VOLUME-7, ISSUE-8, AUGUST-2018 • PRINT ISSN No 2277 - 8160

Original Research Paper

General Surgery

SURGICAL MANAGEMENT OF ABDOMINAL TUBERCULOSIS- A NOVEL APPROACH

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ABSTRACT

Background of the study: In spite of considerable advances in recent times, tuberculosis, particularly of the abdomen is the major health problem in India. The disease is a diagnostic enigma and the management is still controversial. Surgical treatments, both radical and conservative, are being advocated. Approximately one fifth of patients require surgical intervention. Abdominal tuberculosis (ATB) is the most important cause of morbidity.

Materials and methods: The study was done in Govt. Rajaji Hospital and Madurai Medical College from September 2013 to September 2014. 50 cases have been studied. 49 cases underwent definitive surgeries. Follow up period ranges from 1 month to 22 months.

Results: The age range of the patients was 16 to 60 years and most commonly involved age group was 20-40 years with Male to female ratio of 1.5: 1. 12% of the patients had a positive history of contact. 60% of the patients presented with intestinal obstruction. The most commonly involved site was the ileocaecal region (44%). Most common surgical procedure done was Limited (segmental) resection (46%).All cases were discharged on 6 months ATT.

Conclusion: In the present series the approach to surgery was conservative. Limited resection was preferred over Right hemicolectomy. Most of the cases had uneventful post operative period and showed good response to ATT during the follow up.

KEYWORDS : The key words are ABDOMINAL TUBERCULOSIS; SURGERY; LIMITED RESECTION; RIGHT HEMICOLECTOMY; STRICTUROPLATY.

INTRODUCTION:

Tuberculosis has been one of the oldest diseases known to mankind.

It is one of the top ten-killer diseases. It forms a major health hazard in the underdeveloped and developing countries like India despite the advent of anti tubercular chemotherapeutic drugs and near adequate control measures.. Abdominal tuberculosis is a highly endemic entity. It is most common in areas where overcrowding and under nutrition predominate.

In our country intestinal tuberculosis is the single largest causes of intestinal obstruction.

Abdominal tuberculosis represents the 6th most frequent form of extrapulmonary tuberculosis after lymphatic, genitourinary, bone and joint, miliary and meningeal tuberculosis[1-3]. Abdominal tuberculosis involves gastrointestinal tract, peritoneum, solid viscera like liver, spleen, pancreas, etc and lymph nodes. The gastrointestinal tract is involved in 65% to 78% of patients with peritoneal and lymph node involvement. Tuberculous bacteria will reach the gastrointestinal tract through blood -hematogenous spread, either ingestion of infected sputum or contiguous spread from adjacent organs. [3-8] Perforation is a serious complication of abdominal TB associated with high morbidity and mortality. [10-12] The low incidence of tuberculous perforation is due to a reactive fibrosis of the peritoneum. [12-14] However, in recent years, intestinal perforation, which was relatively rare in the past, has been reported more frequently. The cause of this remains unknown.

This common entity of protean manifestations and presentations with varied complication poses a challenge to the diagnostic & therapeutic skill and ingenuity of a surgeon.

The role of surgery in abdominal tuberculosis is:

i. Diagnostic: for Etiopathological, microbiological diagnosis.
ii. Therapeutic: for Complications like intestinal obstruction, perforation and peritonitis.

AIM:

To study the common clinical presentations and surgical management of abdominal tuberculosis and assess the complications post surgery.

OBJECTIVES OF THE STUDY:

To study the epidemiology of abdominal tuberculosis and common presentation in southern India.

To the study the surgical management and post surgical prognosis of abdominal tuberculosis.

MATERIALS AND METHODS:

A clinical study of fifty cases of abdominal Tuberculosis treated surgically in different surgical units of Govt Rajaji Hospital, Madurai was undertaken from September 2013 to 2014.

