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CLINICAL REPORT

A Misdiagnosis Led to an Extensive Skull Base Surgery: Infratemporal Tuberculosis Mimicking Giant Cell Tumor

Samireh Farshchi · Mehrdad Hasibi · Mohammad Taghi Khorsandi Ashtiani · Nasrin Yazdani · Zahra Mokhtari · Amir Farshchi

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Abstract Tuberculosis is a major health problem in developing countries. Tuberculosis of the infratemporal region is not common and the diagnosis could be complicated because of the similarity of the presentation to neoplasm. In our paper, we report a 49 year old male presented with a preauricular mass with extension to parotid in right side of the face. The primary histologic diagnosis was giant cell tumor with bony involvement and radical surgery was taken. After 16 months the patient was developed recurrence of the primary lesion in association with post auricular fistula. Ultimately, infratemporal tuberculosis was diagnosed according to result of the drained discharge by AFB microscopy. Therefore, tuberculosis should be considered as an important differential diagnosis of mass lesions in head and neck area, even when there is no history of significant exposure and no systemic signs or symptoms of tuberculosis.

Keywords Giant cell tumor · Tuberculosis · Skull base

S. Farshchi · M. T. K. Ashtiani · N. Yazdani · Z. Mokhtari
Otorhinolaryngology Research Center, Tehran University of Medical Sciences, Amir-A'lam Hospital, North Sa'adi Ave., Tehran, Iran

M. Hasibi
Department Of Infectious Diseases, Tehran University of Medical Sciences, Tehran, Iran

A. Farshchi (✉)
Department of Pharmacoeconomics and Pharmaceutical Administration, School of Pharmacy, Tehran University of Medical Sciences, Tehran, Iran
e-mail: Farshchi_a@razi.tums.ac.ir

Introduction

Tuberculosis is a common infectious disease in developing countries. The incidence of disease is increasing in developed countries, driven largely by HIV infection [1].

Lymphadenitis is the most frequent form of extrapulmonary tuberculosis. Lymph node tuberculosis is usually unilateral and cervical in location [2]. The most common site of lymph node tuberculosis is along upper border of the sternocleidomastoid muscle.

Tuberculosis of the infratemporal region is not common and the diagnosis could be problematic because of the similarity of the presentation to neoplasm. These patients may undergo unnecessary extensive operations [3]. Here, we present a case of infratemporal tuberculosis that mimicked giant cell tumor.

Case Presentation

A 49 year old male presented with a preauricular mass with extension to parotid in right side of the face from 9 years before the first admission. The mass was enlarging gradually and was associated with progressive hearing loss in right ear. There were no systemic symptoms and no history of pulmonary problems. Physical examination revealed a non-tender mass which was fixed to the zygomatic arch and fulfilled the external auditory canal with an extension to parotid gland without skin involvement. There was also a mobile 2–3 °cm lymphadenopathy near the angle of mandible (Figs. 1, 2).The right facial nerve was intact. The chest X ray and routine laboratory test were normal.

The incisional biopsy of mass lesion was taken and the report of pathology was giant cell tumor with bony involvement. The patient underwent an operation with a

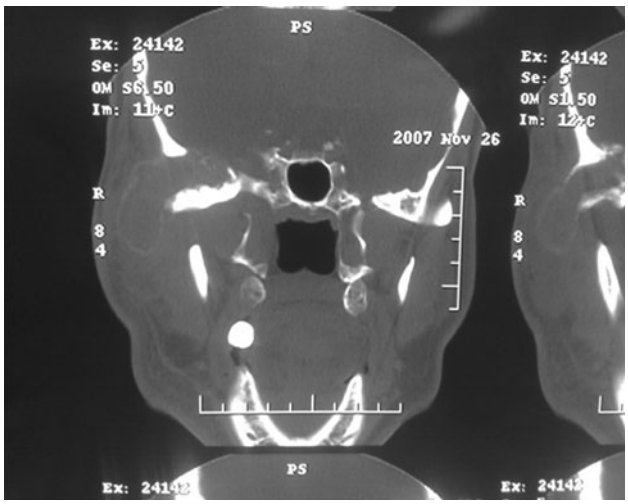

Fig. 1 Infratemporal lesion before the first surgery (*coronal view* of CT scan with IV contrast)

Fish type B approach with a large C-shape post auricular incision. The mass had involved pterygoid plates, middle ear, anterior wall of EAC, the roof of TMJ and the middle cranial dura.

The mass was near totally excised and a superficial parotidectomy with facial nerve conservation was performed as well, but dural shaving led to a CSF leakage which was repaired with fat graft. A stent was placed in external auditory canal at the end of operation.

Few days after surgery, a purulent secretion was discharged from suture line and external auditory canal which was partially treated with drainage and antibiotic therapy. The report of pathology of mass was giant cell lesion with focal area of neoplastic cells and lymphoid cells, fibrocollagen tissue with patchy chronic inflammatory cells.

