Research Article

A study of clinical pattern of tuberculous lymphadenitis in children

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Abstract

Introduction: Tuberculosis is still a major health hazard in children in India[2]. Tuberculous cervical adenitis is also known as Scrofula the Latin word brood sow. It has afflicted man for at least 3,000 years and if we assume it frequently coexists with spinal tuberculosis, there is evidence that it has been present since Neolithic times. **Amis and Objectives:** To study the various clinical features observed in children suffering from tuberculous lymphadenitis attending treat airy care center. **Material and Method:** The present study was conducted in the S.R.T.R. Medical College Ambajogi. Total 50 newly diagnosed cases of tuberculous lymphadenitis in children less than 12 years of age were enrolled in the study. The cases were diagnosed by Fine Needle Aspiration Cytology or Histopathology. The clinical record of each case was studied which included age, sex, nutritional status, family history of contact with tubercular patient, status of BCG vaccination. Mantoux test was done in aal the children. Details clinical examination was done in all children including lymph nodes involved. X-ray chest and abdominal USG was also performed in all children. The findings were entered in the Microsoft excel and presented using appropriate tables and graphs. **Results:** The maximum number of patients (44%) was in the age group 7-9 years. The male to female ratio is 1.17: 1. Within 4 month of illness 62% presented to hospital. All patients presented with swelling. Fever was present in 96% cases, Loss of appetite was present in 38% cases and Loss of weight was seen in 32% cases. Multiple, matted enlarged Cervical nodes is the common presenting complaints. Mantoux test was positive in 66% cases whereas in 6% cases the test was borderline. ESR was elevated in 68% cases. In 78% cases the specimen was negative for AFB by Z-N staining technique. Chest x ray and USG abdomen was showed no abnormality in majority of cases. **Conclusion:** Thus we conclude that tuberculous lymphadenitis is also common in children with male predominance. Multiple, matted enlarged Cervical nodes is the common presenting complaints with raised ESR and positive mantoux test as common clinical finding.

Keywords: tuberculous lymphadenitis, cervical nodes, mantoux test.

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INTRODUCTION

Tuberculosis has been with us since the Dawn of mankind and it ravaged mankind fro centauries. Indeed, man may have been effected by it ever since he evolved, as a species as this planet. In, India, the earliest references are found in the Rigveda (1500 B.C.). The Atharva Vedas and the Ayurveda (700 B.C.). The later describes a set of symptoms which can be compared to those of tuberculosis. Substrata described the disease and maintained that it was difficult to treat, and his treatment was based largely on hygiene and diet.[1] The concept that tuberculosis is infectious was first proved by Villamin and Koch in 19th century and was followed by the discovery of the tubercle bacillus in 1882, by Robert Koch. Flugge in 1897, demonstrated that the main channel of infection was by inhalation of Bacilli.[1] Tuberculosis is still a major health hazard in children in India[2]. Tuberculous cervical adenitis is also known as Scrofula the Latin word brood sow. It has afflicted man for at least 3,000 years and if we assume it frequently coexists with spinal tuberculosis, there is evidence that it has been present since Neolithic times.[3] Lymphadenitis is the most common clinical presentation of extrapulmonary tuberculosis. Tuberculous lymphadenitis can be local

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manifestation of the systemic disease. Tuberculous lymphadenitis most frequently involves the cervical lymph nodes (Figure 1) followed in frequency by mediastinal, axillary, mesenteric, hepatic portal, perihepatic and inguinal lymph nodes.[4,5] Mycobacterial infection should be considered in the differential diagnosis of a cervical swelling, especially in endemic areas. The duration of symptoms before diagnosis may range from few weeks to several months. [5,6] In M. tuberculosis lymphadenitis systemic symptoms are common. Classically patients present with low grade fever, weight loss and fatigue and somewhat less frequently with night sweats.[7,8] Cough is not a prominent feature of tuberculous lymphadenitis.[7,8] Up to 57% of patients have no systemic symptoms.28 Multiplicity, matting and caseation are three important findings of tuberculous lymphadenitis.

AMIS AND OBJECTIVES

To study the various clinical features observed in children suffering from tuberculous lymphadenitis attending treat airy care center.

MATERIAL AND METHOD

The present study was conducted in the S.R.T.R. Medical College Ambajogi with the objective to study the clinical features in children suffering from tuberculous lymphadenitis. For this purpose total 50 newly diagnosed cases of tuberculous lymphadenitis in children less than 12 years of age were enrolled in the study. The cases were diagnosed by Fine Needle Aspiration Cytology or Histopathology. Children with diagnosis of tuberculous lymphadenitis (excluding BCG – induced axillary / cervical lymphadenitis) attending the Pediatric Out-Patient Department of SRTR Medical College were studied. Only those children in whom the typical hitopathological features of a granulamatous legion of tuberculosis demonstrated by FNAC or biopsy of lymph node were included. The clinical record of each case was studied which included age, sex, nutritional status, family history of contact with tubercular patient, status of BCG vaccination. Mantoux test was done in aal the children. Details clinical examination was done in all children including lymph nodes involved. X-ray chest and abdominal USG was also performed in all children. The montoux test was considered positive when the indurations were 10 mm or more after 48 hrs of intradermal "injection of 1 TU of purified protein derivative (PPD –RT 23 of BCG vaccine laboratory, Madras). The findings were entered in the Microsoft excel and presented using appropriate tables and graphs.

