Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Original Research

Strictureplasty with resection and anastomosis in patients with obstruction of small intestine due to tuberculosis (TB)- A comparative study

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ABSTRACT:
Background: The present study compared strictureplasty with resection and anastomosis in patients with obstruction of small intestine due to Tuberculosis (TB). **Materials & Methods:** 68 patients of intestinal TB of small intestinal were divided into 2 groups. Group I patients underwent Henike-Meckuliz strictureplasty and group II patients underwent resection and anastomosis. **Results:** Common clinical features were abdominal pain seen in 16 in group I and 18 in group II, vomiting 20 in group I and 17 in group II, weight loss 15 in group I and 12 in group II, ascites 6 in group I and 4 in group II, abdominal mass 2 in group I and 4 in group II, pulmonary TB 1 in group I and 2 in group II, lymphadenitis 4 in group I and 3 in group II and peritonitis seen 1 patient in group I. Common complication were paralytic ileus 6 in group I and 25 in group II, fistula formation 1 in group I and 2 in group II, anastomosis leakage 1 in groupie, wound dehiscence 1 in group I and 2 in group II, wound infection 3 in group I and 14 in group II, recurrent obstruction 1 in group II, incisional hernia 1 in each group and pelvic abscess 1 in group II. **Conclusion:** Complications were less in strictureplasty as compared to those who underwent resection and anastomosis, both treatment modalities may be used for the management of cases.
Key words: Strictureplasty, Resection and anastomosis, Intestinal tuberculosis

Received: 15 April, 2018 Revised: 28 April, 2018 Accepted: 12 May, 2018

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This article may be cited as: PandeyAK, Pandey A. Strictureplasty with resection and anastomosis in patients with obstruction of small intestine due to tuberculosis (TB)- A comparative study. J Adv Med Dent Scie Res 2018;6(6):148-151.

INTRODUCTION

Gastrointestinal tuberculosis (TB) is a relatively uncommon form of TB which is defined as infection of the peritoneum, abdominal organs or abdominal lymphatic system.[1] TB control programs typically focus on pulmonary TB which is the predominant form of the disease; extra-pulmonary TB, in particular gastro-intestinal TB, is relatively neglected.[2] This is likely due to it being more difficult to diagnose and lacking the transmission potential of smear-positive pulmonary TB. However, extra-pulmonary TB, including gastrointestinal TB often represents the worst end of the TB disease severity spectrum, with poorer prognosis and treatment outcomes.[3]

Abdominal TB can affect the gastrointestinal tract, (GIT) peritoneum and lymph nodes or the solid viscera (Liver, Spleen, Pancreas). The GIT is involved in 66-75% of pts with abdominal TB.[4] The terminal ileum and ileoceacal region are the most common sites, followed by jejunum and colon. Multiple sites are common in GIT. Patients with acute abdomen require emergency laparotomy. Patients with patent strictures respond to conservative management and patients with intestinal obstruction, strictures or masses usually require surgery.[5] Strictureplasty is a relatively new procedure and is considered safer to resection and anastomosis in dealing with patients with recurrent bowel disease. This is specially for patients who have limited residual bowel length or the patients with multiple strictures, where

resection of all may leads to short gut syndrome.[6] The present study compared strictureplasty with resection and anastomosis in patients with obstruction of small intestine due to Tuberculosis (TB).

MATERIALS & METHODS

The present study was conducted on 68 patients of intestinal TB of small intestinal of both genders. All were informed regarding the study and their written consent was obtained. Ethical clearance was obtained before starting the study.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups. Group I patients underwent Henike-Meckuliz strictureplasty and group II patients underwent resection and anastomosis. Complications such as anastomotic leak, wound infection, post-operative stay and recurrent obstruction was recorded. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Procedure	Henike-Meckuliz strictureplasty	Resection and anastomosis
M:F	16:18	14:20

Table I shows that group I had 16 males and 18 females and group II had 14 males and 20 females.

Table II Clinical features at the time of admission in both groups

Clinical features	Group I	Group II	P value
Abdominal pain	16	18	0.031
Vomiting	20	17	
Weight loss	15	12	
Ascites	6	4	
Abdominal mass	2	4	
Pulmonary TB	1	2	
Lymphadenitis	4	3	
Peritonitis	1	0	

Table II, graph I shows that common clinical features were abdominal pain seen in 16 in group I and 18 in group II, vomiting 20 in group I and 17 in group II, weight loss 15 in group I and 12 in group II, ascites 6 in group I and 4 in group II, abdominal mass 2 in group I and 4 in group II, pulmonary TB 1 in group I and 2 in group II, lymphadenitis 4 in group I and 3 in group II and peritonitis seen 1 patient in group I. The difference was significant (P< 0.05).