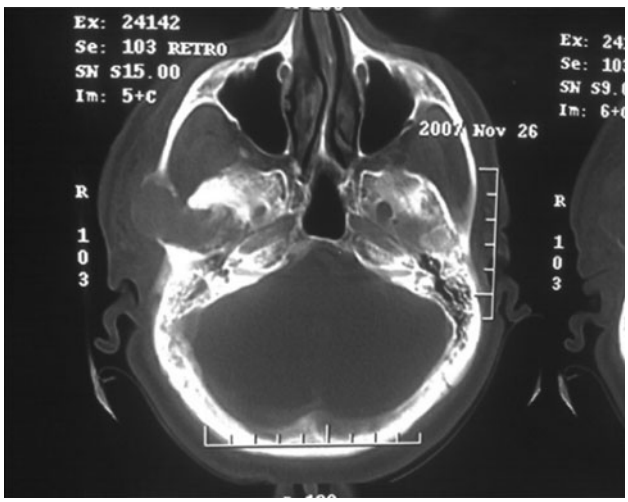

Fig. 2 Infratemporal lesion before the first surgery (*axial view* of CT scan with IV contrast)

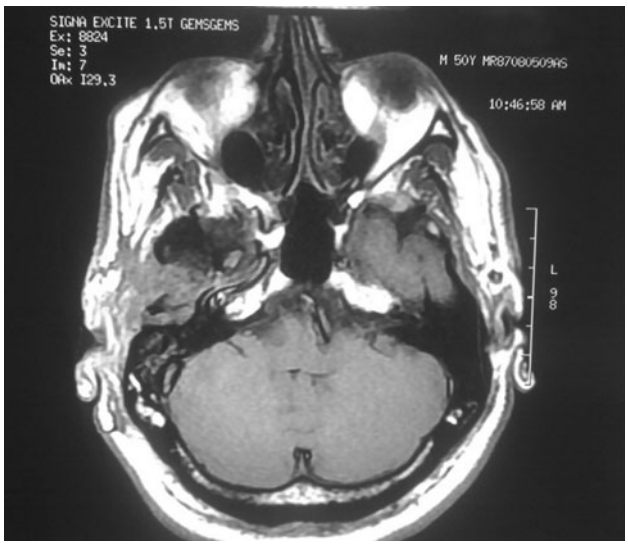

Fig. 3 Recurrence of infratemporal lesion after 16 months (T1 weighted MRI)

Sixteen months later, the patient was developed recurrence of the primary lesion with post auricular fistula (Fig. 3).The light microscopy of purulent discharge stained with Ziehl-Neelsen showed trace acid fast bacillus. So infratemporal tuberculosis was diagnosed according to result of the smear. The patient was commenced on standard anti-tuberculosis drug regimen including Isoniazid, Rifampin, pyrazinamide, Ethambutol and vitamin B6. After 2 months, the cutaneous fistulous tract was closed and mass lesion was resolved completely. Mycobacterium tuberculosis was isolated from mycobacterial culture of secretions. Therapy was continued for 12 months. After nearly 15 months follow up, there was not any evidence of recurrence. The diameter of induration of PPD was 12 mm and HIV antibody test was negative.

Discussion

Tuberculosis is still an important public health problem in HIV-negative Iranian patients due to environmental risk factors such as large-scale immigration of Afghanian people to Iran. Tuberculosis lymphadenitis presents as painless swelling of the lymph node with or without cutaneous involvement. The systemic symptoms are usually absent.

The diagnosis is established by the histopathological examination, AFB microscopy and mycobacterial culture of tissue samples. The primary infratemporal tuberculosis is uncommon. There are some case reports of infratemporal fossa involvement due to the extension of orbital and intracranial tuberculosis [4–6].

On the other hand; giant cell tumor is not common neoplasm. It usually presents by endochondral calcification of the long bones in middle age persons [7]. Giant cell tumors have prominent giant cells with few hemorrhagic foci in histologic examination [8]. The incidence of involvement of the facial skeleton with giant cell tumors is very low (2 %) [9].In this location, it can involve maxilla, mandible and sphenoid portion of the temporal bone [10, 11]. The reported cases of giant cell tumors of the facial skeleton are often clinically occult and considered as benign lesions but they can cause local destruction 10. As it has been reported in several cases there are some histopathologic and radiologic similarities between tuberculosis and neoplasm. There is also a report of the tuberculosis of distal end of radius which had a radiologic diagnosis of giant cell tumor [12]. There are also some reports of primary parotid tuberculosis mimicking neoplasm [8].

In our case, histologic examination of the tissue sample demonstrated prominent giant cells and scarce neoplastic cells, which was ultimately interpreted as giant cell tumor. The presence of fixed, non-tender mass in unusual location without skin involvement, the absence of any historical clue of tuberculosis in patient and the presence of prominent giant cells in histologic tissue examination led to misdiagnosis and unnecessary extensive surgery.

Conclusion

Tuberculosis should consider as an important differential diagnosis in head and neck area, even when there is no history of significant exposure and no systemic signs or symptoms of tuberculosis. The correct diagnosis is related on high index of clinical suspicion, the request for performing mycobacterial laboratory tests, careful histologic examination of tissue samples and close collaboration between the clinician and pathologist.

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