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Original Research Article

Clinico-pathological profile of tuberculosis of the head and neck region from a tertiary care teaching hospital

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Abstract: Tuberculosis of the head and neck region may often mimic malignancy and misdiagnosed which leads to an unnecessary delay in diagnosis. Better understanding of this topic would help us to make early diagnosis thus timely initiation of treatment. The aim of this study is to analyze the clinico-pathological profile of various types of tuberculosis of the head and neck region. Retrospective cohort of patients with confirmed diagnosis of tuberculosis of the head and neck region during formed the study population. Histologically proven cases either by Excision biopsy or FNAC were included in this study. Study tools were records of the patients such as information from MRD department and records from histopathological section. Data of 45 patients was analyzed in this study. Gender wise, 21 (46.7%) were males and remaining 24 (53.3%) were females. All the patients were negative for HIV. Majority (28, 62.2%) of cases were in the age group of 15-24 years followed by 7 subjects (15.6%) in the age group of 0-14 years. Cervical tubercular adenitis was most commonly observed lesion seen in 39 (86.7%) subjects followed by Laryngeal tuberculosis (5, 11.1%) and Tubercular otitis media with mastoiditis seen in 1 (2.20%) patient. Level II cervical nodes were the most common region affected either in isolation or as multiple nodes. FNAC was diagnostic in 75% cases. The clinical presentation of tuberculosis of the head and neck region can be varied and misleading. It is therefore essential for the clinician to be aware of the condition and consider it in their differential diagnosis.
Keywords: Tuberculosis, Cervical lymphadenopathy, Laryngeal tuberculosis, Middle ear cleft, Nasopharynx, India

INTRODUCTION

Tuberculosis is one of the oldest diseases of mankind and is a leading cause of human suffering and loss of life. There are nearly 9 million new cases and 2 million deaths from tuberculosis worldwide every year[1].Tuberculosis continues to be the biggest health problem in developing countries with enormous social and economic implications. Even in the developed countries, it is again posing a new health challenge due to the migration of people from developing areas with a high prevalence of tuberculosis and the increasing high incidence of HIV infection in these countries. This has resulted in a worldwide resurgence of tuberculosis[2,3].

Tuberculosis can affect every organ in the body except nail, hair and teeth. Lymphadenitis is the commonest form of extrapulmonary tuberculosis[4], and tuberculous lymphadenitis is among the commonest causes of peripheral lymphadenopathy in the developing world[5].Tuberculosis of the head and neck region is known for its varied presentations and different sites of involvement. It may often mimic malignancy and misdiagnosed which leads to an unnecessary delay in diagnosis[6]. Better understanding of this topic would help us to make early diagnosis thus timely initiation of treatment. Therefore this study was planned with an objective to analyze and ascertain the clinico-pathological profile of various types of tuberculosis of the head and neck region. An additional objective was to evaluate the response of such patients to Directly Observed Treatment, Short-Course (DOTS) chemotherapy.

MATERIALS AND METHODS

The present retrospective study was planned and executed by the Department of Pathology, S. N. Medical College, Agra, Uttar Pradesh. Retrospective cohort of patients with confirmed diagnosis of newly diagnosed cases of head and neck tuberculosis were included during 1st January 2013 to 31st December 2013 at this tertiary care health centre formed the study population. Diagnosis and treatment was done as per Revised National Tuberculosis Control Programme (RNTCP) guidelines. Diagnosis was confirmed if pus/aspirate from node showed Ziehl-Neelsen (ZN) stain positive for AFB and/or Granulomatous changes with Langhan's giant cell.

Histologically proven cases of Cervical Tuberculous Lymphadenitis by Excision biopsy (when FNAC was negative or doubtful and clinical suspicion was high for tuberculosis) or by FNAC were included in this study. Cases of relapse, failure and defaulters were excluded. Pregnant women and diagnosed cases of tubercular meningitis were also excluded from the study. Finally a total of 45 cases were included in this study.

Study tools were records of the patients such as information from MRD departmrnt and records from histopathological section i.e. histopathological requisition forms and clinical case sheets. Routine investigations including ESR and Chest Radiographs were also analyzed. Lymph nodes were classified as per guidelines of American Academy of Otolaryngology Head and Neck Surgery: Level I, Sub-mental and Sub-mandibular lymph nodes; Level II, Cervical jugular chain nodes above the level of hyoid; Level III, Cervical jugular chain nodes from the level of hyoid to the level of Cricoid; Level IV, Cervical jugular chain nodes from the level of Cricoid to the supra-sternal notch; Level V, Posterior triangle lymph nodes; Level VI, Central compartment nodes[7].