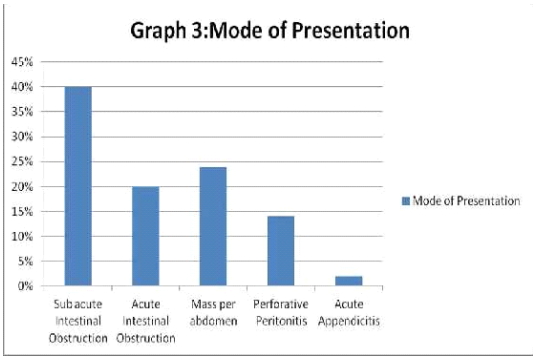
A collection of common and rare manifestations of abdominal tuberculosis is presented hereunder. A thorough history taking and physical examination were done. The different surgical procedures were evaluated. All the routine investigations concerning the disease were done; a few patients were subjected to special investigations. The ensuing complications of the treatment were studied and the cases were followed up.

OBSERVATIONS AND RESULTS:

In this study the age of the patients varied from 16 to 60 years. The mean age is 32.68 years. Most of the cases were in 2nd, 3rd, and 4th decades of life contributing 74%. In the present series of 50 cases 60 % of cases were males and the remaining 40 % formed by the females. No age difference was seen between males and females. Male:Female ratio was found to be 1.5 : 1.

Mode of Presentation:

Among fifty cases the most common diagnosis was that of Intestinal obstruction contributing 60% of the total and in 20% Acute intestinal obstruction was the diagnosis and in the rest of the cases Sub acute intestinal obstruction was the diagnosis, making it the single most common mode of presentation(40%).Mass per abdomen was the modes of presentation in 24% of cases. Hollow viscus perforation with peritonitis secondary to small bowel perforation, was the diagnosis in 14% of cases. One case was preoperatively diagnosed as acute appendicitis. The preoperative diagnosis was more accurate in cases with ileocaecal mass and sub acute obstruction than in cases that underwent emergency laparotomy for acute intestinal obstruction or perforative peritonitis. The most common diagnosis made other than tuberculosis were intestinal obstruction of undetermined cause or carcinoma of large bowel. Graph 3 shows various modes of presentations.



INVESTIGATIONS:

BLOOD INVESTIGATIONS:

Of all the fifty patients , 41 cases were having Haemoglobin of less than 11 gm%. Erythrocyte Sedimentation Rate (ESR) was done for all and it ranged from 20mm to 81mm after one hour. Sputum AFB was done for 10 patients, four of them showed a positive report.

RADIOLOGICAL INVESTIGATIONS:

Chest X-ray showed active infection in 4 patients.. Erect-X-Ray abdomen was done for all 50 cases, of which 22 cases showed multiple air fluid level suggesting obstruction, 7 cases had gas under diaphragm, and 21 had a normal X- ray.

Barium study was done for 16 cases, of which 3 showed narrowing of ileocaecal junction ,3 showed strictures, 5 showed pulled up caecum ,3 had ascending colon narrowing. In 2 cases studies were normal. Ultrasound abdomen was done for cases, sonological findings were that of mass in 9, mesenteric lymph node enlargement was seen in three, 13 showed dilated air filled bowel loops, free fluid was seen in 4 and in one case USG showed features of acute appendicitis. In 9 cases USG showed no abnormality. CT scan abdomen was done for 15 cases, 13 showed ileocaecal and ascending colon thickening, out of those which showed mural thickening, eight showed significant luminal narrowing.

Seven cases showed fat stranding, omental thickening and 5 showed mesenteric or Para aortic lymph node enlargement.

OTHER INVESTIGATIONS:

In the present series eight cases underwent Colonoscopy, biopsy was taken in three, all confirming the diagnosis of Tuberculosis , ascending colon narrowing was seen in seven cases, out of these three showed multiple mucosal nodules and fibrosis as well, and in one case only mucosal nodules were seen. Of the fifty cases, nine patients underwent Diagnostic Laparoscopy, and biopsy was taken in five of these cases. Small multiple whitish nodules are scattered all over the peritoneum (tubercles) were seen in four, variable degrees of omental thickening was seen in four. Ileoceaecal and ascending colon thickening seen in seven cases and mesenteric lymph node enlargement was seen in six of the cases who underwent the procedure, adhesions were seen in one.

Operative findings:

In the present series of 50 cases, forty seven cases 94%, showed features of intestinal Tuberculosis; in the remaining three, one was a case of mesenteric cold abscess at the root of mesentery pressing on jejunum, one showed features of acute appendicitis, with severely inflamed appendix and one was a case of plastered abdomen secondary to peritoneal tuberculosis, surgery was abandoned in this case.

