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Original Research Article

Abdominal tuberculosis: a clinicopathologic study in Kashmir valley

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ABSTRACT

Background: Tuberculosis is a major health hazard in India. Because of its diverse manifestations, difficult diagnosis, widespread complications, prolonged morbidity and increased mortality the study of this disease becomes even more important. The objectives of the study were to study age and sex distribution of abdominal tuberculosis, to study association of abdominal tuberculosis with pulmonary tuberculosis, to study various clinical presentations of abdominal tuberculosis, to study various modalities for diagnosis of abdominal tuberculosis and to study the surgical management in relevant patients of abdominal tuberculosis.
Methods: This study was carried out in 50 patients of abdominal tuberculosis of different age group and sex admitted in Department of Surgery, SMHS Hospital, Govt. Medical College, Srinagar during the period from 2002 to 2004. The patients of abdominal tuberculosis fell into two broad categories - those presenting with acute/sub-acute intestinal obstruction and those without obstruction. All patients were worked up with the elicitation of proper history, clinical examination, laboratory investigation, etc. The diagnosis was confirmed by IgM ELISA for tuberculosis, peritoneocentesis, FNAC, laparotomy and biopsy of the specimen obtained at the time of surgery.
Results: Maximum incidence of abdominal tuberculosis was noted in third and fourth decades followed by second decade of life. Males constituted 60% and females constituted 40% of total patients. 23 patients presented with acute and 27 patients with chronic onset of signs and symptoms respectively. Abdominal pain, anorexia, weight loss, weakness, vomiting and constipation were the main presenting symptoms. No haemoglobin and raised ESR were the commonest finding on routine laboratory investigations in majority of the patients. IgM ELISA for tuberculosis was positive in 41 patients (95.34%). Surgical intervention was required in 50% of the patients.
Conclusions: Good clinicopathological workup in patients of abdominal tuberculosis results in earlier diagnosis and timely management of this curable disease.

Keywords: Abdominal tuberculosis, Clinicopathologic study, Kashmir valley

INTRODUCTION

Tuberculosis is a specific infectious disease caused by *Mycobacterium tuberculosis.* It is still a worldwide public health problem despite the fact that the causative organism was discovered more than 100 years ago (in 1882 by Robert Koch). This disease commonly affects lungs and causes pulmonary tuberculosis but it can also affect intestines, meninges, bones and joints, lymph glands, skin and other tissues of the body. Among the extra pulmonary forms of the disease abdominal tuberculosis continues to be a major scourge in the developing countries. This disease was common in the western world during 18th, 19th and first half of 20th century, but with the advent of new more efficacious antitubercular drugs, effective vaccination, pasteurization, better hygiene and raised standards of living, the disease

has become rare in the developed countries. However, with the reports that AIDS patients are more susceptible to tuberculosis especially extrapulmonary variety, abdominal tuberculosis had made a comeback in the developed nations too.[1]

For containment of tuberculosis infection in an individual, intact cellular immunity is required and HIV is the most important risk factor for progression of dormant tuberculosis infection to clinical disease, because of its ability to destroy the immune system.[2]

Tuberculosis is a major health hazard in India.[3] It is because of the widely prevailing co-existing malnutrition, poverty, overcrowding and lack of medical facilities in certain areas.[4] Abdominal tuberculosis may involve the gastrointestinal tract, peritoneal and mesenteric lymph nodes. Commonest sites of involvement are the terminal ileum and ileo-caecal region followed by jejunum and colon. Multiple sites of involvement are common.

The intestinal lesions are either ulcero-constrictive (small intestine) or hypertrophic (ileo-caecal). Tuberculosis is the commonest cause of a stenotic intestinal lesion in tropical countries like India whereas Crohn's disease and malignancy predominant in the west. Ileo-caecal lesions also have to be differentiated from an appendicular mass and ameboma. Increased amounts of mesenteric fat, enlarged lymph nodes with caseation, peritoneal tubercles and ascites are characteristic.

Histopathological examination reveals epithelioid cell granulomas with Langhan's giant cells and central caseation necrosis. Acid fast bacilli are difficult to demonstrate on culture from intestinal lesions.

The disease is common in young adults. It may have a chronic, sub-acute or acute presentation.

