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Tuberculosis in otolaryngological practice

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ABSTRACT

Background: Tuberculosis has become a common occurrence in Otorhinolaryngology with increasing number of extra pulmonary cases.
Methods: This is a study of 27 patients who visited ENT OPD of Dr. D. Y. Patil Medical College, Pune, with variety of manifestations of tuberculosis in the ENT region.
Results: Majority of those suffered from tuberculous cervical lymphadenopathy, other manifestations included laryngeal tuberculosis, tuberculous otitis media, lupus vulgaris and tuberculous infection of a pre auricular sinus. FNAC and histopathologic examination proved to be reliable tools of diagnosis. Five of these patients suffered from concurrent pulmonary tuberculosis. All these responded well to category 1 anti-tubercular therapy well.
Conclusions: Tuberculosis in Otorhinolaryngology shows a variety of manifestations so it should be kept in mind whenever dealing with unusual presentations.

Keywords: Tuberculosis, Cervical lymphadenopathy, Tuberculous otitis media, Lupus vulgaris, Tuberculous laryngitis

INTRODUCTION

Tuberculosis, a chronic inflammatory bacterial infection caused by *Mycobacterium tuberculosis* is a common disease especially with increasing incidence of AIDS and HIV infestation. Though pulmonary tuberculosis remains the commonest manifestation of the disease, incidence of extrapulmonary tuberculosis is approximately 20% with tuberculous lymphadenopathy being the commonest one in children and pleural tuberculosis being the commonest extrapulmonary manifestation in adults.[1,2] Occurrence of extrapulmonary tuberculosis without pulmonary infection is on the rise in recent years, mainly because of rise in immunocompromised patients and changing trends in the treatment of tuberculosis.[3] Commonest manifestation of otolaryngological tuberculosis excluding cervical lympahedenitis is laryngitis, but a wide spectrum of cases is encountered now-a-days.[4]

Here we present a series of cases of various manifestations of tuberculosis encountered in our ENT practice, commonest manifestation being cervical lymphadenopathy. The array includes number of presentations of lupus vulgaris of face, tuberculous infection of a preauricular sinus, tuberculous osteo-myelitis of mastoid bone, laryngeal tuberculosis and many more varieties.

METHODS

This is a retrospective study of diagnosed cases of extrapulmonry tuberculosis that attended ENT OPD in our institute from November 2015 to February 2017. Patients of all age groups and both the sexes are included in the study.

They were studied regarding their symptomatology, clinical evaluation and modalities used for diagnosis of tuberculosis. Relevant history in detail was taken for all the patients. They were then subjected to a thorough clinical examination including endoscopic evaluation as per requirement. Appropriate investigations such as serological tests and tests to confirm the diagnosis of tuberculosis were then carried out including a fine needle aspiration cytology or a biopsy, as deemed fit for the case. History, examination and investigations to rule out pulmonary tuberculosis were done whenever there was a possibility of concomitant pulmonary infection.

All the patients were started on anti-tubercular therapy and responded well to it.

Clinical presentation

There were a variety of cases with following presentations

1. *Cervical lymphadenopathy*

These patients presented with lateral neck swelling for a prolonged period not responding to antibiotic therapy. There were multiple matted non-tender swellings palpable on one or both sides of the neck. FNAC was the diagnostic tool to prove diagnosis of tuberculous lymphadenopathy.

2. *Tuberculous mastoiditis*

The presenting complaints were chronic discharge not responding to antibiotic therapy and variable degree of conductive hearing loss. On examination, there were multiple perforations in pars tensa of the tympanic membrane with pale granulations, which on histopathological examination confirmed the diagnosis of tuberculosis. In one case, there was osteomyelitis of mastoid bone was seen with pieces of sequestrum found intraoperatively.

3. *Lupus vulgaris of face*

These patients presented with cellulitis like picture and ulceration. Facial skin was affected. A biopsy from the affected region confirmed the diagnosis with presence of Langerhan's giant cells and epitheloid granuloma. Two of the patients were immunocompromised due to uncontrolled diabetes mellitus.

4. *Laryngeal tuberculosis*

Typically, these cases presented with hoarseness of voice and dysphagia. Videolaryngoscopy showed oedematous/ erythematous vocal cords with irregular surface and white tubercles occasionally. Biopsy from those suspicious lesions was sent for histopathological examination.

5. *Tuberculous infection of pre auricular sinus*

In this series, there was one case of tuberculous infection of a pre auricular sinus. The patent came with recurrent swelling in the pre auricular region with discharge. After incision-drainage and excision of the sinus, the wound formed granulation tissue which on histopathology showed tuberculosis.

RESULTS

Over a period of 16 months, 27 patients who visited the ENT and Head Neck Surgery department of our institute with otorhinolaryngologic manifestations of tuberculosis were studied.

Majority of those, 12, 5 males and 7 females, out of 27 i.e. 44% had tuberculous cervical lymphadenopathy that was confirmed on FNAC in most of the cases and by histopathologic examination of excised cervical lymph node in 2 cases.

Table 1: Diagnosis-wise sex distribution of the patients.

Region affected	Males	Females	Total	%
Cervical LN	5	7	12	44
Lupus vulgaris	4	1	5	19
Larynx	3	1	4	15
Otitis media/ mastoiditis	4	2	5	19
Pre auricular sinus	1	0	1	3
Total	17	10	27	100

Table 1 shows the details of region affected and total number of patients with sex distribution. Table 2 explains various diagnostic tests.

