the patient is in OPD follow-up and doing fine.

Among all intracranial tumours, intracranial tuberculomas account for 0.15–4%.[6] In the absence of pulmonary TB or other organ involvement, the primary pituitary TB is a very uncommon disease.[7] Incidence and prevalence of primary pituitary tuberculosis is not known. Only few case reports can be found after a thorough literature review. Till 2020 globally, 106 cases had been reported of isolated pituitary tuberculosis. The age ranged from 5 to 69 years with female: male ratio being 2.55:1.[7] Pituitary adenomas comprises the common aetiology in the sellar region, but unusual nonadenohypophyseal lesions and inflammatory pathologies must be considered in the differential diagnosis of a sellar mass.[8] Pathogenesis of TB bacilli spreading to the pituitary gland without apparent involvement of other body organs remains unclear. An analysis of 54 reported cases of pituitary tuberculosis by K. Sunil *et al*. revealed that headache is the most common presenting symptom, followed by visual symptoms.[9] Endocrine symptoms such as galactorrhoea and amenorrhea have been reported in females. Polyuria and polydipsia may also be present.[10] MRI is the first-line diagnostic modality and shows a cystic-solid mass in the sellar and suprasellar region isointense on T1 and T2W images with heterogeneous areas and ring enhancement on contrast. Possible thickening of the pituitary stalk and enhancement of the surrounding dura have also been described. The differential diagnosis of cystic-solid mass in the sellar lesions includes carcinoma, adenoma, neurocysticercosis, pyogenic abscess, Rathkes cleft cyst, or a craniopharyngioma. Pituitary tuberculomas can be seen in contrast MRI scan as multiple coalescing lesions and the normal pituitary gland is seen separately as a rim.[4] Pituitary adenoma was the commonest misdiagnosis for pituitary TB reported in the literature, and, therefore, histological confirmation is the main diagnostic modality.[2] The transsphenoidal approach was the preferred route of surgery, mainly used for diagnosis confirmation and decompression of adjacent structures without contaminating of organisms into intracranial structures as compared to transcranial approach.[11] The histopathological examination reveals epithelioid cell granulomas, Langhans giant cells, and occasionally caseous necrosis can be appreciated.[10] In our case, endonasal transsphenoidal excision of pituitary lesion was done, biopsy of which showed granulomatous inflammation with necrotic changes. Polymerization chain reaction (PCR) technique had been performed successfully in cerebrospinal fluid (CSF) or pathological specimen to detect mycobacterium tuberculosis in some cases.[9] Antitubercular drugs are the mainstay of treatment. Combination of bactericidal drugs, such as isoniazid, rifampin, pyrazinamide, and streptomycin, which penetrate effectively the blood brain barrier, should be prescribed. Various regimens with a treatment duration varying for 9–24 months had been used. A significant reduction in size after treatment has been reported as early as 2 months, usually with complete resolution of sellar mass at the end of the regimen.[10]

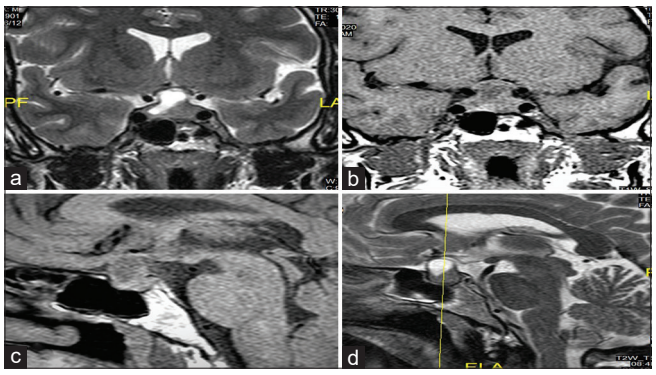

Figure 1: (a-d) MRI brain which showed an intrasellar, solid mass, with suprasellar cystic component

Declaration of patient consent

The authors certify that they have obtained all appropriate

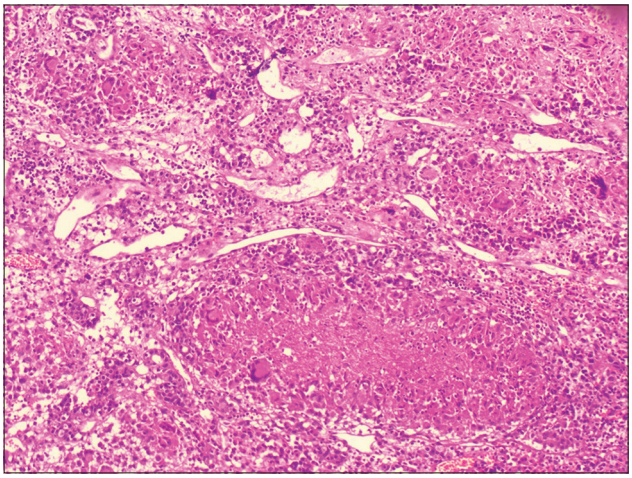

Figure 2: HPE of pituitary mass lesion showing multiple epithelioid granuloma comprising of foci of caseous necrosis surrounded by epithelioid histiocytes, lymhomononuclear infiltrate and numerous Langhans giant cells

patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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