Original Research Article

DOI: http://dx.doi.org/10.18203/2349-2902.isj20201168

Surgical management and post-operative complications in abdominal tuberculosis patients

Mahendra Kumar*

Department of Surgery, District Hospital, Shahjahanpur, Uttar Pradesh, India

Received: 01 March 2020 Revised: 13 March 2020 Accepted: 16 March 2020

*Correspondence: Dr. Mahendra Kumar.

E-mail: drmkumar2020@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Abdominal tuberculosis is a diagnostic and therapeutic challenge in resource limited countries. The vague clinical presentation is a barrier to early diagnosis. Aim of the study was to highlight the role of operative procedures and post-operative complications in patients suffering from abdominal tuberculosis.

Methods: This is a descriptive study of abdominal tuberculosis cases, which were operated in the Department of Surgery, Lal Lajpath Rai hospital Kanpur, Uttar Pradesh, India, and associated hospitals. Informed and written consent was obtained from each patient prior to commencement of the study. Detailed data of each patient was entered on a Microsoft excel. Data were presented in number and percentages.

Results: Most of the patient's lumps were present in right ileac fosa, 70.37% followed by lymph node mass. Rolled omentum and appendicular showed minimum percentage of cases. In operative finding on exploratory laparotomy, the most common site of involvement was ileocaecal, and less commonly involved site in abdomen tuberculosis are duodenum and appendix. Surgical procedures, intestinal resection in the form of right hemicolectomy (21 cases), small bowel resection (58 cases). Appendicectomies were done only in 3 cases. Post-operative complications were found in 64 cases. Most of the complication developed in patients those were operated in emergency.

Conclusions: Most of the surgeons were preferred conservative surgery rather than extensive resection of the active lesion. Commonest post-operative complication was broncho pulmonary complication.

Keywords: Abdominal tuberculosis, Bowel perforation, Resection anastomosis, Stricture

INTRODUCTION

Abdominal tuberculosis (TB) is defined as infection of the gastrointestinal tract, peritoneum, abdominal solid and/or abdominal lymphatics organs, Mycobacterium tuberculosis.1 Abdominal TB constitutes about 12% of extrapulmonary TB cases and 1 to 3% of total TB cases.² Abdominal TB is one of the common forms of extrapulmonary TB.3 Abdominal TB is comparatively rare, but it is recognized that abdominal TB is growing in both developing and developed countries.⁴⁻⁸ Abdominal tuberculosis continues to be common in various parts of the world with large series

being reported from Chile, Egypt, India, Iraq, Kuwait, Nigeria, Saudi Arabia and Sudan.9 Diagnosis of abdominal TB is often unnoticed and delayed due to lack of exact symptoms and no exact diagnostic test. A high index of suspicion is necessary for early diagnosis of abdominal TB; however, it remains a considerable diagnostic dilemma and can copy many other diseases, such as Crohn's disease, abdominal lymphoma, and malignancy of the abdominal organs. Abdominal TB can typically be classified into 4 forms: luminal, peritoneal, nodal, and visceral involving theintra-abdominal solid organs.¹⁰ The most general forms are luminal (ileocecal area) and peritoneal.11 The modes of infection of

abdominal TB include swallowing infected sputum, ingestion of bacilli from infected milk products or meat, hematogenous spread from a lung focus, spread via lymphatics from infected lymph nodes, and contiguous spread from adjacent organs.¹² The clinical presentation of abdominal TB depends on the site of infection. Abdominal pain, diarrhea, bleeding from the luminal tract, intestinal obstruction, fever, and weight loss are frequent features of intestinal TB; ascites and abdominal distension are usual manifestations of peritoneal TB.8 Diagnosis of abdominal TB may also vary depending on the site of infection.¹³ Abdominal TB may occur within the abdomen, involving gastrointestinal tract, visceral organs or peritoneum. There can be difficulty differentiating Abdominal TB from Crohn's disease clinically, endoscopically and histologically. 14,15 Both diseases have a predilection for the small bowel, and cause chronic granulomatous inflammation. 16 There are significant clinical implications of incorrectly diagnosing tuberculosis and committing patients to a prolonged course of toxic chemotherapy; or missing TB with public health implications and causing life-threatening disseminated TB if immunosuppressant therapy is erroneously initiated. The aim of the present study was to evaluate the operative procedures and postoperative complications in patients suffering from abdominal tuberculosis.

METHODS

The present descriptive study includes the cases of abdominal tuberculosis admitted either as a case of acute of subacute abdominal emergencies admitted in Lal Lajpath Rai hospital Kanpur, Uttar Pradesh India, and associated hospitals. The total period of study was 10 years i.e., one year prospective (November 2017 to October 2018) and 9 years retrospective (October 2017 to October 2008).

