Original Article

A STUDY OF OSTEOARTICULAR TUBERCULOSIS IN A TERTIARY CARE HOSPITAL OF BHOPAL, MADHYA PRADESH

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ABSTRACT

Background: Osteoarticular tuberculosis (TB) represents 1–5% of all cases of tuberculous disease and 10–18% of extra pulmonary involvement. Signs and symptoms are frequently nonspecific making the disease difficult to diagnose. This study was conducted to find out the trend of various osteoarticular TB.

Methods: It was a hospital based descriptive study

Results Of the total 118 were studied , maximum were in the age group of between 21-30 years .Males were higher 58 % (68) than females 42.37 %(50). Maximum cases were from Rural background 73% (87). Hindus were maximum 87.28 %(103) cases followed by Muslims 12 %(14) . According to site of the joint various Regions/Joints were involved, most common osteotuberculr site was Spine 75.57% (88) followed by Hip12.71% (15), least common site observed in our study was shoulder joints . Other associated medical conditions were also observed like Psoas abscess in 6.8% (8), paraplegia/paresis in 11.84% (14) and Pleural Effusion in 5.93% (7) cases. Around 16.10% (19) cases underwent surgeries, 4.23% (5) cases confirmed by biopsy. After conducting this study we learnt that many time we unable to reach firm diagnosis of bony problem or not responding to usual treatment in that time very high chance patients may have osteoarticular tuberculosis.

Conclusion: TB spine is the comments site of osteoarticular tuberculosis, so developing country like India any person walk in the department with history of spinal problems always to be consider TB one of the cause.

Keywords: Osteoarticular, Tuberculosis, Tertiary care hospital, Bhopal MP.

INTRODUCTION

Tuberculosis remains a world-wide public health problem despite the fact that the causative organism was discovered 100 years ago and highly effective drugs and vaccine are available. South East Asia Region accounted for (35%) of all notified new and relapse cases.[1, 2] The annual risk of TB in high burden country is estimated 0.5 to 2 %. India is the highest TB burden country in the world and accounts nearly one- fifth (20%) of global burden of TB. Every year approximately 1.8 million persons develop tuberculosis; of which about 0.8 million are new

smear positive highly infectious cases.[3] Osteoarticular tuberculosis (TB) represents 1–5% of all cases of tuberculous disease and 10–18% of extra pulmonary involvement. [4,5] Signs and symptoms are frequently nonspecific and easily misdiagnosed as brucellosis, aspergillar , spondylitis, tumor metastasis and juvenile rheumatoid arthritis. [4, 9, 10, 11] Moreover, up to 50% of patients do not show concurrent pulmonary disease . Because of this, the disease is difficult to diagnose.[13] The delay in diagnosis may range from months to years and it may damage joints or cause spinal cord compression resulting in paralysis.[9, 13, 14, 15] Therefore, it is very important to maintain a high degree of clinical suspicion, especially in Spain where the TB rate per 100 000 inhabitants is one of the highest among the developing nations .[16]

Objectives: To find out the trend of various osteoarticular tuberculosis (TB) and to study the socio demographic factors in relation to TB

MATERIALS AND METHOD

Present study was carried out in the Peoples College of medical sciences and Research Institute Bhopal; it is an 1100 bed tertiary care Medical college hospital, for the period of 3 years from 2009 September to 2012 September. Data of all osteo tubercular patients were collected from medical record department; information was collected regarding patient's general and medical information like age, sex, religion, occupation, areas, type of joint involvement, duration of hospital stay and associated medical problems and type of investigation and their finding were recorded and analysed.

OBSERVATIONS

Of the total 118 cases maximum were in the age group of between 21-30 years with lowest age being 2.5 years old and maximum being a 85 year old . Male cases higher 68 (58%) than female cases in the study group 50(42.37%). Maximum cases were from Rural background 87(73%) and Hindus 103(87.28%). Duration of stay maximum was for the group 08-15 days which had 36(30.50%).

