

SURGICAL APPROACH TO ABDOMINAL TUBERCULOSIS

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ABSTRACT

BACKGROUND

Tuberculosis is one of the common diseases in developing countries, extrapulmonary tuberculosis is common in gastrointestinal system. Surgical intervention is required along with chemotherapy, ultrasonography and tissue biopsy of available tools to diagnose the abdominal tuberculosis. Surgical approach is mandatory when complication of abdominal tuberculosis present. This study is done to overcome the complications of abdominal tuberculosis and its management.

The aim of the study is to-

- Evaluate the incidence of the disease with regard to age, sex and socioeconomic status.
- Evaluate the different modes of presentation and its clinical features.
- Evaluate different varieties of abdominal tuberculosis.
- Evaluate role of investigation, procedure to diagnose the abdominal tuberculosis.
- Evaluate the different modalities of treatment to the different presentation of abdominal tuberculosis.

MATERIALS AND METHODS

Cases of abdominal tuberculosis admitted in KIMS, Karwar, a tertiary care government hospital from January 2014 to December 2015 have been taken for the study. A total of 100 cases taken off for the study.

RESULTS

63% of the cases presented with adhesive variety of peritoneal tuberculosis present with cocooning. On suspension of tuberculosis, laparotomy was done. Peroperatively, there was multiple tubercular adhesions and were adherent to abdominal wall, few cases were suspicion of the appendicular mass, mesenteric lymph node enlargement with multiple tuberculous, mesenteric lymph nodes were seen and ATT put on tissue diagnosis cases.

CONCLUSION

In our study, 100 cases were analysed for the clinical study of abdominal tuberculosis admitted in our hospital. Out of 100 patients, 54 were treated conservatively and 46 patients were treated by surgical intervention. In our study, preponderance of female population age group between 20 to 40 years of low socioeconomic status and most of them are from rural areas. Majority of patients presented with subacute intestinal obstruction and ascitic form. Coexistences of pulmonary tuberculosis were presented in 19 patients out of 100 cases.

KEYWORDS

Abdominal Tuberculosis, Surgical Intervention for Obstruction of Gastrointestinal Duct, Minimal Resection, Conservative Treatment with ATT.

HOW TO CITE THIS ARTICLE: Hiremath SV, Nadaf SC. Surgical approach to abdominal tuberculosis. J. Evid. Based Med. Healthc. 2017; 4(62), 3735-3738. DOI: 10.18410/jebmh/2017/746

BACKGROUND

Tuberculosis is one of the oldest disease known to mankind. Major burden of 4.5 million new infections and 2.5 million deaths every year in developing countries¹ confirm as reported by W.H.O. It remains as major health hazard in the under developing and developing countries, in spite of anti-tuberculosis treatment.² Chemotherapy drugs are adequate

to control tuberculosis, sometime surgical intervention too required to overcome the complication of abdominal tuberculosis like obstructions, adhesions and strictures. Overtly, economic status and malnutrition makes population more vulnerable to tuberculosis. Ignorance and illiteracy also counts for the affection of the tuberculosis infection. The disease primarily affects lungs and also affects intestines, meninges, bones, joints, lymph nodes and other tissues of the body except hairs and nails. Tuberculosis control is the major health problem in India. Prevalence is about 4 per 1000 and incidence of infection reclaimed 4 for 1000 in India. Tuberculosis is responsible for 7% hospital admission for intestinal obstruction and 6% of perforation and associated with Human Immunodeficiency Virus (HIV).^{3,4,5} The incidence of abdominal tuberculosis is highly endemic in

Financial or Other, Competing Interest: None.
Submission 19-05-2017, Peer Review 26-05-2017,
Acceptance 08-06-2017, Published 03-08-2017.

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DOI: 10.18410/jebmh/2017/746



areas with background of overcrowding and other nutrition. Primarily, tuberculosis of intestine without antecedent or associate with pulmonary tuberculosis is fairly common.^{6,7} The reported incidence of gastrointestinal tuberculosis secondary pulmonary tuberculosis fall in wild range from 1 to 9% gastrointestinal tract involved in majority cases of abdominal tuberculosis, only 15 to 20% have concomitant pulmonary tuberculosis, thus common ending of disease with disease manifestation and present with varied complication remains a challenge to the diagnosis and skill and integrity of the surgeon. Although, abdominal tuberculosis is common diagnosis and it is difficult as it often not possible to get microorganism for confirmation of infection.^{4,5}

The aim of the surgeon is to remove the focus of disease when drugs cannot reach the focal of infection and mechanical obstruction, which may lead to morbidity. Resection is the ideal procedure from the point of view of disease and its complication, a socioeconomic expedient to cut down the medical line of treatment.⁴

Some of the patients of abdominal tuberculosis will have HIV positive with full-blown AIDS. In such cases, surgical approach and ATT fail, then the prognosis of the disease becomes worst.