Graph I Clinical features at the time of admission in both groups

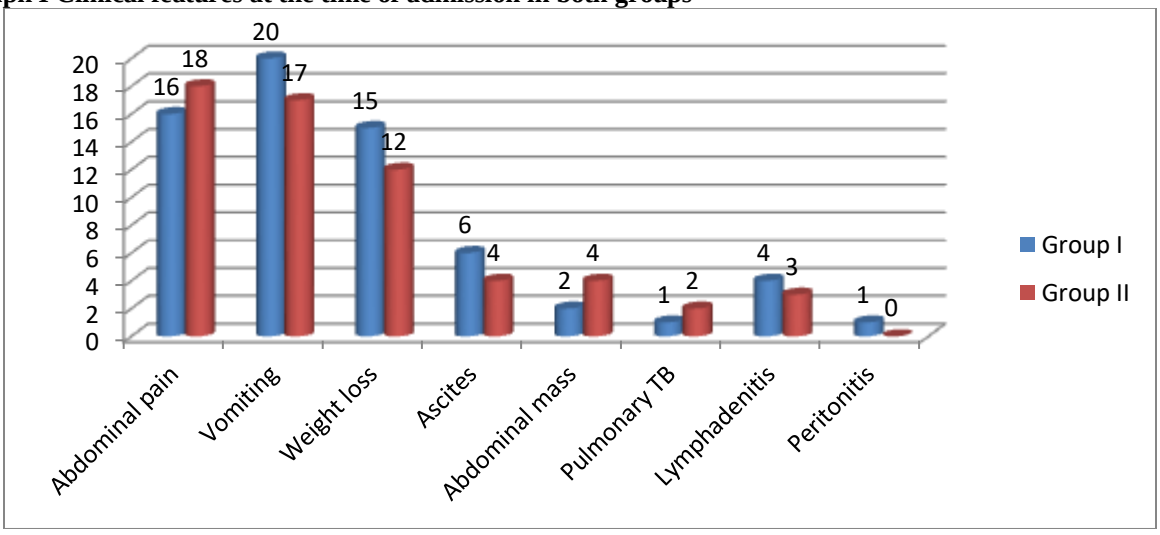
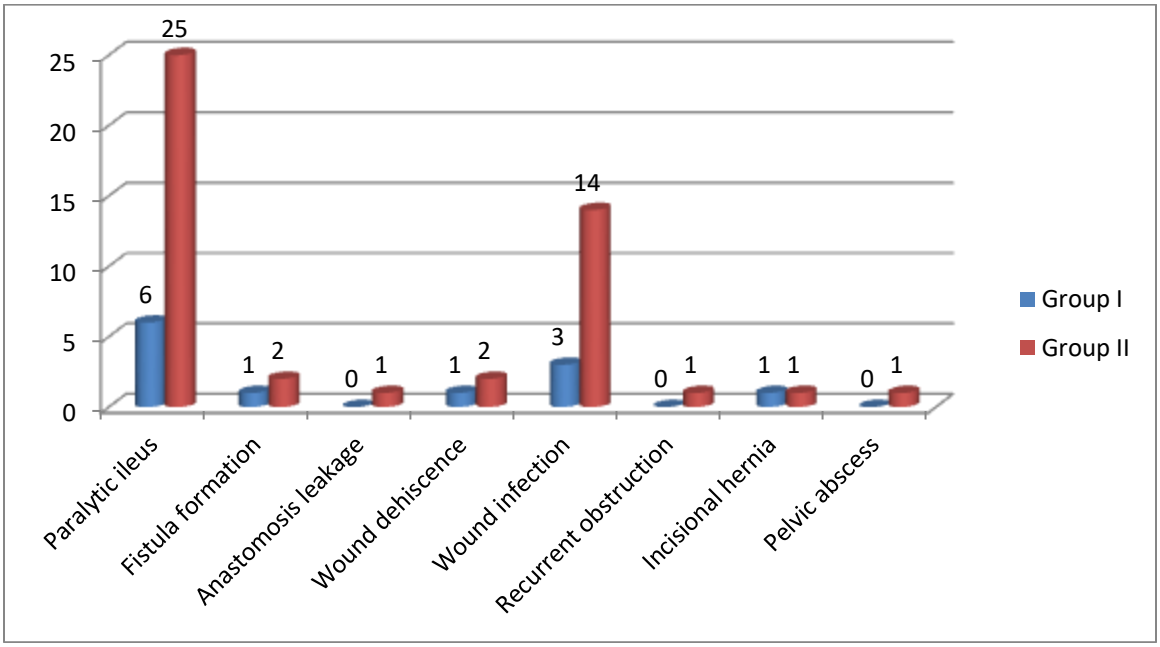