Most of the cases had multiple findings. Of the forty seven cases of intestinal Tuberculosis, ileocaecal thickening was the most common finding, present in 22 cases (44%), caecal thickening with or without ascending colon strictures were present in 9 cases. Pulled up caecum with narrow ileocaecal valve was present in 3 cases. One case showed sigmoid colon thickening and in one case appendicectomy was done and was later diagnosed to be Tuberculosis. Small bowel strictures were found in 12 cases, two were in jejunum, rest all were in ileum. Ileal perforation was found in 7 cases, adhesions were found in two cases. Other common findings were larged mesenteric lymph nodes in 14 cases and omental thickening in 3 cases.

OPERATIVE MANAGEMENT:

In the present series of fifty cases, forty nine cases underwent definitive procedure; one patient in obstructive group had obstruction with extensive matting of the bowel. In addition he had massive adhesions, probably from tubercular peritonitis and was inoperable. So operation was abandoned and only biopsy was taken. The reason for surgery in most cases was either persistent pain with suspicion of tumoral lesion, intestinal obstruction or preoperative diagnosis of perforative peritonitis.

Most common procedure that was done, was Limited (segmental) resection, including only 5 cms of ascending colon, with ileoascending colostomy, in 46% of cases. One case under went Limited resection for sigmoid colon Tuberculosis. Right Hemicolectomty was done for 18% of cases. Six cases (12 %) underwent resection anastomosis of these three were having multiple strictures involving the ileum and three had perforative peritonitis.

Stricturoplasty was done for 12% of cases; one case was that of jejunal stricture and rest were of ileal stricture.

Primary closure of perforation was done in (4%) cases. Rest all the perforative peritonitis cases underwent resections. Adhesionolysis was done for two cases (4%). In one case no procedure could be done due to extensive peritoneal tuberculosis .Mesenteric lymph node biopsy was taken in14% of cases, one case underwent Mesenteric cold abscess drainage and deroofing, one case underwent Appendicectomy and was subsequently diagnosed to be Tuberculosis, in histopathology. In two cases (4%) of ileocaecal mass, ileotransverse bypass was done. Table 1 shows various surgical options.

Table 1: SURGICAL MANAGEMENT

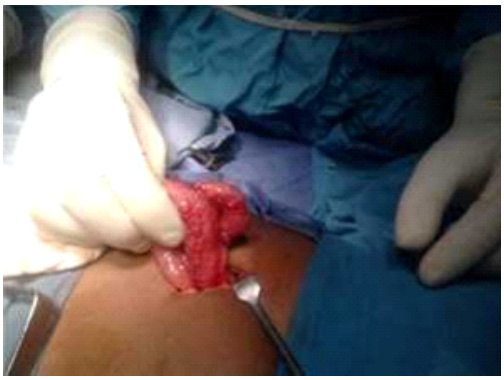
Procedure	Number	Percentage %
RESECTIONS		
Limited(Segmental)	23	46
Right Hemicolectomy	9	18
Small Bowel	6	12
STRICTUROPLASTY	6	12
PERFORATION CLOSURE	2	4
ADHESIONOLYSIS	2	4
ONLYBYPASS	2	4
ONLYBIOPSY	1	2
MESENTRIC COLD ABSCESS DRAINAGE	1	2
APPENDISECTOMY	1	2

COMPLICATIONS:

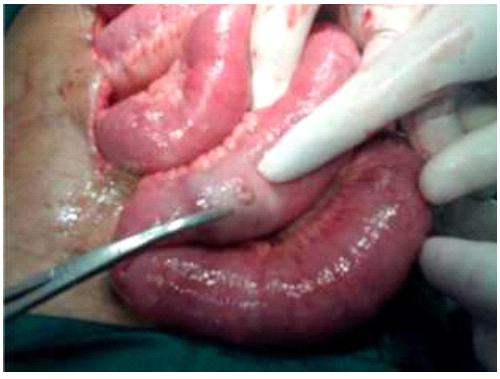
Operative morbidity was 12%, with one or more complications. These were more frequent in patients undergoing emergency surgery. The most common complications were wound infections (10%) and pulmonary infections. One patient (2%) developed faecal fistula and one developed burst abdomen requiring re-operation. In this series of fifty cases four patients died(8%). All four deaths occurred,are those who underwent emergency procedures and following operation they had multiple complications.

