Sournal or Acte arcs	Original Research Paper	Pathology
	A Study of Histopathological Spectrum	n of Tuberculosis

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TRACT	Introduction: Tuberculosis is the major health problem in India. Thiswas a hospital based one year study to know the burden of disease among males and females and various age group. Aim: To know the role of histopathology in diagnosing tuberculosis. Material and methods: 34 cases in one year were included in the study and specimen were received, processed and staiped by H& E stain. Results: 52.94% cases were female and intestine was the most common affected area by				

tuberculosis. **Conclusion:** Histopathology plays pivotal role in diagnosing tuberculosis. In such cases tuberculosis was not suspected clinically even though it was diagnosed at unsuspected sites by judicious histopathological examination insuring the correct line of treatment

KEYWORDS

Tuberculosis, histopathology

Introduction:

Tuberculosis(TB) remains a major global public health problem. It is estimated that about one-third of the world's population is infected with Mycobacterium tuberculosis. There were an estimated 8 million new cases of TB, resulting in 1.9 million deaths, with the greatest burden of disease in developing nations.^[1-3]More than 4000 people died daily in both pulmonary and extra pulmonary tuberculosis related illnesses.^[4]Tuberculosis infection can be of pulmonary or extra pulmonary type. After primary infection, TB may reactivate at anytime and anywhere in the body. Recent studies have suggested that the sites of extra pulmonary tuberculosis are lymph nodes in the neck, the bones, the serous membranes, and the cervical region. Tuberculosis of the lymphatic system is one of the most common of all extra pulmonary tuberculosis.

Materials and methods:

A hospital based one year study from June 2015 to June 2016 was carried out in Histopathology section, Pathology department, P.D.U Medical College and hospital, Rajkot. Total 34 cases of tuberculosis were included in this study. The fresh specimen was immersed in 10% formalin for fixation. The fixed specimen is then placed in a machine that automatically goes through an elaborate overnight cycle that removes all the water from the specimen and replaces it with paraffin wax. The next morning the paraffin-impregnated specimen was embedded in a larger block of molten paraffin. Then the block was trimmed and sectioned by microtome. Finally, sections were floated out on a water bath and picked up on a glass slide. The paraffinwas dissolved from the tissue on the slide by incubator and stained by H/E Stain.

Result:

In this study a total of 34 cases were included out of which 16 (47.06%) were males and 18 (52.94%) were females.83% of the cases included in the study was from lower socioeconomic class.Most common site involved in this study was small intestine which is 26.47% followed by lymphnodes (20.58%).lleum was most commonly affected site in intestinal TB followed by ileo-caecal junction. Intestinal TB is more common in the male.Most common age group is 31 to 40 years in male and 11-30 years in female.

Table 1:Distribution of total 34 cases according to age group and sex

Age group (in years)	Male(16)	Percentage (100%)	Female (18)	Percentage (100%)
<1	0	0 %	2	11.11 %
1-10	0	0 %	0	0 %
11-20	2	12.5 %	4	22.22 %
21-30	3	18.75 %	4	22.22 %
31-40	5	31.25 %	2	11.11 %
41-50	2	12.5 %	2	11.11 %
51-60	2	12.5 %	3	16.67 %
61-70	2	12.5 %	1	5.56 %

Figure 1:Pie chart showing distribution of 34 cases according to site of lesion



Discussion: Table 2:Comparison of Intestinal tuberculosis with other study

	Present study	Das & Shukla et al ^[5] (1976)	Jakubowski et al ^[6] (1988)	J.C. Vij et al ^[7] (1992)	Dr. Chetankishandas et al ^[8] (2015)
Total no of cases	34	182	82	99	72

Intestinal tuberculosis	9	93	33	77	35
%	26.47	51.09	40.24	77.78	48.61

Our study is comparable with other studies (table2) that intestine is most commonly affected by tuberculosis.lleum was most commonly affected site in intestinal TB followed by ileo-caecal junction. Intestinal TB is more common in the male.

Table 3:Comparison of TB Lymphadenitis with other study

	Present Study	Hussain gad Elkarim Ahmed et al ^[9] (2011)	Md.Atiqur Rahman et al ^[10] (2012)
Supraclavicular	2	0	4
Axillary	2	9	9
Cervical	1	74	41
Inguinal	1	5	3
Mediastinal	0	4	0
Proximal ileum	1	0	0
Submandibular	0	2	0
Mesenteric	0	6	7
Total no of cases	7	100	64

In our study Axillary and supraclavicular lymphnodes are most commonly affected 33.33% in contrast to Hussian Gad Elkarimahmed et al^[9]and Md.Atiqur Rahman et al^[10]in which cervical lymphnodes are affected more

In our study out of 6 cases of skin tuberculosis 4 cases (66.6%) are ofTuberculousverrucous cutis(TBVC) and 2 cases are of cutaneous tuberculosis.A similar study by Sumit Grover ^[11],out of 26 cases are of TBVC and 2 cases are of cutaneous tuberculosis.In both the study lower extremities were most commonly affected.

The main limitations of this study is unable to use more sensitive advanced molecular techniques like PCR and culturing method for the detection of M. tuberculosis. This is due to facility and logistics constraints. After the specimens are stained by H/E staining method, caseating necrosis was observed during microscopic examination in 28 (82%) of the specimens. Those showing histopathological pattern containing(giant cells + granuloma + caseation) were considered as strong evidence, and the other showing less evidences (e.g., ill-defined aggregates of epithelioid , histiocytes only, palisading granulomas without necrosis and giants cells, etc.) were considered as weaker evidence. Accordingly, the strong evidence (positive) was used as a gold standardfor comparing the other variables. Accordinglyfrom 34patients,28 were categorized as having strong evidences (positive) and the remaining 6 were detected with weaker evidences (positive), cases. Therefore, it is advisable to use more specific and sensitive methods, suchas, PCR or immunohistochemistry.



Figure 1:Tuberculosis Lymphadenopathy



Figure 2:Tuberculosis of external nasal growth scrapping



Figure 3:Cutaneous Tuberculosis



Figure 4:Tuberculosis of omentum

Conclusion:

Increased incidence of tuberculosis needs an all round approach with communication between clinicians and pathologists with strict adherence to clinical criteria while choosing proper site of biopsy, age of lesion, nature and depth of biopsy is a must. Histopathology plays important role to elucidate dilemma and it is useful to diagnose the disease and subcategorize with certainty during initial stagesPrompt treatment at right time can definitely prevent life threatening future complication of TB if diagnosed early.

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