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A Study on Various Types of Clinical Presentation and Management of Abdomen Tuberculosis

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Abstract
Entire gastrointestinal system can be affected due to tuberculosis (TB) including pancreas, peritoneum and the biliary system. This study aimed to study the clinical presentation and the management of abdominal tuberculosis among patients reporting to a tertiary care center. From November 2019 to December 2021, a prospective study was done among 50 patients diagnosed with abdominal tuberculosis in a tertiary care hospital. Data was collected based on their clinical features, radiological evaluation, diagnosis and treatment. It was tabulated in excel and analysed using IBM SPSS v23. The mean age of the participants is 44.24 years (S.D=17.1 years). Majority of them were males (60%). Fever was present in all cases (100%), Clinical examination revealed rigidity in 30% and guarding in 26% of the cases. ESR was elevated in 72% of the cases while Mantoux was positive in 62% of the cases. CBNAAT was positive in 84% of the cases. Barium study showed narrowed ileum with pulled up caecum with mass in 2% . In USG abdomen, distal ileal obstruction with proximal ileal to and fro peristalsis in 26%. CT abdomen showed dilated Bowel Loops with Transition Point at Ileum in 26% of the cases. Colonoscopy/ Sigmoidoscopy was normal in 42% of cases. Diagnostic laparoscopy showed Distal Ileal Stricture And Dilated Bowel Loops in 20% of cases and ileal perforation in 12% of cases. Diagnosis was Ileocaecal Ulcerative Tuberculosis in 38% of the cases. Treatment differed between different cases. Emergency ileostomy followed by antitubercular treatment (ATT) regimen and ostomy reversal was done in 46% of the cases. Early diagnosis and treatment is essential for better prognosis. Delayed diagnosis leads to higher incidence of morbidity and mortality. It may lead to higher frequency of surgical intervention, chemotherapy with ATT and prolonged hospitalisation.

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I. Introduction

Entire gastrointestinal system can be affected due to tuberculosis (TB) including pancreas, peritoneum and the biliary system. The prevalence of TB and HIV co-infection decides the incidence of the disease and severity depends on other comorbid conditions and resistance to treatment. The incidence is common between 25 years to 45 years of age. The primary site of infection is usually the lungs from where it spreads through blood, lymphatics, ingestion of bacilli from sputum or infected milk or from direct spread from nearby sites. Sometimes, abdominal lymph nodes are the only parts that are affected without the involvement of other organs. Ileocecal area is the most common site for abdominal tuberculosis. The infection presents in the continuum of granuloma formation, caseation, mucosal ulceration, fibrosis,
and scarring[1-4]. This study aimed to study the clinical presentation and the management of abdominal tuberculosis among patients reporting to a tertiary care center.

II. Methods

From November 2018 to December 2020, a prospective study was done among 50 patients diagnosed with abdominal tuberculosis in a tertiary care hospital. Data was collected based on their clinical features, radiological evaluation, diagnosis and treatment. It was tabulated in excel and analysed using IBM SPSS v23.

III. Results

The mean age of the participants is 44.24 years (S.D=17.1 years). Majority of them were males (60%). Fever was present in all cases (100%), followed by loss of appetite (98%), loss of weight (96%), abdominal pain (94%), abdominal distension (54%), abdominal mass

(30%), diarrhea (10%), discharge per anus (6%), obstructive symptoms (36%) and jaundice (1%). Clinical examination revealed rigidity in 30% and guarding in 26% of the cases. Chest x-ray showed air under diaphragm in 16% of cases. X-ray abdomen erect showed air fluid level in 36%, ground glass appearance in 16%, dilated bowel loops in 2%, no air fluid levels in 18% and was normal in 28% of the cases. ESR was elevated in 72% of the cases while Mantoux was positive in 62% of the cases. CBNAAT was positive in 84% of the cases. Barium study was normal in 20%, not done in 30% while pulled up caecum was seen in 12%, narrowed ileum with pulled up caecum with mass was seen in 2% while contrast did not pass in 36% of the cases. In USG abdomen, caecal thickening was see in 10% of cases and distal ileal obstruction with proximal ileal to and fro peristalsis in 26%. CT abdomen showed dilated Bowel Loops with Transition Point at Ileum in 26% of the cases. Colonoscopy/ Sigmoidoscopy was normal in 42% of cases, not done in 36% whereas mucosal nodules and ulcer was seen in 10% of cases. Diagnostic laparoscopy showed Distal Ileal Stricture And Dilated Bowel Loops in 20% of cases and ileal perforation in 12% of cases. Diagnosis was Ileocaecal Ulcerative Tuberculosis in 38% of the cases, peritoneal TB in 10%, TB mesenteric lymphadenitis in 10%, and TB fistula in ano in 6% [table 8]. Treatment differed between different cases. Emergency ileostomy followed by anti-tubercular treatment (ATT) regimen and ostomy reversal was done in 46% of the cases. ATT with conservative management was done in 28% of the cases, ATT/lap assisted biopsy was done in 14% of the cases, emergency laparotomy with primary closure was done in 6% of cases, ATT with fistulectomy was done in 4% and ATT with laparoscopic drainage was done in 2% of the cases.