With its vague symptoms and non-specific signs, it may mimic any disease and challenge diagnostic skills- even in areas where the disease is prevalent a correct clinical diagnosis is made in only one half of the cases. Ulcerative lesions of the small intestine present with chronic abdominal pain and diarrhea, and mal-absorption is common. Small intestinal strictures and hypertrophic ileocecal lesions cause sub-acute intestinal obstruction. Peritoneal tuberculosis presents with ascites or sub-acute intestinal obstruction due to adhesions. Nodal tuberculosis is usually associated with intestinal or peritoneal lesions.

Despite recent advances in surgery and the availability of specific anti tuberculosis drugs, the mortality of abdominal tuberculosis remains high. It can be reduced only by timely diagnosis and judicious treatment outlined above.

Because of its diverse manifestations, difficult diagnosis, widespread complications, prolonged morbidity and increased mortality the study of this disease becomes even more important. Keeping in view the above factors, this study has been carried out to study the pattern of abdominal tuberculosis in this part of the country which includes some of the most backward areas.

METHODS

This study was carried out in 50 patients of abdominal tuberculosis of different age group and sex admitted in Department of Surgery, SMHS Hospital, Govt. Medical College, Srinagar during the period from 2002 to 2004.

The patients of abdominal tuberculosis fell into two broad categories - those presenting with acute/sub-acute intestinal obstruction and those without obstruction. In patients with acute presentation who had to be operated on an emergency basis, routine investigations could not be done and diagnosis was made after laparotomy and biopsy of the tissue obtained during surgery, where as those patients who responded to conservative management and were not operated, were further evaluated for tubercular lesions in the abdomen after the acute symptoms awaited.

Chronic group of cases were worked up with the elicitation of proper history, clinical examination, laboratory investigation, etc. In these cases, surgery was undertaken if there were associated features of intestinal obstruction or if diagnosis was doubtful.

Barium follow through was done in those patients who were suspected to be having small bowel lesions and serial abdominal films were taken at hourly interval. These films were then analyzed for movement of the contrast, disparity in the lumen of the gut, dilatation of small gut loops, level of obstruction, time interval taken by the barium to reach the right colon. Barium enema was done in those patients, where the large bowel lesions were suspected.

All the patients were subjected to a series of routine and specific investigations. The diagnosis was confirmed by IgM ELISA for tuberculosis, peritoneocentesis, FNAC, laparotomy and biopsy of the specimen obtained at the time of surgery.

In those patients having ascites, the ascetic fluid was examined bio-chemically and cytologically and a case was suspected to be of tuberculosis if it contained more than 250 WBC's /cumm with lymphocytic predominance and protein content of more than 2.5gm%.

Those patients having abdominal lump as a main clinical presenting feature and without acute onset of symptoms /signs, ultrasonography was done to know the nature of lump and where required FNAC was also done, in addition to other investigations. IgM ELISA was performed for confirmation of diagnosis.

Biopsy and histopathological examination of specimen taken at the time of surgery was done to confirm the diagnosis in patients in whom surgery was performed. All the patients after confirmation of diagnosis, were started on antitubercular chemotherapy. The regimen commonly used was Rifampicin, INH and Ethambutol or Pyrazinamide or Streptomycin and 9 months. Streptomycin was given for initial 2 months only whereas rest of the drugs were continued for further 16 months

RESULTS

Table 1: Symptoms at presentation in the present study.

Symptom	No. of cases (n=50)	Percentage
Pain abdomen	47	94
Fever	25	50
Vomiting	35	70
Diarrhoea	5	10
Constipation	25	50
Alternate diarrhea and constipation	3	6
Anorexia	45	90
Night sweats	34	68
Weight loss	41	82
Lump abdomen	10	20
Abdominal distention	25	50
Cough with expectoration	9	18

Table 2: Signs in patients presenting with abdominal tuberculosis in the present study.

Sign	No. of patients	Percentage
Pallor	41	82
Lymphadenopathy (Cervical)	10	20
Fever	20	40
Chest signs	9	18
Abdominal distention	33	66
Abdominal tenderness	43	86
Lump abdomen	10	20
Ascites	11	22

The age of patients ranged from 3-80 years and majority of patients were in the age group of 31-40 years i.e., 30% followed by 26% in 21-30 years. Males constituted 60% and females constituted 40% of total patients. 30% of total patients were associated with pulmonary tuberculosis (active and healed). 18% patients were associated with active pulmonary tuberculosis and 12% patients were associated with healed pulmonary tuberculosis and they had already received antituberculosis chemotherapy. None of the patients in this study had history of extra pulmonary tuberculosis.

