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CASE REPORT

DISSEMINATED TUBERCULOSIS: A DIAGNOSTICS DILEMMA CASE REPORT

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ABSTRACT

Tuberculosis typically in majority of cases affects the lungs. Extrapulmonary tuberculosis affecting the bone is usually limited to the long bones and vertebral bodies. Rarely, does a case of tuberculosis affect the oro-fascial structures. We present a case of a 14 year old male child who presented with progressive swelling of the right maxilla with constitutional symptoms of evening rise of temperature and weight loss. On imaging it appeared to be more suggestive of malignant involvement but was confirmed to be tuberculous osteomyelitis of the maxilla after excision biopsy. Multiple foci in the brain, abdomen and various groups of lymph nodes were also found. The patient was started on treatment and followed up.

INTRODUCTION

Tuberculosis is an endemic disease that is prevalent in Asia and Africa. In India it is rampant disease with an estimated incidence of 2.2 million cases of tuberculosis out of a global incidence of 8.1 million. (Global Tuberculosis Control 2012)So prevalent is the disease that an estimated 40 % of the Indian population is thought to be infected with Tuberculous bacteria with a vast majority having latent rather than active tuberculosis. Tuberculosis is of two types mainly pulmonary and extra-pulmonary with majority being the pulmonary type. Extrapulmonary tuberculosis is rare, occurring in 10 to 15% of all cases. (Memon and Khushk, 2003) Extrapulonary tuberuculosis has various subtypes with the disease affecting various other tissues like the pleura, lymph nodes, bones, central nervous system mainly the meninges, and the urogenital system. Tuberculous osteomyelitis commonly involves the spine, hips, knees and ankle. The involvement of flat bones is a very uncommon presentation. Diagnostically or ofascial tuberculosis is a challenge as it can easily be mistaken for an infective abscess or neoplastic disease. The disseminated tuberculosis, defined as having more than one focus or progressive hematogenous spread is reported in 38% of cases. (Ayegnon *et al.,* 2006) It usually, affects young children or the elderly or immune compromised individuals. Challenges in diagnoses are due to the atypical presentation of patients.

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In the case presented to us, although the initial presentation was of a maxillary swelling, which after a thorough work up was diagnosed with disseminated Koch's disease, the initial clinical picture along with the findings of the CT scan were more indicative of neoplastic disease mainly suggestive of olfactory neuroblastoma.

Case Report

A 14 year old male child came to the out-patient department with chief complaints of a progressive swelling over the right maxilla since the past 3 months. He also reported having a low grade fever associated with weight loss, appetite loss and headache. He reports the swelling progressively increased to reach its present dimensions. Patient denies any history of trauma to the face, cough, breathlessness, and difficulty chewing or abdominal pain. The patient also denies any past history of tuberculosis, diabetes mellitus or repeated infections. A family history revealed a positive history of tuberculosis in the mother, who reports having 3 episodes of tuberculosis, with the last episode 2 years back associated with an episode of pleural effusion. On examination, all vitals were stable. Local examination revealed a 3 cm X 3 cm firm swelling over the maxilla, non-tender, non-erythematous and no warmth on palpation. Bilateral supraclavicular lymph nodes, right femoral and right inguinal lymph nodes were all enlarged. Examinations of systems were within normal limits.

The patient at the time of admission presented with a CT scan of the paranasal sinuses and neck, which revealed a 2 cm X 2.5 cm X 3.3 cm (APX TRX SI) sized enhancing soft tissue lesion in the frontal lobe in the midline causing erosive changes in the cribriform plate and the lateral walls of ethmoid sinuses with extension into nasal cavity. A smaller peripherally enhancing 5 to 10 mm sized nodular satellite lesions adjacent to it in the right frontal lobe with perifocal oedema was also seen. This was suggestive of aggressive neoplastic/infective etiology more specifically suggestive of olfactory neuroblastoma.

The scan also revealed a 3 cm X 1.9 cm sized peripherally enhancing hypodensed bilobed lesion in the right maxillary region in the subcutaneous plane causing erosive changes in the right zygomatic bone with periosteal reaction in the adjacent maxillary bone with deeper extension in the retromaxillary region involving the right masseter muscle. Similar 1.5 X 1.3 cm sized cystic lesion with central calcification in the left upper alveolus. An Ill-defined expansile lesion showing ground glass haziness in left maxillary bone. Multiple 1 to 2 cm sized bilateral level I and level II Lymph nodes. Multiple 1 to 1.5 cm sized non necrotic supraclavicular lymph nodes.

