



EPIDEMIOLOGICAL PROFILE AND SURGICAL INTERVENTIONS IN ABDOMINAL TUBERCULOSIS-A SINGLE CENTRE EXPERIENCE.

General Surgery

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ABSTRACT

BACKGROUND: Abdominal tuberculosis remains a major health hazard in resource poor countries despite considerable advances made in diagnostic tools, therapy and prophylaxis during the past few years.

AIM: To find out the epidemiological profile and role of surgery in abdominal tuberculosis.

Methods: This study is a prospective observational study in which patients admitted to OPD and casualty with provisional diagnosis of abdominal tuberculosis from November 2018 to October 2020 were included. A proforma was made and clinical, laboratorial, operative, post-operative course of each patient was entered in Microsoft Excel. Data were presented in number and percentages.

Results: In our study, it was found that 31 out of 42 patients underwent surgical procedure. In operative finding, on exploratory laparotomy, most common site of involvement was small intestine (43.3%), followed by ileo-caecal involvement (36.6%). Most common intraoperative findings were bread and butter type of adhesion (71.8%) followed by stricture small intestine (62.5%). Surgical procedures conducted commonly were stricturoplasty, adhesiolysis and resection. Only laparotomy and biopsy procedure done in 5 cases (16.1%) which were operated. Post operative complications were found in 27 cases.

Conclusion: In spite of extensive investigations, the diagnosis of abdominal tuberculosis is still an enigma. Surgery plays a main role in these cases for diagnosis and definitive management.

KEYWORDS

Abdominal tuberculosis, Stricture, Adhesiolysis, Resection and anastomosis.

INTRODUCTION:

Abdominal Tuberculosis variant is a common extra-pulmonary manifestation of TB. Its incidence is increasing due to incomplete treatment, occurrence of multi-resistant strains and increasing incidence of AIDS^(1,2). Abdominal TB continues to represent a diagnostic challenge to clinicians. Clinically it may present in acute, chronic or acute on chronic forms and sometimes may even be an incidental laparotomy finding^(2,6). Commonly it runs a chronic course with nonspecific symptoms of fever (40-70%), pain (80-90%), diarrhoea, weight loss (40-90%), anorexia and malaise². Acute presentation is secondary to complications like complete or partial intestinal obstruction due to mass formation in ileo-caecal region or strictures in small intestine and bowel perforation causing peritonitis, especially terminal ileum. Diagnosis is usually confirmed after the laparotomy or Laparoscopy and histopathological examination. For those cases having been diagnosed with abdominal TB early in the course of illness and minimal symptoms, treatment is mainly conservative with anti-TB therapy^(2,3,4). Surgical treatment is reserved for complications such as intestinal obstruction and bowel perforation with peritonitis^(1,2). This study aims to find out epidemiological profile and various surgical treatment modalities in abdominal tuberculosis, and to study the various clinico-pathological manifestations of abdominal TB.

METHODS:

This prospective observational study is carried out in the Department of General Surgery, V.S.S. Medical College and Hospital, Burla during the period of November 2018 to October 2020. All the cases that are admitted to the surgery ward and referred cases (with specific symptoms) from medicine and paediatric ward were taken up for study. The particulars in detail of each patient were recorded under the following headings with special emphasis on the symptoms in order to find out the clue to the diagnosis of abdominal tuberculosis basing more on clinical findings than purely on investigation. The investigations possible in our hospital setup in emergency was plain x-ray abdomen, USG abdomen and X-ray chest. Therefore preoperative diagnosis of the cause could not be done with certainty in some cases. After initial resuscitation a thorough assessment was done and clinical progress noted. Those patients seemed to be unresponsive to conservative management were put up for emergency or planned

exploratory laparotomy. The exact cause leading to morbid pathology was noted and tissue sample are taken for histopathological examination which sent to the Department of Pathology, Microbiology, V.S.S. Medical College, Burla.

A proforma was made and clinical, laboratorial, operative, post operative course of each patient was entered in Microsoft Excel. Data were presented in number and percentages.

RESULTS:

From November 2018 to October 2020, a total of 42 cases had a final diagnosis of confirmed cases of "Abdominal Tuberculosis". Out of 42 patients, 27 were females and 15 males (female:male ratio of 1.8:1). Most of the patients (71.4%) were between 21 and 40 years of age.

Table 1: Age and sex incidence

Age in Years	Male	Female	Total	Percentage
0-10	1	-	1	2.3
11-20	2	4	6	14.2
21-30	6	15	21	50
31-40	4	5	9	21.4
41-50	1	2	3	7.1
≥50	1	1	2	4.7
Total	15	27	42	100

28 (66.6%) out of 42 patients were poor, 10 (23.8%) were from average socioeconomic status group and only 4 cases (9.5%) were from high income group suggesting that high percentage of sufferers were from poorer section of society.