Table 2: Diagnostic tests to confirm tuberculosis.

Investigations	No. of patients	Positive in/ suggestive of tuberculosis in
FNAC	12	12
Biopsy	9	9
HPR of surgical specimen	5	5
Z N staining of discharge (ear/larynx)	8	4
Mantoux test	27	22
ESR	27	24
HIV	27	4
Sputum for AFB	27	3

19% had tuberculous otitis media or mastoiditis and lupus vulgaris each. One of the cases showed osteomyelitis of the mastoid bone. These needed a histopathologic

examination for confirmation of diagnosis. 2 out of these patients suffered from pulmonary tuberculosis also.

Figure 1: TB larynx.

Figure 2: Lupus vulgaris.

15% i.e. 4 out of 27 cases studied showed evidence of tuberculous laryngitis. 3 out of them had been diagnosed with pulmonary tuberculosis.

One case had tuberculosis of the pre auricular sinus. Histopathologic examination of the surgical specimen after excision showed features of tuberculosis. The wound healed only after this patient received appropriate ATT.

All the patients were subjected to Mantoux test, 22 of them i.e. 81% showed a positive test.

Sputum was sent for AFB in all the cases and it was positive in 3 of these patents. 2 others who had pulmonary tuberculosis were sputum negative.

All these patients were tested for HIV and 3 were found to be HIV positive though none of them had full blown AIDS or pulmonary tuberculosis.

Five of the patients were diabetic and two of them showed uncontrolled blood sugar levels.

5 of these 27 patients needed surgical intervention, 1 with tuberculous otitis media and 1 with tuberculous osteomyelitis of mastoid underwent a cortical mastoidectomy, one with pre auricular sinus underwent excision and 2 of cervical lymphadenopathy required a lymph node excision to confirm the diagnosis by histopathologic examination.

All the patients, after confirmation of diagnosis, were started on Anti Tubercular Therapy and showed good response to the treatment. All the patients received category 1 ATT (2 months of 4 drug therapy of Isoniazide, Rifampicin, Pyrazinamide and Ethambutol and 4 months of 2 drug therapy with Isoniazide and Rifampicin) as per current RNTCP guidelines.[5] All responded well to the prescribed anti tubercular regimen, none showed any evidence of multi-drug resistant tuberculosis.

DISCUSSION

Tuberculosis is one of the most common chronic granulomatous infections involving various sites in ENT. India being a developing country has a large number of patients with variety of manifestations of this disease. Poor sanitation, overcrowding, low standards of living and rising number of HIV cases are the main causes for this.

Pulmonary tuberculosis is the commonest form of the disease but extrapulmonary cases constitute 20% of cases with tuberculosis. In routine ENT practice, an array of cases is seen the commonest being cervical lymphadenopathy. This finding of our study coincides with the study by Mulay and Hiranandani.[6] 78% of these patients had bilateral multiple lymphadenopathy, a finding similar to the one reported by Younus et al.[7] A study done at SHMS Hospital, Srinagar also showed cervical lymphdenopathy as the commonest manifestation of tuberculosis in ENT practice.[8]

The second common presentation was lupus vulgaris. 2 of the 5 patients suffering from lupus vulgaris were found to diabetic with uncontrolled blood sugar levels.

Same number of patients was found with tuberculous mastoiditis. Chronic ear discharge not responding to routine antimicrobial therapy was the common complaint. 3 out of 5 patients had associated pulmonary tuberculosis too, a feature similar to the study by Yaniv et al.[9]

Laryngeal tuberculosis needed to be differentiated from other granulomatous diseases like leprosy, fungal infections and noninfective diseases like malignancy, sarcoid or Wegener's disease. The diagnosis was confirmed by biopsy from the lesion. 50% of these

patients had pulmonary tuberculosis as well. These finding were similar to those by Khan et al in 2002.[8]

HIV infected patients generally have increased risk of otorhinolaryngeal tuberculosis.[10] But in our study, only 3 out of 27 patients were found to be HIV positive.

Fine Needle Aspiration Cytology proved to be a reliable investigation especially for cases of cervical lymph-adenopathy. Lau et al and Khan et al noted a similar experience with accuracy of FNAC.[8,11]

All these patients were started on category 1 ATT (2 months of 4 drug therapy of Isoniazide, Rifampicin, Pyrazinamide and Ethambutol and 4 months of 2 drug therapy with Isoniazide and Rifampicin) as per current RNTCP guidelines. All responded well to the prescribed anti tubercular regimen. Michael et al noted similar results in 2011.[3]

None were found to have drug-resistant tuberculosis. Role of surgery was mainly to establish the diagnosis.

CONCLUSION

Though not a very frequent diagnosis, tuberculosis in Otorhinolaryngology and Head Neck Surgery remains an important entity encountered especially in developing countries and in lower socio economic class.

Cervical lymphadenopathy remains the most common manifestations of tuberculosis; various other varieties still remain a diagnostic challenge. FNAC and histopathologic examination remains the mainstay of diagnosing the disease and show a great accuracy in doing so. Role of newer, more rapid and easily accessible methods of diagnosing the disease needs to be studied, especially for extrapulmonary tuberculosis.

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