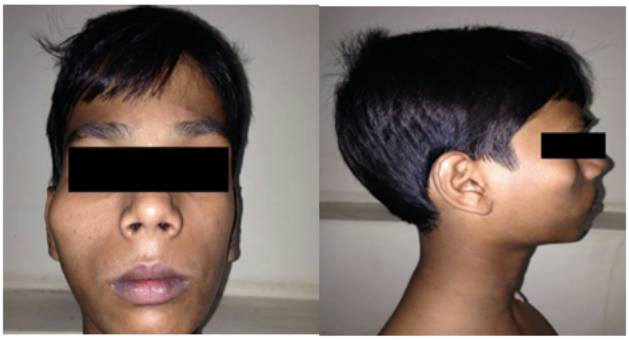
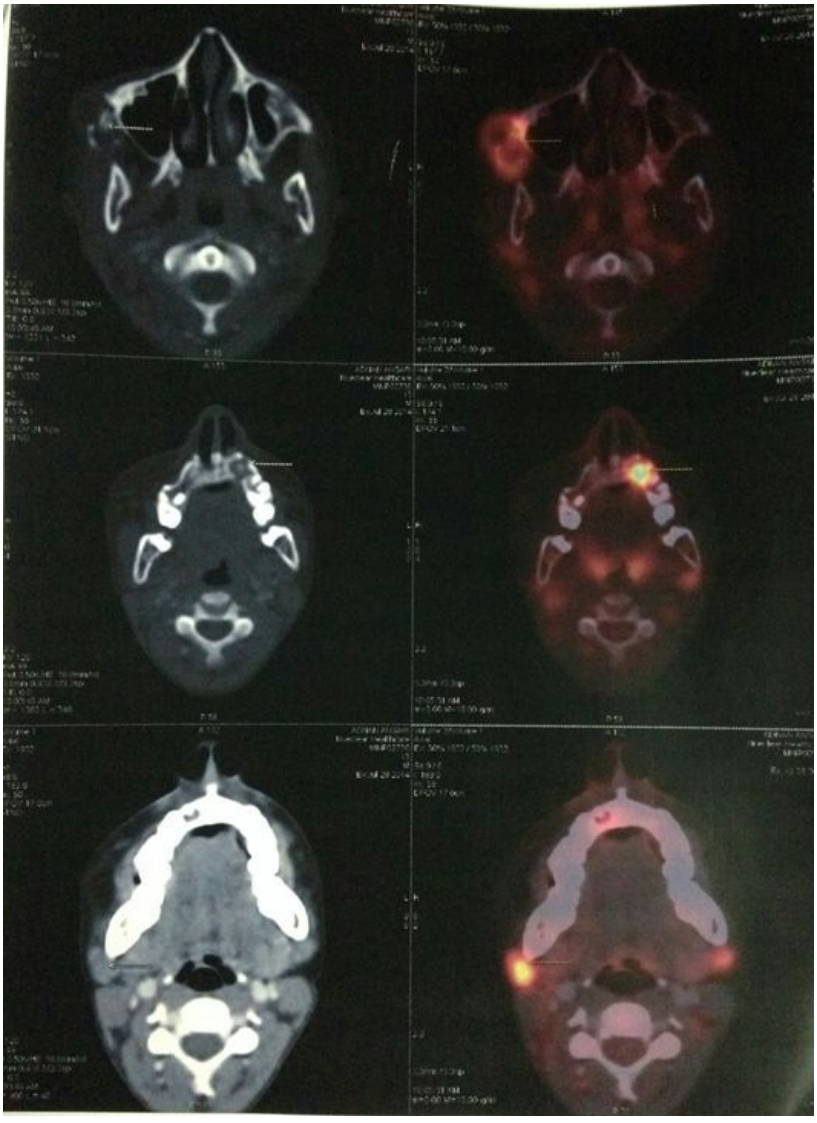