FOLLOW-UP:

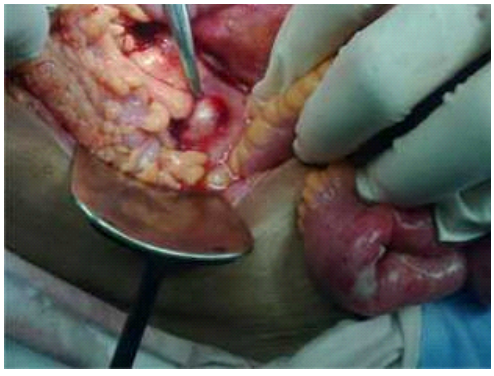
All the cases had a regular follow-up at 1, 3, 6, 12, 18 months; 96% of them were relieved of the symptoms. General condition of the patients improved with weight gain and correction of anaemia. All the cases were discharged on 6 months of Anti-tuberculosis treatment regimen as per RNTCP schedule.



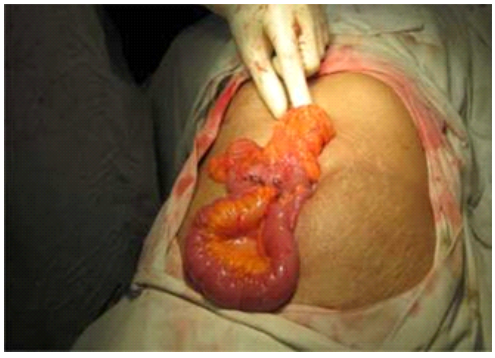
TUBERCULOSIS OF ABDOMEN



TUBERCULAR ILEAL PERFORATION



MESENETERIC LYMPHNODE ENLARGMENT



RIGHT HEMICOLECTOMY

DISCUSSION:

Diagnosisis difficult in absence of active pulmonary disease, 4 patients had active pulmonary disease and accuracy of diagnosis was 60%. It was more difficult in cases of emergency laparotomy, the nature of the obstruction may go unrecognized, particularly in patients having acute symptoms or caecal masses maybe thought to be malignant. The most common diagnosis made was that of Sub acute intestinal obstruction (40%) The most common site involved was ileocaecal region, in 44% of cases.

The approach to surgery should be conservative, with the aim of saving maximum bowel length, so Limited resection was the most common surgery performed (46%) in the present series while only 18% cases underwent Right hemicolectomy, and stricturoplasty (12%) was preferred over resection anastomosis (6%) in cases of stricture. Wound infection is common (10%), but most of them respond well to Anti Tubercular Treatment (ATT), so all patients should be started on 6 months of ATT, post operatively. Mortality is high following surgery (8%) especially in emergency cases.

A comparison analysis was done on the surgical procedures preferred with various other studies and showed the following results:

Table 2: COMPARISON WITH OTHER SIMILAR STUDIES.

Procedure	Forrest C et al	M.B. Islam et al	Present study
RESECTIONS			
Limited(Segmental)	18%	10%	46%
Right Hemicolectomy	12%	63.3%	18%
Small Bowel	31%	6.6%	12%
STRICTUROPLASTY	36%	3.3%	12%
PERFORATION CLOSURE	5%	Nil	4%
ADHESIONOLYSIS	20%	Nil	4%
ONLYBYPASS	18%	16.6%	4%
ONLYBIOPSY	18%	Nil	2%
OTHERS	1%	Nil	2%

SUMMARY:

The most common site was the intestine and ileocaecal region (44%) being the commonest site in the intestine. Approach to the treatment was conservative, where Limited(Segmental) resection (46%) was preferred over right hemicolectomy (18%). 49 cases underwent definitive operative procedures.In one case only biopsy was taken. One with Mesenteric cold abscess was drained.

Five cases developed post –operative wound infection, out of the five one had burst abdomen.One patient developed faecal fistula. Four patients(8%)died in the post-operative period. All the cases that were discharged were advised six months of ATT, and showed good results.

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