Diagnosed cases were managed as per standard guidelines. Along with medical treatment, surgical treatment was given in the form of excision of the large lymph nodes (>6cm) suspected not to respond by medical treatment only, incision and drainage of abscess and excision of sinus tract along with associated lymph nodes. All patients were followed up at least six months to one year (2 monthly for six months than 3 monthly for next six months) and progress was assessed by clinical examination. For the purpose of this study, 'cure' was defined as complete disappearance of lymph nodes or decrease in size of <1cm.

Permission of Institutional ethics committee (IEC) was sought before the commencement of the study. All the proformas were manually checked and edited for completeness and consistency and were then coded for computer entry. After compilation of collected data, analysis was done using Statistical Package for Social Sciences (SPSS), version 20 (IBM, Chicago, USA). The results were expressed using appropriate statistical methods.

RESULTS

Data of 45 patients was analyzed in this study. Gender wise, 21 (46.7%) were males and remaining 24 (53.3%) were females. All the patients were negative for HIV. Majority (28, 62.2%) of cases were in the age group of 15-24 years followed by 7 subjects (15.6%) in the age group of 0-14 years. (Figure 1).

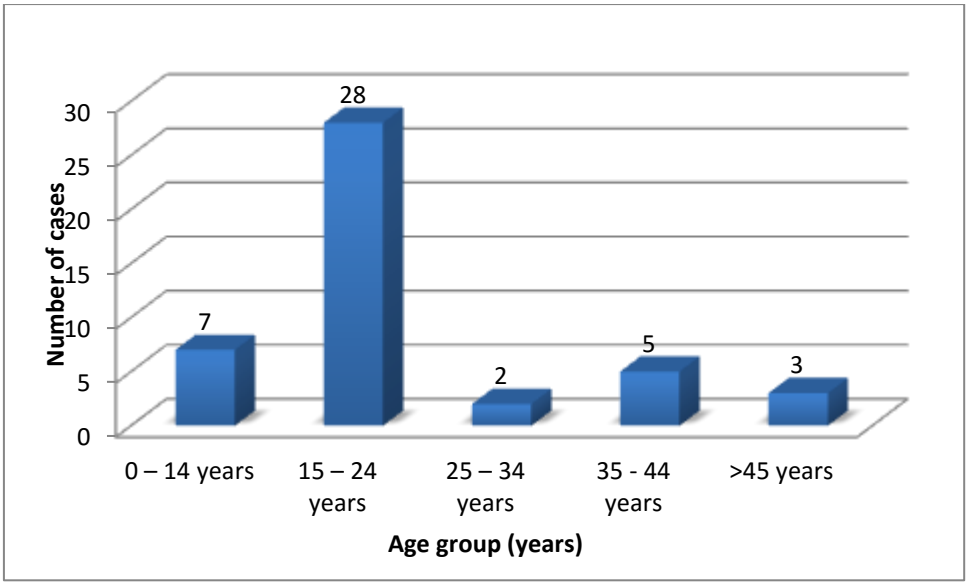

Fig-1: Bar chart showing age group wise distribution of cases

Out of 3 types of lesions detected, Cervical tubercular adenitis was most commonly observed lesion seen in 39 (86.7%) subjects followed by Laryngeal tuberculosis (5, 11.1%) and Tubercular otitis media with mastoiditis seen in 1 (2.20%) patient. (Figure 2).

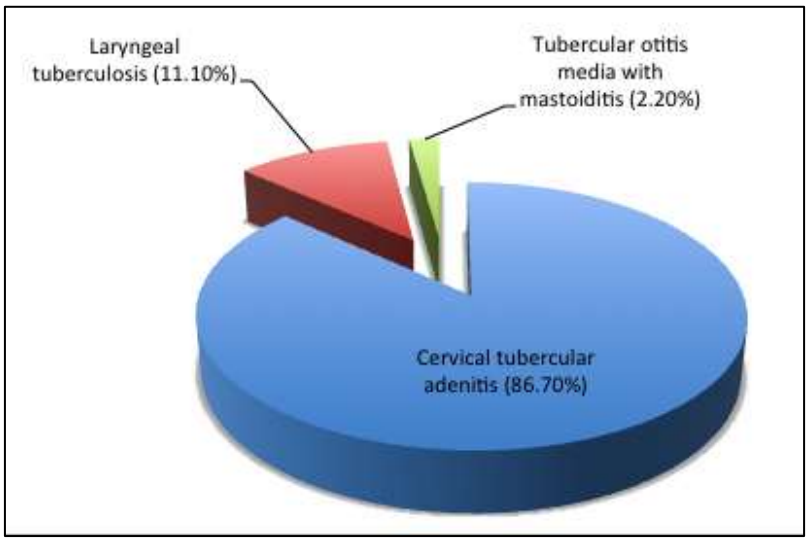

Fig-2:Distribution of types of lesions among study subjects

Gender wise, Cervical tubercular adenitis was found to be more common among females whereas Laryngeal tuberculosis and Tubercular otitis media with mastoiditis were found more common among males. (Table 1)