Fig. a & b – right maxillary swelling



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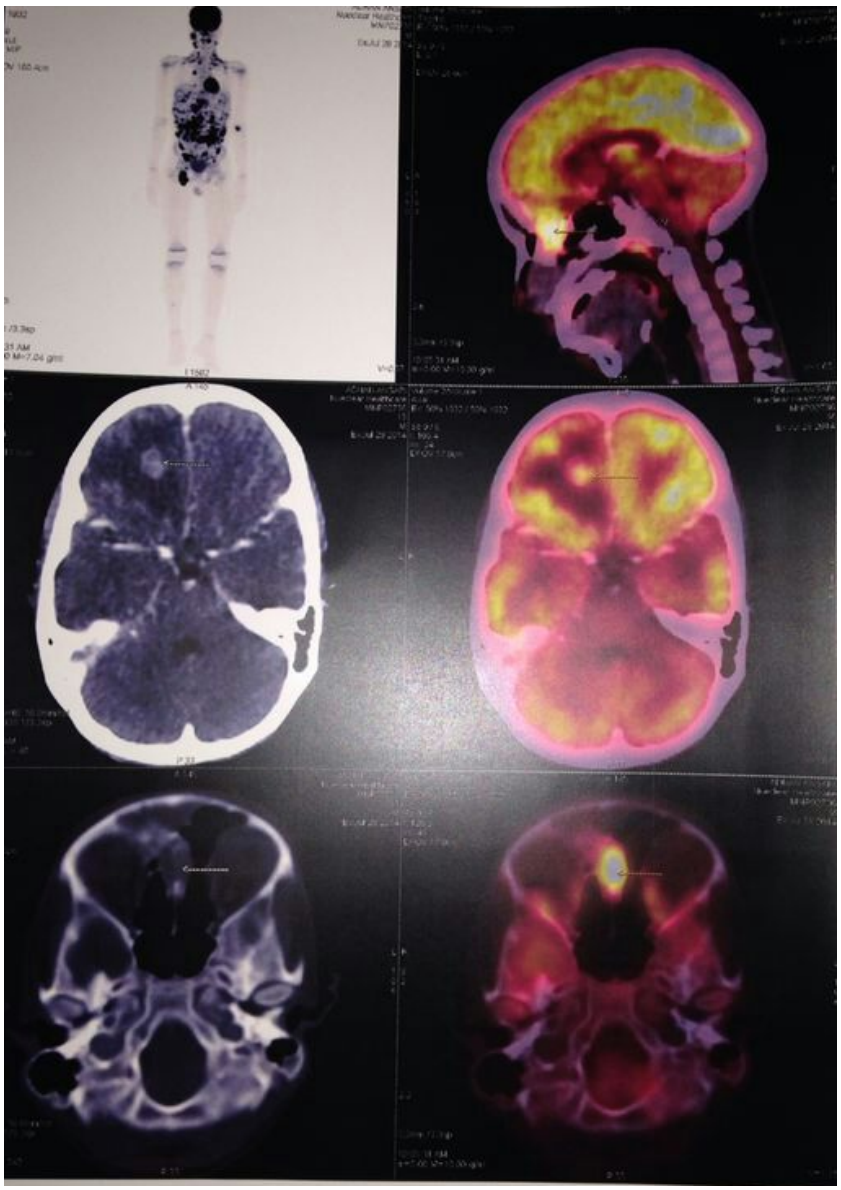

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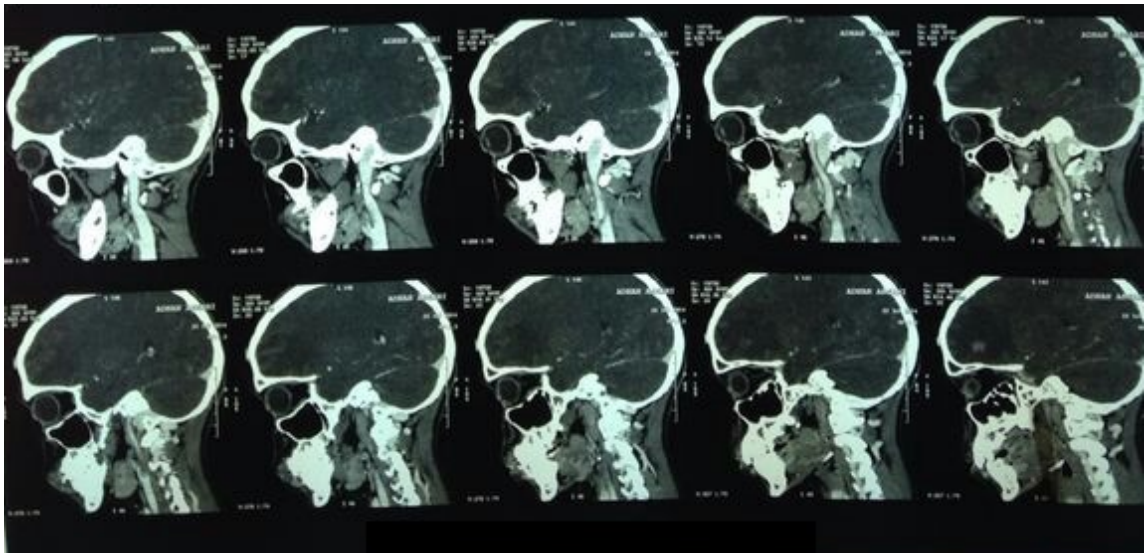