RESULTS

Table 1: Age and sex distribution of patients

		No. of patients	Percentage
Age (Years)	0-3	9	18%
	4-6	10	20%
	7-9	22	44%
	10-12	9	18%
Sex	Male	27	54%
	Female	23	46%

The maximum number of patients 22 (44%) were in the age group 7-9 years amongst the remaining 10 (20%) cases were between 3-6 years of age, 9 (18%) cases each in age group 0-3 years and 10-12 years. It was observed that out of 50 cases 27 (54%) cases were males and 23(46%) were females. And the male to female ratio is 1.17: 1.

Table 2: Distribution according to Duration of Illness and symptoms

		No. of patients	Percentage
Duration of Illness	0-4 months	31	62%
	5-8 months	10	20%
	9-12 months	9	18%
Symptoms*	Swelling	50	100%
	Fever	48	96%
	Loss of apetite	19	38%
	Loss of Weight	16	32%
	Pain in abdomen	5	10%
	Cough	3	6%
	Discharge	2	4%

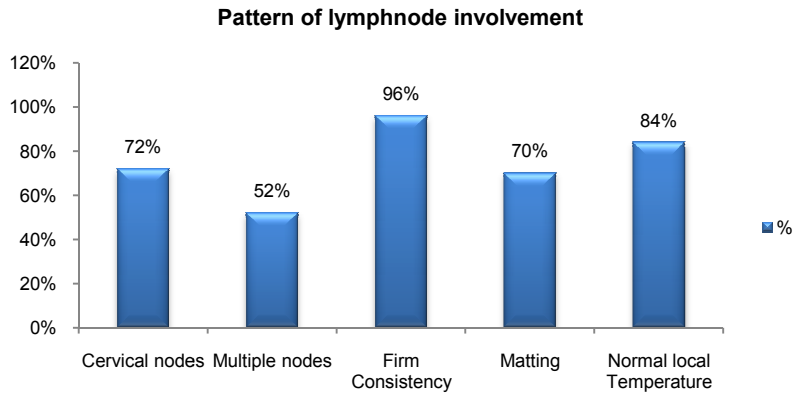
Passing worms in stools	2	4%
Deformity of back	1	2%

* Multiple responses obtained

It was observe that most of the patients (62%) presented with in 4 month of illness. In 20% cases duration of illness was 5-8 months and in 18% cases the duration of illness was 9-12 months. It was seen that all patients presented with swelling. Fever was present in 96% cases, Loss of appetite was present in 38% cases and Loss of weight was seen in 32% cases. Pain is abdomen was present in 10% cases in which 4% cases was having history of passing worms in stools. Cough was present in 6% cases; discharging sinus in 4% cases and 2% case presented with back deformity.

Table 3: Distribution according to lymph node involvement

		No. of patients	Percentage
Location	Cervical	36	72
	Axillary	4	8
	Inguinal	3	7
	Multiple	7	14
Number of Nodes	Single	16	32
	Two	8	16
	Multiple	26	52
Consistency	Firm	48	96
	Hard	1	2
	Soft	1	2
Characteristics	Matting	35	70
	Discret and Mobile	15	30
	Discharging Sinus	5	10
	Tenderness	15	30
Local Temperature	Normal	42	84
	Increased	8	16



It was evident that cervical lymph nodes were involved in 72% cases. In 8% cases axillary group of lymph nodes were involved and in 6% case inguinal lymph nodes were involved whereas in 14% cases multiple groups of lymph nodes were involved. It was observed that maximum no. of cases having cervical lymph nodes were in posterior triangle of neck i. e. 22 (46%) of total cases. It was observed that in 52% cases multiple nodes were involved, while in 32% cases only one node was involved and in 16% cases two nodes were involved. Lymph nodes involved were firm in consistency in 96% cases while in only 2% cases the consistency was hard. It was observed that the lymph nodes were matted in 70% cases whereas the nodes were discrete and mobile in 30% cases. Discharging sinuses was present in 10% cases and tenderness was present in 30% cases. The local temperature of swelling was raised in 16% cases.

Table 4: Distribution according various investigations

		No. of patients	Percentage
Mantoux test	Positive	33	66%
	Negative	14	28%
	Borderline	3	6%
ESR Finding	0-24 mm	16	32%
	25-50 mm	26	52%
	> 50 mm	8	16%
ZN staining	Positive	11	22%
	Negative	39	78%

Mantoux test was positive i.e. when the indurations was 10 mm of more after 48 hours of intradermal injection of ITU of purified protein derivative PPD in 66% cases whereas in 6% cases the test was borderline. ESR i.e. Erythrocyte Sedimentation Rate was elevated in 68% cases out of which in 52% cases it was in range of 25-50 mm at the end of first hour. While in 16% cases the ESR was more than 50 mm at the end of first hour. In 32% cases the ESR was in normal range. It was observed that in 78% cases the specimen was negative for AFB by Z-N staining technique.