MATERIALS AND METHODS

Cases of abdominal tuberculosis admitted in KIMS Hospital, Karwar, a tertiary care government hospital from January 2014 to December 2015 form the materials of the study cases of all forms of abdominal tuberculosis excluding genitourinary tuberculosis are considered for this study.

Inclusion Criteria- 100 cases of abdominal tuberculosis have been taken up for this study admitted in KIMS Hospital, Karwar.

Exclusion Criteria- Cases of genetic urinary tuberculosis are excluded from the study.

RESULTS

Age in Years	Number of Cases	Percentage
0-10	7	7%
11-20	11	11%
21-30	34	34%
31-40	21	21%
41-50	12	12%
51-60	14	14%
61-70	1	1%

Table 1. Age Incidence

Age Incidence- In our study, age incidence varies from 2 to 65 years of age. The disease show predilection to young and middle-aged patients that is 55% being 21 years to 40 years. The youngest age affection in our study is 2 years old female and eldest bearing 65 years male patient. The average age is 30.8 years and the incidence in proponents age group is 0-14 years.

Sex Incidence- In this study of 100 cases, 52 patients are female that accounts to 52% and other 48 of male patients accounting 48%.

Type of Presentation	Number of Cases
Ascitic type of tuberculosis	26
Ileocecal tuberculosis	14
Subacute intestinal obstruction due to TB abdomen	7
TB mesenteric lymphadenitis	6
Vague nonspecific pain abdomen	53

Table 2. Presentation of Abdominal Tuberculosis

54 cases have been treated conservatively as they present with vague nonspecific abdominal symptoms, some of cases presented without any complication. Few cases were unfit for surgical procedures, few of the patients present with definite diagnosis of abdominal tuberculosis were also treated with therapeutic trial of ATT and they respond very well after full course of ATT. Most of them in our series responded well to ATT without any complication or any form of recurrences except 3 cases who died due to peritonitis (ascitic form).

Five cases where known tuberculosis of other parts of the body, few cases detected with pulmonary tuberculosis on investigations and three were with HIV positive.

Acute intestinal obstruction	2
Subacute intestinal obstruction	27
Acute peritonitis	3
Perforation	2
Appendicitis	9
Bleeding/rectum	4
Total	47

Table 3. Mode of Presentation

Out of 100 cases, 54 cases have been treated conservatively of which 10 cases underwent emergency surgical intervention and 36 cases are elective surgery patients treated with conservative method lacked definite diagnosis and few cases of nonspecific symptomatic were put on ATT in spite of clear-cut diagnosis. Diagnostic tool for this patients available in our institution are chest x-ray, USG abdomen, anal ascitic fluid analysis, good response noted even without definite diagnosis with available ATT.

Elective cases were taken for surgery after good bowel preparation.

Sole Disease in Intestinal Tract	Number of Cure
Ileocecal tract alone	6
Ileum alone	10
Ileocecal structure	3
Ascending colon involving with ileocecal tract	5
Extraintestinal Tuberculosis	
Abdominal cocoon	5
Tuberculosis in adhesive form	14
Mesenteric lymphadenitis	16
Fistula in ano	3
Tuberculosis anal canal	1

Table 4. Presentation of Abdominal Tuberculosis

Though the commonest finding in intestinal tract is ileocecal tuberculosis, but in our study, ileum is common affection of tuberculosis and next is the ileocecal tuberculosis.

Tuberculosis much more seen in as adhesive form and mesenteric lymphadenitis is because of due to presence of plenty of lymph nodes, abdominal cocoon is appreciated in 5 cases, cocoon floating in abdominal cavity freely mobile when abdomen is opened.

Intestinal	No. of Cases	Procedure
Ileocecal mass with strictures	3	a) Ileotransverse bypass procedure with stricturoplasty for 1 case. b) Conservative resection with ileocolonic anastomosis for 2 cases.
Ileocaecal mass alone	6	a) Classical right hemicolectomy for 3 cases. b) Conservative resection alone with ileotransverse anastomosis for 3 cases.
Ileal strictures	8	Local resection with anastomosis.
Ileal perforation	2	Resection of perforated segment with end-to-end anastomosis.
Extraintestinal	No. of Cases	Procedure
Adhesiolysis procedure	19	Elective surgery for 17 cases and emergency surgery for 2 case.
Diagnostic laparotomy	12	Emergency surgery 8 and elective 3.
Fistulectomy	3	Elective only for 3 cases.

Table 5. Operative Procedures

Ileocecal mass resection and anastomosis is more challenging procedure we have done in our hospital and results were excellent with the procedures along with ATT chemotherapy, postoperative prognosis was very well and patients recovered very fast without postoperative complication.

Among the extraintestinal procedure we come across radiolysis operation both on emergency and elective bases, postoperative ATT chemotherapy in the extraintestinal procedures also gave us good results and no complication.