(e)

Fig. c & d – PET scan with active lesions
Fig. e – CT Scan – Sagittal section of the head

During the work up an ultrasound of the abdomen revealed chronic as cites with hepatosplenomegaly. An ascitic tap revealed an inflammatory smear with no malignant cells detected. A Fine needle aspiration cytology of the right maxillary swelling revealed a suppurative inflammation most probably fungal. Amendum- special stain PAS did not reveal any fungal elements. A FNAC of the right sided thigh swelling revealed a granulomatous lymphadenitis. The left supraclavicular lymph node was sent for histopathological reporting which revealed tuberculous lymphadenitis.

The patient was then sent for a PET scan which showed active tuberculous disease in the right intraparotid, bilateral cervical, mediastinal, abdominopelvic and inguinofemoral adenopathy. The scan also showed hypermetabolic bilateral pulmonary nodules and diffuse abdominopelvic peritoneal thickening with ascites. Lytic and marrow lesions involving multiple bones of the axial and appendicular skeleton was also noted along with a solitary hypermetabolic nodule with perilesional edema in the right frontal lobe. With the clinical picture, the scan findings were in favor of disseminated tuberculous infection

Excision biopsy from the right side face and biopsy from root of ethnocide revealed tuberculous osteomyelitis. Biopsy from the right lower alveolus revealed acute suppurative inflammation and an excision biopsy of the right inguinal lymph node revealed tuberculous lymphadenitis.

The patient was diagnosed with disseminated tuberculosis and was started on anti-tuberculosis treatment as per the category 1 of the RNTCP program using the DOTS strategy, which is the national tuberculosis treatment program in India.

DISCUSSION

Challenges in the diagnosis of this case were due to the unusual presentation of this case. The patient presented with the maxillary swelling as his only chief complaint. The initial CT scan of the patient revealed a frontal lobe lesion suggestive of a neoplastic or infective disease. Olfactory neuroblastoma was one of the initial differential diagnosis thought of, due to the location of the lesion in the midline of the frontal lobe causing erosive changes in the cribriform plate and the lateral walls of the ethmoid sinuses with invasion into the nasal cavity. Typically olfactory neuroblastomas are slow growing tumours of neural crest origin and pathologically appear as multilobed pink grey tumors.

Histology demonstrates variable differentiation, from well-formed neural tissue to undifferentiated neuroblasts with pseudorosette formation. They typically have a bimodal incidence first in young adults in the 2nd decade and then in the 5th and 6th decade of life. It has been said that these tumours are part of Ewings sarcoma group of tumors rather than a neuroblastoma.Orofascial tuberculosis is a rare manifestation. According to Andrade's classification of orofascial tuberculosis, this patient had a type 1 persentation of orofascial tb.

(Andrade *et al.,* 2012) The most relevant investigations from the 10 step protocol set out by Andrade and Mahtre were carried out for the patient. Disseminated TB usually occurs in young children or elderly or immune compromised states. An HIV test was carried out and was negative.

There was no history of repeated infections and the patient's family reported that the patient was generally always healthy. A more thorough work up to rule out any other immunodeficiency disease needs to done, although the patient's history is not suggestive of any such condition. The treatment of extrapulmonary TB follows standard RNTCP treatment guidelines depending on categorisation, and is consistent with international recommendations by WHO and the International Union Against Tuberculosis and Lung Disease (IUATLD)(WHO, 2003; IUATLD, 2000).

As in all cases of extrapulmonary Tb a primary foci in the lung has to be ruled out. A negative AFB stain on sputum and no foci seen on a chest x-ray in our patient ruled out any pulmonary foci. Patient was started on treatment using DOTS program, under category 1.Regular follow up is essential and drug compliance is mandatory, to prevent development of drug resistance and prevent failure of the treatment. The patient has been followed up and is responding well to treatment.

Conclusion

Although rare, tuberculosis does affect the flat bones of the body. If a diagnosis of tuberculosis is confirmed that is extra pulmonary, a pulmonary foci must be looked for as also any other foci in the body. Causes for widespread tuberculosis should be looked for and emphasis on strict adherence to treatment so as to prevent progression of disease and development of drug resistance.

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