S.No	Sociodemographic parameters	Measures	Value
1	Age (in years)	Mean	44.24 years
		Standard Deviation	17.1 years
2	Gender	Male (n/%)	30 (60%)
		Female (n/%)	20 (40%)

Table 1: Sociodemographic features

S.No	Clinical Features	Incidence	Frequency	Percentage
1	Abdominal pain	Yes	47	94
		No	3	6
2	Abdominal distension	Yes	27	54
		No	23	46
3	Abdominal Mass	Yes	15	30
		No	35	70
4	Fever	Yes	50	100
5	Loss of appetite	Yes	49	98
		No	1	2
6	Weight Loss	Yes	48	96
		No	2	4
7	Discharge per anum	Yes	3	6
		No	47	94
8	Diarrhea	Yes	5	10
		No	45	90
9	Obstructive symptoms	Yes	18	36
		No	32	64
10	Jaundice	Yes	1	2
		No	49	98
11	Guarding	Yes	13	26
		No	37	74
12	Rigidity	Yes	15	30

		No	35	70

Table 2: Clinical Features

S.No	Clinical evaluation	Categories	Frequency	Percentage
1	Chest X-ray	Normal	42	84
		Air under diaphragm	8	16
2	X-ray abdomen erect	Normal	14	28
		No air fluid level	9	18
		Air fluid level present	18	36
		Ground glass appearance	8	16
		Dilated bowel loops	1	2
3	ESR	Normal	14	28
		Elevated	36	72
4	Mantoux	Positive	31	62
		Negative	19	38
5	CBNAAT	Positive	42	84
		Negative	8	16
6	Barium Study	Not done	15	30
		Normal	10	20
		Pulled up Caecum	6	12
		Contrast Not Passed	18	36
		Narrowed Ileum With Pulled Up Caecum With Mass	1	2

Table 3: Clinical evaluation

	USG Abdomen	Frequency	Percent
	Ascites	1	2.0
	Caecal Thickening	5	10.0
	Distal Ileal Obstruction With Proximal Ileal To And Fro Peristalsis	13	26.0
	Free Fluid +	1	2.0
	Free Fluid + Caecal Thickening	5	10.0
	Free Fluid + RIF Mass	2	4.0
	Hepatomegaly With Multiple Nodules	1	2.0
	Ileo Caecal Wall Thickening	1	2.0
	Ileocaecal Mass	2	4.0
	Ileocaecal Mass With To And Fro Peristalsis	4	8.0
	Mesentric Lymphadenitis /No Dilated Bowel Loops	5	10.0
	Mesentric Lymphadenitis With Surrounding Abscess	1	2.0
	Normal	3	6.0
	Paniculitis	1	2.0
	Paniculitis With Peritonitis	5	10.0
	Total	50	100.0

Table 4: USG abdomen

	CT Abdomen	Frequency	Percent
	Ascitis	1	2.0
	Caecal Thickening	5	10.0
	Caecal Thickening With Pneumoperitoneum	3	6.0
	Caecal Thickening Pneumoperitoneum	4	8.0
	Dilated Bowel Loops With Transition Point At Ileum	13	26.0
	Hepatomegaly With Multiple Nodules	1	2.0
	Ileo Caecal Wall Thickening	1	2.0
	Ileocaecal Mass With Dilated Bowel Loops	6	12.0
	Ileocaecal Mass With Pneumoperitoneum	1	2.0
	Mesentric Lymphadenitis /No Dilated Bowel Loops	5	10.0
	Mesentric Lymphadenitis With Surrounding Abscess And Air Pockets	1	2.0
	Normal	3	6.0
	Paniculitis	1	2.0
	Paniculitis With Peritonitis	5	10.0
	Total	50	100.0