Table 1: Gender wise distribution of lesions among study subjects

Pattern of lesions	Gender	
	Male N (%)	Female N (%)
Cervical tubercular adenitis	17 (43.6%)	22 (56.4%)
Laryngeal tuberculosis	3 (60.0%)	2 (40.0%)
Tubercular otitis media with mastoiditis	1 (100%)	0 (0.0%)
Total	21 (46.7%)	24 (53.3%)

Level II cervical nodes were the most common region affected either in isolation or as multiple nodes. FNAC was diagnostic in 75% cases where epitheloid granuloma and Langhan's cells with or without necrosis was seen. The aspirate from affected lymph nodes did not reveal AFB in majority of the cases. About 30% samples showed AFB after ZN staining. In few samples where FNAC yielded non-specific results, incision/ excision biopsy confirmed the diagnosis.

All the cases were put on Category I regimen. At the end of 6 months, 44 (97.8%) patients had complete recovery of their lesions. They were symptom free three months after completion of treatment. One patient was considered as failure as the patient did not respond to Category I regimen.

DISCUSSION

Tuberculosis, "Captain of all these men of death", as referred to by John Bunyan in the 18th century is still the biggest health challenge of the world. It is known that 1.5% of India's population is affected with tuberculosis[2]. Cervical tuberculous lymphadenopathy or "scrofula", which used to be treated in medieval times in England by the "King's touch" and issuance of a "gold coin", is still the most common cause of persistent cervical lymph node enlargement in the developing countries[3]. In this study we analyzed 45 cases of head and neck tuberculosis. Gender wise female patients outnumbered male counterparts (46.7% males and 53.3% females). Purohit MR et al. recorded similar findings in his study from Central India (Ujjain)[8]. The result of this study is in agreement with two other previous studies[9,10].

Regarding most commonly affected group, we observed that 15–24 years of age group was worst affected (62.2%). In the study conducted at Assam, most affected age group was from 15–24 years age, which constituted 57% of the total cases[11]. Another study from South Delhi, most affected age group was again same age group comprised of 38% of total

cases[12].

Lymph node tuberculosis has increased over last two decades. In a retrospective study of 459 children of tuberculosis started on anti- tubercular drugs from a tertiary referral institute of Delhi, pulmonary tuberculosis was the commonest followed by lymph node tuberculosis. The mean age of the children was 93 months and sex distribution was almost equal[13]. In our study Cervical tubercular adenitis was most commonly observed lesion seen in 39 (86.7%) subjects followed by Laryngeal tuberculosis (5, 11.1%). Another study from LRS Institute of Tuberculosis and Respiratory Diseases, New Delhi observed that Cervical tuberculous lymphadenitis (88.2%) was the commonest form for all ages[14]. A similar retrospective study of 165 cases over a period of 10 years found laryngeal tuberculosis in 14.5% of the cases and tubercular otitis media in 2.4% of the cases[15].

In this study, Tubercular otitis media with mastoiditis was seen in 1 patient only. Diagnosis was made in this case by the presence of numerous acid fast bacilli in the middle ear discharge. Tuberculosis of the middle ear cleft is a very rare entity and its incidence was found to be 0.05% during the period of 1950-1959. It may also be secondary to pulmonary tuberculosis due to entry of the tubercle bacilli through the Eustachian tube during regurgitation, cough or sneezing[3].

Of all the cervical lymph node swellings, level II was most commonly affected. In concordance with various studies tubercular lymphadenitis most commonly presents as multiple matted nodes[8,11]. Dandapat *et al*. found upper deep jugular nodes to be most commonly affected[16]. Another study from Khartoum by Kheiry and Ahmed observed that the most affected nodes were in the posterior triangle[17].

Before the advent of chemotherapy, surgical excision of all the lymph nodes was the mainstay of treatment for tuberculous lymphadenopathy[18]. In 1950s, when chemotherapy for tuberculosis was just introduced, excision of all involved lymph nodes followed by anti-tuberculous chemotherapy for 12–24 months was found to be more effective treatment[19]. In this study, at the end of 6 months, 97.8% patients had complete recovery of their lesions. They were symptom free three months after completion of treatment.

Another author observed a success rate of 71.8% with Category III and category I regimen[20]. Six months anti tubercular therapy is the standard protocol as per guidelines of RNTCP and studies have shown no difference in cure rates or relapse rates between 6 and 9 months therapy. The role of surgical treatment in tuberculosis of head and neck region is limited and not well defined and should be considered as an adjunct to anti tubercular therapy for disease caused by drug resistant organisms[21].

CONCLUSION

Early diagnosis and treatment is important in reducing the prevalence of tuberculosis of the head and neck region. The clinical presentation of tuberculosis of the head and neck region can be varied and misleading. It is therefore essential for the clinician to be aware of the condition and consider it in their differential diagnosis.

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