Patient who refuse to give their consent were excluded from the study. Ethical clearance was taken from the institution. Informed and written consent was obtained from each patient prior to commencement of the study.

Procedure

After detailed history and complete physical examination investigations were carried out. Pre-operative detailed investigations were not possible in cases of acute emergencies. Dehydrated and anaemia patients put intravenous fluid with supplements of vitamins. Blood transfusion were given in anaemia cases. Specimens of bowel and lymphnocles removed at operation were studied histopathological. Surgical treatment was performed in cases of obstruction or perforation. According to pre-operative findings one of the various surgical procedures was used. In case of hypertrophic type of ileocaecal tuberculosis right hemicolectomy with end to end ileotransverse anastomosis was done. Ileal resection with end-o-end anastomosis for multiple

structures in a short segment of ileum was performed. Structure plastry was done if only one structure was found. Other types of procedures like division of bands and adhesions were performed, if these were the cause of obstruction. In few cases where bowel loops were found badly gummed up only biopsy taken and patients put antitubercular drugs post operatively.

Post-operative

Post-operative the patient received full course of antitubercular drug viz. four drugs for three months streptomycin, isoniazid, rifampicin and ethambutol according to weight of the patients, followed by two drugs for next six months and had a regular follow up.

Statistical analysis

Data tabulated and subjected to statistical analysis using Microsoft excel and SPSS 16.0. Characteristics were tabulated as descriptive statistics, group statistics explained by frequency and percentages.

RESULTS

A total number of 300 cases of abdominal tuberculosis admitted either as a case of acute of subacute abdominal emergencies and tract in Lal Lajpath Rai hospital Kanpur, Uttar Pradesh India. The maximum number of cases 95 (31%) were found in the year 1988-1990. Minimum number of cases were recorded during 1993 - 94. i.e., about 15%. The maximum number of cases was in third decade of life, age group 21-30 years. The youngest patients were 1.5 years old female and oldest patients was 80 years male. There were 120 males and 180 females. History of pulmonary tuberculosis was present in 25 % of the total cases.

Table 1: Lump present in patients admitted as acute and sub-acute abdominal emergencies.

Lump palpable	No.	%
Ileocaecal	38	70.37
Lymph node mass	10	18.52
Rolled omentum	3	5.56
Appendicular	3	5.56
Total	54	100

Table 1 illustrates that the lump present in patients admitted as acute and sub-acute abdominal emergencies. In which most of the patient's lumps were present in right ileac fosa, 38 cases (70.37%) followed by lymph node mass, 10 cases (18.53%). Rolled omentum and appendicular showed minimum percentage of cases i.e., 5.56% (Table 1). Table 2 showed that the operative finding on exploratory laparotomy. In which, the most common site of involvement was ileocaecal, 144 cases (48.00%) followed by ileum 63 cases (21.00%). Less commonly involved site in abdomen tuberculosis are

duodenum (0.75%) and appendix (1%). There was no involvement of sites in emergency category, colon (stricture), duodenum (hypertrophic) and appendicular. (Table 2).

Intestinal resection in the form of right hemicolectomy (21 cases), small bowel resection (58 cases) resection and stricturoplasty (13 cases). Right hemicolectomy with one feet terminal ileal resection in seven cases, limited ileocaecal resection were done in 9 cases. Resection of colon was done only in one case. By-pass surgery (133 cases) done in the form of ileocolostomy (63 cases)

.Stricturoplasty were done in 35 cases. Appendicectomies were done in 3 cases (Table 3).

Table 4 depicts that the post operative complication and deaths. In which post operative complication were found in 64 cases. Most of the complication developed in patients those were operated in emergency, presented as acute abdomen because of intestinal obstruction or perforation. The most common complication wasbroncho pulmonary infection and followed by wound infection and burst abdomen.

Table 2: Operative finding on exploratory laparotomy.

	Number	Number of cases				Danaantaaa
Site	Emerge	Emergency		Elective		Percentage (%)
	No.	%	No.	%		(70)
Ileocaecal	44	37.29	100	54.95	144	48.00
Ileum	28	23.73	35	19.23	63	21.00
Jejunum	2	1.69	3	1.65	5	1.67
Ileo- jejunal	10	8.47	14	7.69	24	8.00
Colon (stricture)	0	0.00	5	2.75	5	1.67
Duodenum (hypertrophic)	0	0.00	2	1.10	2	0.67
Diffused (miliary)	10	8.47	4	2.20	14	4.67
Diffused adhesion	10	8.47	4	2.20	14	4.67
Mesenteric adenitis	14	11.86	12	6.59	26	8.67
Appendicular	0	0.00	3	1.65	3	1.00
Total	118	100	282	100	300	100

Table 3: Frequency distribution of surgical procedures.