Table 1: Osteoarticular TB cases according to their socio-demographic profile

Category	Cases (%)
Age groups	
0-10	10 (8)
11-20	21 (18)
21-30	39 (33)
31-40	34 (29)
50 and above	14 (12)
Sex	
Male	68(57.62)
Female	50(42.37)
Religion	
Hindu	103(87.28)
Muslim	14(11.86)
Others	1(0.84)
Occupation	
Farmer/unskilled worker	58(49.15)
Skilled worker	08(6.77)
House wife	52(44)
Areas	
Rural	87(73.72)
Urban	31(26.27)

Table 2: Distribution of osteoarticular TB cases according to their joint involvement

Joint Involved	Cases (%)
Knee	06(5%)
Hip	15(12.71%)
Spine	88(74.57%)
Shoulder	01(0.84%)
TB Osteomylitis	01(0.84%)
Ankle joint	04(3.38%)
Elbow	03(2.54%)

According to site of the joint various Regions/Joints were involved, most common osteotuberculr site was Spine 88(75.57%) followed by Hip15 (12.71%), least common site observed in our study was shoulder joints. Tubercular Osteomylitis with shaft of femur involvement was least common 0.84%. All the cases admitted to the ward were asked to undergo various laboratory investigations including x-rays, ESR, Monteux test, Sputum positivity for those suspected of having Respiratory focus, MRI, however 17 (14.40%) .

Table 3: Osteoarticular TB cases according to gender wise associated complication

Category	Male (%)	Female (%)	Total (%)
Psoas abscess	05(7.35%)	03(6%)	08(6.775)
Paraplegia	10(14.70%)	04(8%)	14(11.86%)
Pleural effusion	03(4.41%)	04(8%)	07(5.93%)

Table 4: Osteoarticular TB cases according to investigation performed and operative procedure required

Investigation	Male	Female	Total
ESR	31 (45.6)	24 (48)	55 (46.6)
Monteux +	10 (14.7)	02 (4)	12 (10.2)
Sputum for AFB +	02 (2.9)	03 (6)	05 (4.2)
X-ray suggestive	08 (11.8)	06 (12)	14 (11.9)
MRI suggestive	10 (14.7)	08 (16)	18 (15.2)
Biopsy for AFB +	04 (5.9)	02 (2.9)	06 (5)
Known cases of TB	08 (11.8)	04 (8)	12 (10.2)
Operative procedure required	18 (26.5)	20 (40)	38 (32.2)
No investigation done	09 (13.2)	08 (16)	17 (14.4)

Figure in parenthesis indicate percentage

In laboratory investigations Erythrocyte Sedimentation rate (ESR)may be considered for probable diagnosis, 10(14.70%) of the males tested positive for Monteux while only 2 (4%) females tested positive for the same , 2(2.94%) of the male cases tested positive for sputum for Acid Fast Bacilli as opposed to 3(6%) cases belonging to the female gender , suggestive x ray findings of osteoarticular TB were found in14 (12%), MRI Findings suggestive of osteoarticular TB was seen in 18(15.25%) cases , Other associated medical conditions were also observed Psoas abscess in 8(6.8%) of cases, paraplegia/paresis14(11.84%) of the cases and Pleural Effusion in 7(5.93%) . Around 19(16.10%) cases underwent surgery and 5(4.23%) cases confirmed by biopsy positivity.

DISCUSSION

Present study was reported 118 cases of osteoarticular TB in last three years, Osteoarticular tuberculosis remains a significant worldwide problem, being a source of functional disability, which could lead to severe infirmities. Therefore, it should be recognized and treated early. As TB is endemic in India, most orthopedic surgeons diagnose osteoarticular TB based on clinical and imaging findings only and initiate empirical anti-TB treatment. In the present study Osteoarticular TB to be maximum in the spine followed by the hips and the knees while a some percentage of cases in other sites –ankle, long bones, hand joints, elbow, shoulder, ribs, pelvis, foot and hand bones ,similar type of observation also made by Sukamal Bisoi et al . [16] The another study conducted by Poppel MH et al and Goldblatt M et al, they also reported spine is the comments site for tuberculosis.[17,18] The clinical features suggesting the diagnosis were symptoms such as pain, swelling in the joints, fever, loss of weight/appetite, cough, breathlessness, tenderness, effusion, restriction of movements, elevated ESR, and history of pulmonary TB or past TB diagnosed by either X-ray or Magnetic Resonance Imaging (MRI) , similar type of observation also made by Ruiz G , KD Vaughan and K Kumar .[19,20,21]In our study we have followed the local population especially the rural set up in a tertiary care hospital and have highlighted the above points and also tried to understand the various physical and psychosocial plaguing the general population leading to improper treatment and hence increasing the morbidity and mortality. It cannot be over emphasized that inspite of Revise National Tuberculosis Control Programme (RNTCP) health programs we need to recognize and properly treat the osteoarticular Tuberculosis cases.