Table 2: Distribution of abdominal tuberculosis in different socioeconomic group

Total no. of patients of abdominal TB	Poor Socioeconomic Group	Average socioeconomic Group	High Socioeconomic Group
36	28 (66.6%)	10 (23.8%)	4 (9.5%)

All patients in this series presented themselves in acute manner. In 38.09% cases the acute abdomen was the first manifestation of the

disease process, whereas 61.9% cases give history of chronic abdominal pain of varying duration.

Table 3: Mode of presentation

Type of Presentation	No. of cases	Percentage
Acute denovo	16	38.09
Acute on chronic	26	61.9

The commonest cause of acute abdomen in this series was intestinal obstruction (57.14%) followed by peritonitis in 30.95% cases.

Table 4: Type of acute presentation

Type of acute presentation	No. of cases	Percentage
Intestinal obstruction	24	57.14
Complete	16	38.09
Incomplete	8	19.04
Peritonitis	13	30.95
Diffuse	9	21.42
Localized	4	9.52
Simulating	5	11.90
Appendicitis/ Appendicular Perforation		

A straight X-ray of the abdomen was done in all the cases of this series. Out of the 42 emergency straight X-ray of the abdomen 24 (57.1%) showed multiple fluid levels, 11 (26.1%) Pneumoperitoneum and 7 (16.6%) had no significant findings. Chest X-ray was done in 38 patients of this series. Thus by screening of patients by chest X-ray, pleural effusion were found in 7.8%, healed foci in 13.1% and no demonstrable lesion in 78.9%. Therefore, evidence of pulmonary involvement, active or healed, was present in 20.9% of the cases.

Table 5: Radiological findings

Findings	Cases	Percentage
A. Straight X-ray Abdomen findings	24	57.1
Multiple fluid and gas level	11	26.1
Distended coils of intestine	7	16.63
No. significant finding		
B.U.S G (in 20 cases)	10	50
Dilated loops of intestine	4	20
S.O.L. in Rt. iliac fossa	6	30
Free fluid in peritoneum		

During operation, the small intestine 13 (43.3%) were found to be the commonest site affected by the diseased process.

Table 6: Laparotomy findings site of lesion (n=30)

Site of lesion	No. of Cases	Percentage
Small intestine	13	43.3
Ileocaecal region	11	36.6
Extra intestinal	6	20
• Lymphnode		
• Omentum		
• Peritoneum		

In this study a stricture of a small intestine was found in 62.5% cases. Bread and butter type of adhesion was seen 71.8% cases, hyperplastic lesion in 28.1% cases, mesenteric adenitis in 50% of cases, ascitis in 31.2% of cases.

Table 7: Surgical pathology on laparotomy

Surgical Pathology	No. of Cases	Percentage
Stricture in Small intestine	20	62.5
Bread and butter type adhesion	23	71.8
Hyperplastic lesion	9	28.1
Mesenteric adenitis	16	50
Ascitis	10	31.2
Tubercule with caseation	8	25
Perforation of small gut with peritonitis	5	15.6

In this study 31 cases were undergone various types of operation. Strictureplasty was done in 11 cases. Segmental resection and anastomosis of small intestine including ileotransverse anastomosis was done in 6 cases. Division of bands and adhesions were done in 10 cases. Omental or peritoneal biopsy was done in 5 cases. Primary closure of perforation was done in 4 cases. The operations performed was done as per the site of involvement and best operative manoeuvre suited from cases to cases. More than one of the above procedures had been adopted as and when required.

Table 8: Operative procedures

	Strictures	Hyper Plastic Lesion	Plastered Abdomen	Adhesions And Bends	Peritonitis
Strictureplasty	8	-	-	3	-
Ileotransverse Anastomosis	4	2	-	-	-
Adhesiolysis And resection	-	-	4	6	-
Laparotomy And Biopsy	-	2	-	3	-
Closure of perforation	-	-	-	-	4

The post-operative complications encountered in this series were wound sepsis 12 cases (28.5%), burst abdomen in 6 cases (14.8%), faecal fistula/anastomotic leak 5 cases (11.9%), Paralytic ileus 4 cases (9.5%).

Table 9: Postoperative complication

Complication	No. of cases	Percentage
Wound sepsis	12	28.5
Burst Abdomen	6	14.8
Paralytic ileus	4	9.5
Faecal fistula	5	11.9

DISCUSSION:

The abdominal tuberculosis has been an intriguing problem for surgeons and physicians since time immemorial. In our institution the number of cases of abdominal tuberculosis forms a considerable bulk of admission. It is because, the institution is situated in a place where tuberculosis is rife and socioeconomic status of majority of people is low. In the series, most of the patients (71.4%) were between 21 and 40 years of age.