	Number of cases					D (
Nature of surgery	Emergency		Elective		Total no.	Percentage
	No.	%	No.	%		(%)
1. Intestinal resection						
(a) Right hemicolectomy	6	5.08	15	8.24	21	7.00
(b) Small bowel resection	0	0.00	0	0.00	0	0.00
(i) Single	8	6.78	50	27.47	58	19.33
(ii) Two or more	0	0.00	4	2.20	4	1.33
(iii) Resection and stricturoplasty	1	0.85	12	6.59	13	4.33
(c) Right hemicolectomy with one	1	0.85	6	3.30	7	2.33
feet terminal ileum resection					<u> </u>	
(d) Limited ileocaecal resection	8	6.78	1	0.55	9	3.00
(e) Resection of colon	0	0.00	1	0.55	1	0.33
2. Bypass surgery						
(a) ILeo colostomy	20	16.95	43	23.63	63	21.00
(b) Enteroenterostomy	36	30.51	10	5.49	46	15.33
(c) Gastro jejunostomy	0	0.00	1	0.55	1	0.33
(d) Bypass with perforation	19	16.10	4	2.20	23	7.67
closure						=
3. Stricturoplasty only	10	8.47	25	13.74	35	11.67
4. Laporotomy with biopsy of omentum or lymph node	9	7.63	8	4.40	17	5.67
5. Appendicectomy	0	0.00	3	1.65	3	1.00

Table 4: Post-operative complication and deaths.

Complication	Number of ca	Total	
	Emergency	Elective	
Wound infection	10(1)	4	14
Burst abdomen	6	2	8
Faccal fistula	6 (3)	2(1)	8
Prolonged ileus	2	1	3
Pulmonary	12 (5)	3	15
complication			
Stress gastritis	3	3	6
Gram (-ve) shock	5 (3)	1(1)	6
Myocardial	2 (2)	0	2
infarction			
Adrenal crisis	2(2)	0	2

DISCUSSION

Lump in abdomen was present inn 18.0% cases in this study, which is slightly less than the study by Das et al, who found lump in 28.65% cases. Bhansali et al found a lump in abdomen in 32.58% cases. 17,18 In present study, surgery was done in 300 patients with cute and subacute intestinal obstruction or perforation. Antitubercular drugs were given post operatively in these cases also. Emergency surgery was done 118 cases and elective surgery was done in 182 cases. Hypertrophic ileocaecal mass more present in 144 cases (48.0%) followed by ileal lesions found in 63 cases 6 (21%) in the form of simple or more than 1 strictures. Mesenteric lymph nodes were enlarged in near about all cases. Mesenteric adenitis without other lesion was found in 26 cases (8.9%). 14 cases were presented as diffused tuberculosis of peritoneal cavity (miliary). Multiple adhesions were found in 4.2% cases. In all published literatures, ileocaecal region was the most common site of involvement in abdominal tuberculosis. Kapoor et al also reported the commonest site of involvement being's terminal ileum and ileocacecal region followed by jejunum and colon.¹⁹ Multiple site of involvement also common. Tiwari and Singh also reported hyperplastic ileocaecal tuberculosis and strictures of small bowel was commonest lesion.20 Regarding the type of surgery performed, right hemecolectomy was done in 28 cases (9.6%) resection anastomosis of small bowel was done in 58 cases (29.6%). Limited ileocaecal resection was done in 9 cases. Bypass surgery was done in 111 cases. Enterostomy was done in 46 cases. Laparotomy with biopsy of omentum of lymph node were done in 17 cases. Most of the surgeon preferred to do bypass surgery irrespective of the active or healed lesion. The most common post-operative complication was pulmonary complications. These were found in 15 cases. Five were expired because of pulmonary complications. Wound infection was found in 14 cases, it is more common in emergency cases. Faecal fistula were developed in 8 cases. Other complications includes gram (-ve) shock and adrenal crisis. Post-operative complications are related to the severity and extent of the disease, the most important factor is the perforation of the intestine and contamination of the peritoneal cavity. The commonest complication was wound infection, which occurred in 13.3% of our patients. Rajput et al also report a similar results. Bhansali et al had 2% mortality in patients treated electively but 24% under emergency condition, 18 Eggleston et al observed that mortality was 3% in elective cases and 18% in emergency procedures. Jain et al reported mortality rate of 8% in operated cases of intestinal tuberculosis and Kapoor et al reported an overall mortality of 4%. Apoor et al reported an overall mortality of 4%. These findings are comparable to present results.

