



CLINICAL STUDY ON VARIOUS SURGICAL PRESENTATION OF ABDOMINAL TUBERCULOSIS

General Surgery

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ABSTRACT

Background: Abdominal tuberculosis has a diversity of presentations posing a challenge to the diagnostic and therapeutic skills of the surgeon. Varying such surgical presentations of Abdominal tuberculosis and their diagnostic modalities are studied.

Objectives: To study various surgical presentations of Abdominal tuberculosis. To study the various modalities of investigations to confirm the diagnosis.

Methods: This is a prospective cross-sectional study of all presumptive abdominal tuberculosis patients bacteriologically or clinically confirmed over a period of 2 years from June 2019 to 2021 in KAPV Govt Medical College, Trichy.

Results: 50 patients were studied. Age ranged from 18 to 60. There were 70% males and 30% females. 64% had past history of pulmonary tuberculosis. 80% presented with intestinal obstruction of which 60% is subacute, 20% acute intestinal obstruction, 6% with right iliac fossa mass, 6% with hollow viscous perforation. ESR elevated in 70%, sputum positivity only in 14%, Ascitic fluid analysis showed ADA (Adenosine deaminase) more than 39 IU/ml in 80%. CECT showed ileocaecal thickening in 22%.

Mesenteric node enlargement in 10% and stricture in 24%. Of 50 patients 23 under surgery and 27 treated with ATT.

Conclusion: The most common surgical presentation is subacute intestinal obstruction followed by acute intestinal obstruction, chronic abdominal pain, Perforative peritonitis and right iliac mass in our study. Adenosine Deaminase is one of the sensitive tool in the diagnosis of Abdominal tuberculosis in Ascitic fluid. However histopathology is the gold standard in diagnosis of abdominal tuberculosis confirmed by granuloma formation with caseating necrosis seen in almost all cases that underwent laparotomy in our study.

KEYWORDS

Abdominal Tuberculosis, ADA (Adenosine deaminase), Subacute intestinal Obstruction

BACKGROUND:

Every year, 7 million new infections and 2.5 million deaths are caused by tuberculosis, making it one of the top ten-killer diseases.[1] Along with AIDS it has acquired the "Deadly duo" status.

Abdominal tuberculosis represents the sixth most frequent form of extra- pulmonary tuberculosis after lymphatic, genitourinary, bone and joint, miliary and meningal tuberculosis.[2]

The gastrointestinal tract is involved in 65% to 78% of patients; associated peritoneal and lymph node involvement is common in these patients[3]. Tuberculous bacteria reach the gastrointestinal tract via hematogenous spread, ingestion of infected sputum or contiguous spread from adjacent organs.[4]

Perforation is a serious complication of abdominal TB associated with high morbidity and mortality.[5]

There are diversity of presentations, either acute, subacute, or chronic forms. The symptoms and signs are often quite vague and laboratory investigations, radiological findings are often inconclusive. There is no specific protocol in diagnosis and management of abdominal tuberculosis.[6]

The various modalities of surgical presentation of abdominal tuberculosis, different methods used for diagnosis are studied so as to help in the early diagnosis and better management options in testing abdominal TB and in preventing the complications, of reducing the burden of TB in India.

OBJECTIVES:

1. To study various surgical presentations of abdominal TB
2. To study various modalities of investigations to confirm diagnosis of abdominal TB.

MATERIALS AND METHODS

Study place:

Mahatma Gandhi Memorial Govt. Hospital and KAPV Govt. Medical College, Trichy.

Duration of study:

2 years (From June 2019 to June 2021).

Study Design:

Cross sectional study.

INCLUSION CRITERIA

1. All presumptive abdominal TB, bacteriologically confirmed and clinically confirmed abdominal TB patients
2. Both sexes
3. Age above 12 years

METHODS:

Ethical approval to conduct the study was obtained.

Informed consent was obtained from all the patients.