Table 5: CT abdomen

	Colonoscopy/Sigmoidoscopy	Frequency	Percent
	Caecal Mass	2	4.0
	Chronis Fistula With Tubercles At 6'o Clock	3	6.0
	Mucosal Nodules And Ulcer	5	10.0
	Mucosal Nodules With Thickening	1	2.0
	Normal	21	42
	Not Done	18	36.0
	Total	50	100.0

Table 6: Colonoscopy/Sigmoidoscopy

	Diagnostic Laparoscopy	Frequency	Percent
	Distal Ileal Stricture And Dilated Bowel Loops	10	20.0
	Hepatomegaly With Multiple Nodules	1	2.0
	Ileal Perforation	6	12.0
	Ileal Perforation With Ileo Caecal Mass	1	2.0
	Mesentric Lymphadenitis With Moderate Abscess	1	2.0
	Not Done	20	40.0
	Omental Tubercles	2	4.0
	Peritoneal Tubercles	4	8.0
	Rif Mass With Dilated Bowel Loops	4	8.0
	Tabes Mesentrica	1	2.0
	Total	50	100.0

Table 7: Diagnostic Laparoscopy

Diagnosis	Frequency	Percent
Ileal Tuberculosis	2	4.0
Ileocaecal Tuberculosis With Obstruction	1	2.0
Ileocaecal Hyperplastic Tuberculosis	1	2.0
Ileocaecal Hyperplastic Tuberculosis With Acute Obstruction	1	2.0
Ileocaecal Hyperplastic Tuberculosis With Sub Acute Obstruction	1	2.0
Ileocaecal Ulcerative Tuberculosis	19	38.0
Ileocaecal Ulcerative Tuberculosis With Acute Obstruction	2	4.0
Ileocaecal Ulcerative Tuberculosis With Perforation	1	2.0
Ileocaecal Ulcero Hyperplastic Tuberculosis With Perforation	2	4.0
Ileocaecal Ulcero Hyperplastictuberculosis	1	2.0
Intra Abdominal Cold Abscess	1	2.0
Massive Tb Mesentric Lymphadenitis With Acute Obstruction	1	2.0
Peritoneal TB	5	10.0
TB Fistula In Ano	3	6.0
TB Liver	1	2.0
TB Mesenteric Lymphadenitis	5	10.0
TB Omentum	2	4.0
Uncomplicatted Ileocaecal Hyperplastic Tuberculosis	1	2.0
Total	50	100.0

Table 8: Diagnosis

Treatment	Frequency	Percent
ATT / Lap Assisted Biopsy	7	14.0
ATT /Conservative Management	14	28.0
ATT + Fistulectomy	2	4.0
ATT + Laparoscopic Drainage	1	2.0
Emergency Ileostomy --> ATT-- >Ostomy Reversal	23	46.0
Emergency Laparotomy With Primary Closure	3	6.0
Total	50	100.0

Table 9: Treatment

IV. Discussion

TB is a major public health crisis in India[5]. Abdominal tuberculosis presents along a wide spectrum of clinical features which requires a lot of diagnostic and therapeutic acumen to diagnose and treat this disease[6]. Literature shows that it is common in females whereas the present study shows a higher incidence among males[7-11]. It is common in the younger age

group as seen in our study[12,13].Fever was present in all cases (100%), followed by loss of appetite (98%), loss of weight (96%), abdominal pain (94%), abdominal distension (54%), abdominal mass (30%), diarrhea (10%), discharge per anum (6%), obstructive symptoms (36%) and jaundice (1%). Clinical examination revealed rigidity in 30% and guarding in 26% of the cases. Chest x-ray showed air under diaphragm in 16% of cases. X-ray abdomen erect showed air fluid level in 36%, ground glass appearance in 16%, dilated bowel loops in 2%, no air fluid levels in 18% and was normal in 28% of the cases. ESR was elevated in 72% of the cases while Mantoux was positive in 62% of the cases. CBNAAT was positive in 84% of

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V. Conclusion

One of the most common extra-pulmonary manifestations of tuberculosis is intestinal tuberculosis. The incidence is increasing in areas where the conditions are impoverished, with poor nutrition and overcrowding. The varied presentation of abdominal tuberculosis leads to delayed diagnosis. Early diagnosis and treatment is essential for better prognosis. Delayed diagnosis leads to higher incidence of morbidity and mortality. It may lead to higher frequency of surgical intervention, chemotherapy with ATT and prolonged hospitalisation.

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