CONCLUSION

TB spine is the comments site of osteoarticular tuberculosis, according to the outcome, it is very important to have a high level of clinical suspicion, especially in patients at risk in countries like India with a high prevalence of tuberculosis. , it shows that how skeletal tuberculosis is actually managed in our environment (Hospitals) where the disease remains a public health issue, but significant, percentage of osteoarticular involvement.

REFERENCE

1. WHO Tuberculosis control. WHO Tech. Rep. Ser, 1982; 671:1-26.
2. WHO Global tuberculosis control, surveillance, planning and financing, WHO report 2006; 14-35.
3. WHO Weekly epidemiological Record, 23rd January 2004; 4: 1-12.
4. Al-Saleh S, Al-Arfaj A, Naddaf H, Haddad Q, Memish Z (1998) Tuberculous arthritis: a review of 27 cases. Ann Saudi Med1998; 18: 368–369.
5. Garrido G, Gomez-Reino JJ, Fernandez-Dapica P et al. A Review of Peripheral Tuberculous Arthritis. Sem Arthritis Reum 1988; 18:142–9.
6. González-Gay MA, García-Porrúa C, Cereijo MJ et al. The clinical spectrum of osteoarticular tuberculosis in non-human immunodeficiency virus patients in a defined area of northwestern Spain (1988–97). Clin Exp Rheumatol 1999; 17: 663–9.
7. Gómez Rodríguez N, Ibáñez Ruán J, Ferreiro Seoane JL et al. Tuberculosis extrapulmonar diseminada con

afección cutánea, ganglionar y ósea. An Med Interna 1999; 10: 525–6.

8. Meier JL. Mycobacterial and fungal infections of bone and joints. Curr Opin Rheumatol 1994; 6: 408–14.
9. Evanchik CC, Davis DE, Harrington TM. Tuberculosis of Peripheral Joints: An Often Missed Diagnosis. J Rheumatol 1986; 13:187–9.
10. Goldblatt M, Cremin BJ. Osteoarticulat tuberculosis; its presentation in coloured races. Clin Radiol 1978; **29:**669-77.
11. Cordero M, Sanchez I. Brucellar and tuberculous spondylitis. A comparative study of their clinical features. J Bone Joint Surg Br1991; 73: 100–3.
12. Ur-Rahman N, Jamjoom ZA, Jamjoom A. Spinal aspergillosis in nonimmunocompromised host mimicking Pott's paraplegia. 1: Neurosurg Rev 2000; 23: 107–11.
13. Jacobs JC, Li SC, Ruzal-Shapiro C et al. Tuberculous Arthritis in Children. Diagnosis by Needle Biopsy of the Synovium. Clin Pediatr (Phila) 1994; 33: 344–8.
14. Houshian S, Poulsen S, Riegels-Nielsen P. Bone and joint tuberculosis in Denmark. Increase due to immigration. Acta Orthop Scand 2000; 71: 312–5.
15. Ellis ME, El-Ramahi KM, Al-Dalaan AN. Tuberculosis of peripheral joints: a dilemma in diagnosis. Tuber Lung Dis 1993; 74:399–04.
16. Sukamal Bisoi**,** Amitabha Sarkar**,** Sharmila Mallik**,** Anima Haldar**,** Dibakar Haldar , A study on performance, response and outcome of treatment under RNTCP 2007;32:245-48.
17. Gottlieb J, Noer HH. Skeletal tuberculosis. Two case reports with a delay in diagnosis. Acta Orthop Belg 1989; 55: 505–8.
18. Poppel MH, Lawrence LR, Jacobson HG, Stein J. Skeletal tuberculosis: a roentgenographic survey with reconsideration of diagnostic criteria. Am J Roentgenol Radium Ther Nucl Med 153; **70:** 36-63.
19. K Kumar, MBL Saxena. Multifocal Osteoarticular Tuberculosis. International Orthopaedics 1988; 12:135-38.
20. Ruiz G, Rodrigues JG, Giierri ML, Gonzalez A (2003) Osteoarticular tuberculosis in a general hospital during the last decade. Clin Microbiol Infect 9: 919-923
21. KD Vaughan, Extraspinal osteoarticular tuberculosis: a forgotten entity. West Indian med. j. 2005; 54:3.