CONCLUSION

Most of the surgeons were preferred conservative surgery rather than extensive resection of the active lesion. Commonest post-operative complication was broncho pulmonary complication. Early diagnosis is the key factor in avoiding systemic and local complications of intestinal tuberculosis, and Anti-tuberculous therapy remains main stay of treatment after the surgery as early as possible surgical interference in acute abdominal tuberculosis is important to decrease the prevalence of morbidity and mortality in the patients.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- 1. Sheer TA, Coyle WJ. Gastrointestinal tuberculosis. Curr Gastroenterol Rep. 2003;5(4):273-8.
- 2. Farer LS, Lowell AM, Meador MP. Extrapulmonary tuberculosis in the United States. Am J Epidemiol. 1979;109(2):205-17.
- 3. Donoghue HD, Holton J. Intestinal tuberculosis. Curr Opin Infect Dis. 2009;22(5):490-6.
- Lingenfelser T, Zak J, Marks IN, Steyn E, Halkett J, Price SK. Abdominal tuberculosis: still a potentially lethal disease. Am J Gastroenterol. 1993;88(5):744-50.
- 5. Marshall JB. Tuberculosis of the gastrointestinal tract and peritoneum. Am J Gastroenterol. 1993;88(7):989-99.
- 6. Park SH, Yang SK, Yang DH, Kim KJ, Yoon SM, Choe JW, et al. Prospective randomized trial of sixmonth versus nine-month therapy for intestinal tuberculosis. Antimicrob Agents Chemother. 2009;53(10):4167-71.
- 7. Ramesh J, Banait GS, Ormerod LP. Abdominal tuberculosis in a district general hospital: a retrospective review of 86 cases. QJM. 2008;101(3):189-95.
- 8. Mamo JP, Brij SO, Enoch DA. Abdominal tuberculosis: a retrospective review of cases presenting to a UK district hospital. QJM. 2013;106(4):347-54.

- Prakash A. Ulcero-constrictive tuberculosis of the bowel. Int Surg. 1978;63:23-9.
- Debi U, Ravisankar V, Prasad KK, Sinha SK, Sharma AK. Abdominal tuberculosis of the gastrointestinal tract: revisited. World J Gastroenterol. 2014;20(40):14831-40.
- 11. Bolukbas C, Bolukbas FF, Kendir T, Dalay RA, Akbayir N, Sokmen MH, et al. Clinical presentation of abdominal tuberculosis in HIV seronegative adults. BMC Gastroenterol. 2005;5:21.
- 12. Lazarus AA, Thilagar B. Abdominal tuberculosis. Dis Mon. 2007;53(1):32-8.
- 13. Khan R, Abid S, Jafri W, Abbas Z, Hameed K, Ahmad Z. Diagnostic dilemma of abdominal tuberculosis in non-HIV patients: an ongoing challenge for physicians. World J Gastroenterol. 2006;12(39):6371-5.
- Arnold C, Moradpour D, Blum HE. Tuberculous colitis mimicking Crohn's disease. Am J Gastroenterol. 1998;93:2294-6.
- 15. Kaushik SP, Bassett ML, McDonald C, Lin BP, Bokey EL. Case report: gastrointestinal tuberculosis simulating Crohn's disease. J Gastroenterol Hepatol. 1996;11:532-4.
- Kirsch R, Pentecost M, Pde HM, Epstein DP, Watermeyer G, Friederich PW. Role of colonoscopic biopsy in distinguishing between Crohn's disease and intestinal tuberculosis. J Clin Pathol. 2006;59:840-4.

- 17. Das P, Shukla HS. Clinical diagnosis abdominal tuberoclosis. Brit J Surg. 1976;63:941.
- 18. Bhansali SK. The challenges of abdominal tuberculosis in 310 cases. Ind Jr Surg. 1978;40:65.
- 19. Kapoor VK, Sharma LK. Abdominal tuberculosis. Br J Surg. 1988;75(1):2-3.
- Tiwari VS, Singh NB. Abdominal tuberculosis- A surgical spectrum. Surgery. 1994;4:8.
- 21. Kumar R, Saddique M, Iqbal P, Khan NA. Abdominal tuberculosis: clinical presentation and outcome. Pak J Surg. 2007;23(4):242-4.
- Rajput MJ, Memon AS, Rani S, Hamad A. Clinipathological profile and surgical management outcomes in patients suffering from intestinal tuberculosis. J Liaqual Uni Med Health Sci. 2005;4:113-8.
- 23. Eggleston FC. Surgery abdominal tuberculosis result in 137 cases. Ind Jr Tub. 1983;30:139.
- 24. Jain JK, Jain TC, Baid JC. Conservative surgery (stricturo plasty) in intestinal tuberculosis. Ind Jr Surg. 1988;4:279-85.
- Kapoor VK, Gupta S, Sikora SS, Chattopadhyay TK, Sharma LK. Acute tubercular abdomen. Ind J Surg. 1991;53:71.

Cite this article as: Kumar M. Surgical management and post-operative complications in abdominal tuberculosis patients. Int Surg J 2020;7:1106-10.