Detailed history and clinical examination was done, chest Xray, HIV testing, USG, CT abdomen done for all patients. In selected patients colonoscopy and barium study was done. Therapeutic response for the patients on conservative management is monitored. For patients undergoing surgery intraoperative findings, post operative recovery and its complications are monitored. Data analysis done using SSP software.

OBSERVATION AND RESULTS

Total of 50 patients enrolled in the study. Age ranged from 18 to 60 years. Most of the cases were in 2nd and 3rd decades (20%, 40%) of life. There were 35 males (70%), 15 females (30%), (M:F- 2.3:1) past history of pulmonary TB is present in 32 patients (64%).

Symptomatology of the patients:

Duration of Symptoms ranged from one day to few years. 42% had one or more Symptoms for more than three months. Pain abdomen was the common symptom found in 45 patients (90%), bowel disturbances, loose stools in 34 patients (68%), loss of weight in 33 patients (66%), fever in 33 patients (66%), Vomiting in 27 patients (54%), mass abdomen in 3 patients (6%).

Table No.1 Symptomatology;

Symptomatology	Frequency	Percentage%
Pain Abd.	45	90.0%
Mass. Abd.	3	6.0%
Fever	33	66.0%
Vomiting	27	54.0%
Loss of wt.	33	66.0%
Bowel Disturbances(loose stools)	34	68.0%

Physical findings:

Distension was found in 38 patients (76%), Mass in 3 patients (6%), guarding and rigidity present in 6% of cases who had hollow viscous perforation.

Mode of presentation and complication:

The most common presentation is Intestinal obstruction contributing 80% of the total, of these 60% is subacute intestinal obstruction and the rest 20% of the cases presented as acute intestinal obstruction. 6% of cases presented with mass abdomen. Hollow viscus perforation with peritonitis secondary to small bowel perforation, was the diagnosis in 6% of cases.

Table No. 2 Mode of presentation and complication:

Clinical diagnosis	Frequency	Percentage%
Acute intestinal obstruction	10	20.0
Chronic pain abdomen	4	8.0
Perforative peritonitis	3	6.0
Rt iliac fossa mass	3	6.0
Sub Acute intestinal obstruction	30	60.0
Total	50	100.0

Blood Investigations:

Erythrocyte sedimentation rate was done for all cases it ranged from 20 mm to 81mm. ESR was elevated in 70% of cases.

Sputum and Montoux:

In our study AFB was positive only in 14% of the cases and Montoux was positive in 20% of cases.

Ascitic fluid analysis.

Cytology showed leucocytes with predominantly mature lymphocytes were seen in 40% of patients. Serum albumin: Ascitic fluid albumin ratio (SAAG) of less than 1.1 with high protein is seen in 20% of the cases. ADA (Adenosine deaminase) more than 39 IU per ml is seen in 80% of the cases. In our study ADA showed higher diagnostic sensitivity and specificity to abdominal tuberculosis than other modalities. Microscopy for AFB showed positive in only 6% and culture positive in 30% of the cases.

Table No. 3 Ascitic fluid analysis:

Ascitic fluid analysis	Frequency	Percent
cytology	20	40.0
SAAG	10	20.0
ADA	40	80.0
Microbiology for AFB	3	6.0
culture for MTB	15	30.0

USG abdomen:

Done for 46 cases-20 persons had ascites (40%). Bowel thickening in 11 patients(22%), dilated bowel loops in 12 patients(24%), Ileocecal mass in 3 patients (6%).

Table No. 4 USG Abdomen findings:

USG-abdomen	Frequency	Percentage%
Ascites	20	40.0
Bowel thickening	11	22.0
dilated bowel loops	12	24.0
ileocecal mass	3	6.0
Total	46	92.0

CECT

CECT was done for 46 cases, 21 patients had ascites (42%), Bowel wall thickening in 11 patients (22%), Mesenteric node enlargement in 5 patients (10%), stricture seen in 12 patients (24%). CECT is the more sensitive tool for diagnosis abdominal TB in finding out ileocecal thickening, Mesenteric node enlargement and stricture.