Table 5: Distribution according to X-ray Chest and USG abdomen findings

		No. of patients	Percentage
CXR Abnormalities	No Abnormality Detected	41	82%
	Hillar Lymphadenopathly	2	4%
	Brocnchitis	2	4%
	Pneumonitis	2	4%
	Fibrocaseous Pulmonary Koch	1	2%
	Broncho pheumonia	1	2%
	Mediastinal Windeing	1	2%
USG abdomen	Mesenteric Lymphadenopathy	2	4%
	Renal Calculi	1	2%
	Pott's Spine	1	2%
	No abnormality	46	92%

It was observed that in majority of patients (82%) abnormality was detected on X-ray chest. 4% cases showed changes suggestive of Hilary lymphadenopathy, bronchitis and pneumonitis each. No abnormality was detected by USG abdominal in majority (92%) cases. While only 8% cases showed abnormalities on USG abdominal. 4% cases shows mesenteric lymphadenopathy.

DISCUSSION

The present study was conducted in S.R.T.R. Medical college Ambajogai to study the various clinical features of Tuberculous lymphadenitis observed in children The majority of patients (44%) were in the age group 7-9 years whereas as the remaining 20% cases were between 3-6 years of age, 18% cases each in age group 0-3 years and 10-12 years. This observation was contrary to the observation by Agrons G.A. *et al*[9] who observed distribution of children suffering from pulmonary tuberculosis showed clustering of below 5 years and above 14 years of age. It was observed that out of 50 cases 27 (54%) cases were males and 23(46%) were females. And the male to female ratio is 1.17: 1. Thus in our study there was male preponderance which was consistent with the results of other studies.[10] It was observe that most of the patients (62%) presented with in 4 month of illness. In 20% cases duration of illness was 5-8 months and in 18% cases the duration of illness was 9-12 months. It was seen that all patients presented with swelling. Fever was present in 96% cases, Loss of appetite was present in 38% cases and Loss of weight was seen in 32% cases. Pain is abdomen was present in 10% cases in which 4% cases was having history of passing worms in stools. Cough was present in 6% cases; discharging sinus in 4% cases and 2% case presented with back deformity. The lymph nodes at cervical region were found enlarged in majority of case, followed by those at the axillary and inguinal regions and this pattern is also in accordance to other earlier studies.[11,12] It was observed that in 52% cases multiple nodes were involved, while in 32% cases only one node was involved and in 16% cases two nodes were involved. Studies by Domb and Chole[13] and Dietal and Seldanha[14] have suggested a typical pattern of involved nodes in tubercular lymphadenitis as multiple, malted bilateral and usually posterior

adenopathy. In only 46% of children there was involovement of nodes in the post triangle of neck. This suggests that there is no definite or typical location of involved nodes in children suffering from tubercular lymphadenitis. In contrast the study in adults of Huhti *et al*[15] showed nearby half the patients had tubercular nodes on right side of the neck to which no logical reason was assigned. However, multiplicity and matting of adjoining lymph nodes are consistent finding in children with tubercular lymphenitis. Lymph nodes involved were firm in consistency in 96% cases while in only 2% cases the consistency was hard. It was observed that the lymph nodes were matted in 70% cases whereas the nodes were discrete and mobile in 30% cases. Discharging sinuses was present in 10% cases and tenderness was present in 30% cases. The local temperature of swelling was raised in 16% cases which was suggestive of active infection. Mantoux test was positive in 66% cases whereas in 6% cases the test was borderline. Similar findings were also reported by Purohit *et al*[10] in their study. However in contrary to our study, Talmi *et al*[16] and Vimlesh *et al*[17] higher Mantoux test positive cases (80% and 85% respectively). ESR i.e. Erythrocyte Sedimentation Rate was elevated in 68% cases out of which in 52% cases it was in range of 25-50 mm at the end of first hour. While in 16% cases the ESR was more than 50 mm at the end of first hour. In 32% cases the ESR was in normal range. It was observed that in 78% cases the specimen was negative for AFB by Z-N staining technique. It was observed that in majority of patients (82%) no abnormality was detected on X-ray chest. 4% cases showed changes suggestive of Hilary lymphadenopathy, bronchitis and pneumonitis each. Schurit *et al*[18] and Vimlesh *et al*[17] observed 24% and 22% cases with abonormal X-ray chest findings which was comparable with the present study (18%). Purohit *et al*[10] observed higher rate (31%) of abonormal X-ray chest findings. No abnormality was detected by USG abdominal in majority (92%) cases. While only 8% cases showed abnormalities on USG abdominal. 4% cases showed mesenteric lymphadenopathy.

CONCLUSION

Thus we conclude that tuberculous lymphadenitis is also common in children with male predominance. Multiple, matted enlarged Cervical nodes is the common presenting complaints with raised ESR and positive mantoux test as common clinical finding.

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