DISCUSSION

Tuberculosis abdomen is more common entity in India. The signs and symptoms of tuberculosis abdomen are nonspecific. A high index of suspicion is required for diagnosis. Abdominal tuberculosis is an important cause for morbidity in Indian population because of diagnosis is delayed due to nonspecific nature of its signs and symptoms.⁸

The clinical presentation has been taken as standard for the purpose of treatment. The age group mainly affected in our study is between 21 to 40 years, that’s about 55% of cases of main age of 30.8 years in preponderance of age group incidence less than 10 years 7%, more than 10 years 3%.^{3,9}

In India, women are more commonly affected as noted in our study. This female preponderance maybe due to poor nutritional status of Indian female, Indians and sociocultural factor. Other cause could be due to relative exposure of children with tuberculosis who are largest reserve wires of infection particularly pulmonary tuberculosis. In our study, majority of the patients come from rural areas who are very much lack of proper education, poor socioeconomic status, lack of accessibility to healthcare and sociocultural factors. On the top of it, accessibility to healthcare centers is also a problem. Symptom wise, pain abdomen was chief complaint, others being fever, evening rise of temperature, loss of weight, anorexia, fatigue and anaemia. Distension of abdomen, tenderness in right iliac fossae, dough abdomen were other science of abdominal tuberculosis. Coexistence of pulmonary tuberculosis was present in 19 out of 100

cases. On routine blood examination, most of patients had anaemia, raised ESR for the first hour. Ascitic fluid analysis was also done. Cobweb appearance is suggestive of tuberculosis.

Most of cases manage conservatively showing features suggestive of tuberculosis and HIV positive in 3 cases. FNAC was done for ileal lymphadenitis cases for tissue diagnosis. FNAC also done for ileocecal mass to confirm positive for tuberculosis. 46 cases were treated by surgical approach. For few cases, preoperative diagnostic laparotomy done. Per operatively, most of cases presented with adhesive tuberculosis, abdominal cocooning and mesenteric lymphadenopathy. Some of the patients had ileocecal mass and strictures and are combination of both. Conservative resection was done for majority of cases. Few cases required radical resection like right hemicolectomy. Adhesiolysis, release of setae and membranes, removal of abdominal cocooning and mesenteric lymph node biopsies were done for histopathological confirmation.

Radical surgeries result in malabsorption syndrome, extensive mobilisation of colon, etc. lead to risk of injury to vital structures like duodenum, liver, spleen, kidney, ureters and urinary bladder.

Merits of Conservative Resection Surgeries

1. Easier to perform surgeries with minimum incisions.
2. Minimum risk injury to structures like pancreas, liver and spleen.
3. Minimum mobilisation of colon.
4. Conservative surgery resection leaves the considerable length of functioning bowel and leaves smaller raw area for peritoneal healing.
5. Time taken for surgery was less.

Procedures Done

1. For ileal strictures, local resection done (9 and 10) for multiple strictures combined with short segment end-to-end anastomosis was done for 7 out 19 cases, i.e. about 37%.⁴

2. Stricturoplasty was done for 2 cases that is about 11%. This enteroplasty resulted in good prognosis with combination of ATT chemotherapy.^{5,10,11}
3. Conservative surgery with ATT chemotherapy along with supportive treatment gives excellent result in the management of abdominal tuberculosis.

CONCLUSION

Abdominal tuberculosis is quite common in this part of Karnataka. Most of the cases come from rural areas. Majority of the cases are of low socioeconomic status. 100 cases of abdominal tuberculosis taken up for this study, 54 cases responded with conservative management with ATT and 46 cases having undergone various types of surgical procedures.

Our institution has minimum facility of investigation like USG abdomen, x-ray chest and ascitic fluid analysis. Some of the patients were submitted for diagnostic laparotomy before operating definite surgical procedures. KIMS Hospital, Karwar, is a government district hospital, now attached to newly-established government medical college and this institute has not been provided CT scanning facilities though this investigation is essential and has advantages for diagnosis of abdominal tuberculosis.

A trial with ATT is justifiable in some of symptomatic cases of abdominal tuberculosis even in the absence of laboratory confirmation of the disease. Surgical approach management is essential in the management of abdominal tuberculosis when disease involves the lower gastrointestinal tract. Subacute intestinal obstruction and absolute obstruction of the gut required surgical intervention. Most of the tubercular pathology found in ileocecal junction, ileum, ascending colon and mesenteric lymph nodes. Conservative surgeries resulted good prognosis than radical surgeries. Surgical approach management is mandatory in obstructive pathology and postoperative chemotherapy with ATT 6 to 9 months as excellent prognosis of the disease. No recurrence, no morbidity noticed in the follow up of cases. We have followed up the cases for period of 3 to 6 months. Patients who have been submitted for surgery for abdominal tuberculosis stayed in hospital for 1 week to 3 weeks.

Patients have shown considerable health improvement and have good quality of life.

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