Table No. 5: CT abdomen findings:

CECT- abdomen	Frequency	Percentage %
Ascites	21	42.0
stricture	12	24.0
mesenteric node	5	10.0
Bowel thickening	11	22.0
ileocaecal mass	3	6.0

Colonoscopy

8 patients underwent colonoscopy, biopsy was taken in 3, all confirming diagnosis of tuberculosis. Ascending colon narrowing was seen in seven patients.

Diagnostic laparoscopy:

9 patients underwent diagnostic laparoscopy and biopsy was taken in 5

patients. Small multiple white nodules (tuberculosis) seen in 4 patients. Omental thickening in 4 patients, Mesenteric node enlargement in 6 patients. In almost all cases that underwent laparotomy, postop histopathology showed granulomatous formation with caseating necrosis(100%).

Management:

Of 50 patients, 23 underwent surgery, 27 were treated with ATT. Indication for surgery were perforation found in 3 points(6%), acute intestinal obstruction, subacute intestinal obstruction where conservative management failed.

Operative findings:**Table No. 6 Operative findings:**

Operative findings	Frequency	Percentage %
Adhesions	10	20.0
carcinoma caecum	1	2.0
ileal stricture	9	18.0
Perforation	3	6.0
Total	50	100.0

Operative procedure:**Table No. 7, Surgical management:**

Treatment	Frequency	Percentage %
Adhesiolysis	10	20.0
limited resection	8	16.0
Right Hemicolectomy	1	2.0
Strictureplasty	4	8.0
ATT	27	54.0
Total	50	100.0

Postoperative complications:

Paralytic ileus observed in 8 patients. 1 patient developed enterocutaneous fistula. 2 patients died after 10 days post operatively due to severe sepsis.

Outcome of surgery and chemotherapy:

Of 27 patients who were on ATT. All responded well with no complications. Patients with subacute intestinal obstruction, 50% showed complete resolution of symptoms, remaining underwent surgery. All the operated cases also were started on ATT which helped in decreasing postoperative morbidity.

DISCUSSION:

Abdominal Tuberculosis has diversity of presentation. Our aim is to study different modes of presentation and diagnostic tools that can be used for confirming the diagnosis.

In our study most of the cases were in 2nd and 3rd decades of life contributing 60% of the total and a slight male preponderance, with significant number of them having previous history of pulmonary TB.

Most common symptom in our study is abdominal pain followed by loose stools, loss of weight and fever. The most common presentation is subacute intestinal obstruction in 60% of the cases, acute intestinal obstruction in 20%, chronic abdominal pain in 8%, perforative peritonitis in 6%, RIF mass in 6% of the cases.

In the ascitic fluid Adenosine DeAminase (ADA) was found to be a sensitive tool in diagnosing abdominal tuberculosis.[7].

Histopathology is the gold standard modality in diagnosing abdominal tuberculosis[8].

CONCLUSION

1. The signs and symptoms of intestinal tuberculosis are nonspecific, and there are no unequivocal diagnostic features either clinically or radiologically. The most common presenting complaint was abdominal pain and the most common sign was abdominal tenderness.
2. Subacute intestinal obstruction(60%), acute intestinal obstruction and perforative peritonitis were the common complication seen in our study.
3. The most common diagnosis made was that of Sub acute intestinal obstruction. As a result, diagnostic laparoscopy and histopathological examination were necessary to establish confirmatory diagnosis and to avoid negative laparotomy.
4. This study supports the fact that anti tuberculosis therapy is still

the treatment of choice in abdominal tuberculosis and surgery is only indicated in complications of abdominal tuberculosis. The approach to surgery should be conservative, with the aim of saving maximum bowel length.

5. TB abdomen should be considered as an important differential diagnosis in the developing countries like India , but most of them respond well to ATT, so all patients should be started on 6 months of ATT, post operatively. ATT has helped in reducing the postoperative morbidity.

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