Table III Postoperative complications in both groups

Complications	Group I	Group II	P value
Paralytic ileus	6	25	0.025
Fistula formation	1	2	
Anastomosis leakage	0	1	
Wound dehiscence	1	2	
Wound infection	3	14	
Recurrent obstruction	0	1	
Incisional hernia	1	1	
Pelvic abscess	0	1	

Table III, graph II shows that common complication were paralytic ileus 6 in group I and 25 in group II, fistula formation 1in group I and 2 in group II, anastomosis leakage 1 in groupie, wound dehiscence 1 in group I and 2 in group II, wound infection 3 in group I and 14 in group II, recurrent obstruction 1 in group II, incisional hernia 1 in each group and pelvic abscess 1 in group II. The difference was significant (P< 0.05).



DISCUSSION

TB is a contagious disease; spread by aerosols from patients with pulmonary disease caused by Mycobacterium Tuberculosis (Mtb). Many factors play a role in individual susceptibility to Mycobacterium Tuberculosis.[7] Progression from exposure to disease depends on the risk of exposure, the risk of acquiring infection and the risk of developing disease and these in turn depend on host and environmental factors.[8] Sputum positive TB cases are more likely to infect their contacts than sputum negative TB cases. Infection with Mtb bacilli does not always lead to active disease, approximately 90% of individuals develop a latent infection with no apparent clinical consequences whilst 10% develop progressive disease.[9,10] The present study compared strictureplasty with resection and anastomosis in patients with obstruction of small intestine due to tuberculosis (TB).

In present study group I had 16 males and 18 females and group II had 14 males and 20 females. Iqbal et al[11] compared the results of strictureplasty with resection and anastomosis in patients with obstruction of small intestine due to tuberculosis in eighty patients, with intestinal obstruction due to TB strictures who underwent either strictureplasty or resection and anastomosis. Data were collected on a proforma, and looked for complications like anastomotic leakage, wound infection, recurrence of intestinal obstruction and postoperative stay. Results showed that there is no significant difference between the two procedures. Both procedures were equally effective however strictureplasty is superior to resection and anastomosis

in cases of stricture and multiple strictures to conserve the effective gut length.

We found that common clinical features were abdominal pain seen in 16 in group I and 18 in group II, vomiting 20 in group I and 17 in group II, weight loss 15 in group I and 12 in group II, ascites 6 in group I and 4 in group II, abdominal mass 2 in group I and 4 in group II, pulmonary TB 1 in group I and 2 in group II, lymphadenitis 4 in group I and 3 in group II and peritonitis seen 1 patient in group I. Lowbridge et al[12] recorded clinical and laboratory characteristics and outcomes among 88 patients with suspected gastrointestinal TB. 69 were included in analyses; 52 (75%) had a final diagnosis of gastrointestinal TB; 17 had a non-TB diagnosis. People with TB were younger (42.7 versus 61.5 years, $p = 0.01$) and more likely to have weight loss. An algorithm using age < 44, weight loss, cough, fever, no vomiting, albumin > 26 g/L, platelets $> 340 \times 10^9$/L and immunocompromise had good specificity (96.2%) in predicting TB, but very poor sensitivity (16.0%). GeneXpert® performed very well on gastrointestinal biopsies (sensitivity 95.7% versus 35.0% for culture against a gold standard composite case definition of confirmed TB). Most patients (79%) successfully completed treatment and no treatment failure occurred, however adverse events (21%) and mortality (13%) among TB cases were high. We found no evidence that 6 months of treatment was inferior to longer courses.

We observed that common complication were paralytic ileus 6 in group I and 25 in group II, fistula formation 1 in group I and 2 in group II, anastomosis leakage 1 in groupie, wound dehiscence 1 in group I and 2 in group II, wound infection 3 in group I and 14 in group II, recurrent obstruction 1 in group II, incisional hernia 1 in each group and pelvic abscess 1 in group II. It is evident that Crowding and poverty increases the risk of exposure to Mtb and thus the risk of infection and disease. Health care workers are also noted to have higher risk of exposure and latent infection.

The shortcoming of the study is small sample size.

CONCLUSION

Authors found that though complications were less in strictureplasty as compared to those who underwent resection and anastomosis, both treatment modalities may be used for the management of cases.

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