This age incidence coincides with that reported by Bhansali and Desai (1968), Chuttani (1970), Bhansali (1978) and Vakil and Desai (1985). There were 27 females (64.28%) and 15 male (35.71%) with a female to male of ratio of 1.8:1. Das and Shukla (1976) found a female to males ratio of 2.6:1, Prakash (1978) 2:1 and Vakil and Desai (1985) 1.9:1. The exact reason for high incidence of tubercular abdomen in females is unknown but may be presumed that females swallow the infected sputum and more chances of hand contamination as they are involved in cleansing works.

In our study, majority of the sufferers were from poorer section of society. Bhansali in 1978 observed chronic onset in 55.16% of cases, acute on chronic in 26.78% of cases and acute presentation in 18.1% of cases. All patients in this series presented themselves in acute manner. The commonest cause of acute abdomen in this series was intestinal obstruction followed by peritonitis in cases.

A straight X-ray of the abdomen was done in all the cases of this series. Out of the 42 emergency straight X-ray of the abdomen 24 (57.1%) showed multiple fluid levels, 11 (26.1%) Pneumoperitoneum and 7 (16.6%) had no significant findings. Bhansali and Desai (1968) found fluid levels, in 67%, pneumo peritoneum in 7% and equivocal findings in 25% of the straight X-ray of the abdomen done in acute cases, and Bhansali (1978) got fluid levels in 74%, Pneumo peritoneum in 7% and no significant finding in 18%. Ultrasonography was done in 20 cases. It was observed that in 10 cases dilated loops of intestine with distal narrowing. In 6 cases there is free fluid in peritoneum. During operation, the small intestine 13 (43.3%) were found to be the commonest site affected by the diseased process. Any part of GI track may be involved, but all authors reported that terminal ileum and ileocaecal lesions were common site of involvement. This is because (a) Stasis (b) Abundance of Lymphoid follicles (c) Rapid digestion and absorption permitting free and prolonged contact of intestinal mucosa with the bacillus. Das and Shukla (1976) and Bhansali (1978) have all found the small intestine to be the most frequent site of lesion. Small intestine stricture were seen in 20 patients of this series. Ileum and ileocaecal were the usual site of stricture (84%). Acute tubercular perforation of small intestine is an uncommon complication, but by no means rare (Ahmad M. 1982). In this study a stricture of a small intestine was found in 62.5% cases. Bread and butter type of adhesion was seen 71.8% cases, hyperplastic lesion in 28.1% cases, mesenteric adenitis in 50% of cases, ascitis in 31.2% of cases. In this study 31

cases were undergone various types of operation. Stricturoplasty was done in 11 cases. Segmental resection and anastomosis of small intestine including ileotransverse anastomosis was done in 6 cases. Division of bands and adhesions were done in 10 cases. Omental or peritoneal biopsy was done in 5 cases. Primary closure of perforation was done in 4 cases. The operations performed was done as per the site of involvement and best operative manoeuvre suited from cases to cases. More than one of the above procedures had been adopted as and when required. In absence of definite obstruction to GI passage a conservative treatment was undertaken. All the cases including those who had undergone surgery received anti-tubercular treatment. In the immediate postoperative period when the patient is in nil oral phase injection streptomycin 0.75gm given. After proper post operative care antitubercular regimen advised. The ATT was given for 6 month with 4 drug regimen for 2 months and the rest 4 months with 3 drugs, the most potent one. All patients showed clinical improvement.

The post-operative complications encountered in this series were wound sepsis 12 cases (28.5%), burst abdomen in 6 cases (14.8%), faecal fistula/anastomotic leak 5 cases (11.9%), Paralytic ileus 4 cases (9.5%). Joshi (1978) found wound sepsis in 8%, and wound dehiscence in 4% of his patients. The patients in this study were followed up ranging from one month to one year. 3 of them did not report again after 4 weeks while others gradually stopped coming for follow up after varying intervals of 3-6 months. 10 cases were followed up for a period of 6 months to 1 year. Patients were clinically symptom free and were taking anti-tuberculous drugs regularly. They had gained weight and their appetite had improved.

CONCLUSION:

Even though the modalities of investigations and imaging have significantly improved in modern times, with sophisticated and high-resolution images and radio nucleotide sequences providing better pre-operative diagnosis, abdominal tuberculosis remains obscure in significant number of patients. In such cases, operative intervention in the form of minimally invasive diagnostic laparoscopy and/or biopsy for tissue diagnosis, or exploratory laparotomy are still required for confirmation of diagnosis. In addition, surgical management provides therapeutic advantages both in emergency as well as in elective setting as definitive management in addition to anti-tubercular treatment.

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