Symptoms at presentation in the present study are shown in Table 1.

Duration of symptoms in present study varied from two days to 3 years and majority of patients (40%) had symptoms for 1-6 months at the time of presentation. Various signs in patients presenting with abdominal tuberculosis in the present study are shown in Table 2.

ESR as determined by Westergren's method was more than 20mm in first hour in majority of our patients. Results of IgM ELISA for tuberculosis are shown in Table 3.

Table 3: IgM ELISA for tuberculosis.

Result	No. of patients (n=43)	Percentage
Positive	41	95.3
Negative	2	4.7
Total	43	100

Various radiological findings on Barium contrast study of abdomen in patients with abdominal tuberculosis are shown in Table 4.

Table 4: Radiological findings on Barium contrast study of abdomen.

Findings	No. of patients
Barium meal follow through (No. of patients=21)	21
Ileocecal irregularity with pulled up caecum	4
Strictures of terminal ileum	4
Multiple narrowed and dilated segments of small gut	12
Normal study	4
Barium enema (No. of patients=4)	4
Filling defect of caecum with pulled up caecum	2
Normal study	2

Routine laboratory investigations anaemia was the most common finding and 82% of patients had a haemoglobin level of less than 12gm%. Indications for surgery in the present study are shown in table 5. Operative diagnosis in the present study is shown in Table 6.

Table 5: Indications for surgery.

Diagnosis	No. of patients
Intestinal obstruction	16
Peritonitis	7
For diagnosis of lump	1
Chronic cholecystitis with cholelithiasis	1

Table 6: Operative diagnosis.

Preoperative diagnosis	No.	Postoperative diagnosis	No.
Abdominal tuberculosis	23	Abdominal tuberculosis	24
Lump in right iliac fossa	1		
Chronic cholecystitis with cholelithiasis	1	Abdominal tuberculosis	1
Total patients	25	Total patients	25

Involvement of peritoneum only was seen in 11 patients, involvement of small intestine only was seen in 20 patients. Involvement of small and large intestine was seen in 7 patients, and no patient understudy presented with the involvement of large intestine only.

5 Patients had evidence of involvement of abdominal lymph nodes whereas multiple lesions were noted in 7 patients.

Intestinal obstruction was the most common complication of abdominal tuberculosis in the preset study and was seen in 16 patients (32%).

Next common complication was ileal perforation with peritonitis seen in 3 patients. Various surgical procedures carried out in the study are shown in Table 7.

Table 7: Surgical procedures performed.

Surgical procedure	No. of patients
Laparotomy and biopsy of mesenteric/retroperitoneal lymph nodes/omentum/peritoneum	25
Small intestine lesion	
Stricturoplasty	1
Resection and anastomosis	3
Closure of ileal perforation	1
Large Intestine and terminal ileum	
Ileo-transverse bypass	4
Right hemicolectomy	1
Others	
Adhesiolysis	9

DISCUSSION

30% of patients were in the fourth decade, 26% in third decade and 14% in second decade. This was similar to study by Agarwal S et al.[5]

General symptoms like weight loss, anorexia and weakness have been reported by varying number of patients. In our study among general symptoms weight loss, anorexia and weakness were most common and present in 82% of patients whereas fever was present in only 50% of patients. Similar observations have been made by Ghaffar ANU et al and Bernhard JS et al.[6,7]

In the present study, abdominal pain was the common presenting symptom and was observed in 94% of the patients. The pain was more commonly localized in right iliac fossa and umbilical region. This is so probably because the ileocecal region is the commonest site of involvement in intestinal tuberculosis. Abdominal pain is more commonly seen in patients presented with acute symptoms as compared to patients presented with chronic symptoms. This is similar to study by Bernhard JS et al and Ihekwaba.[7,8] In our study, vomiting was the next common presenting feature seen in 70% of patients. This was similar to study by Anand and Pathak.[9] Constipation was found in 50% of the cases similar to study by Dass and Shukla.[10] Diarrhoea was present in 10% of the patients, which was similar to study by Dass and Shukla.[10] Diarrhoea alternating with constipation was present in 8% of the cases, which was similar to studies by Dass and Shukla and Anand.[10,11] Fever was found in 50% of the cases, which was similar to studies by Paustian and Vij.[12,13] Loss of weight was present in 82% of the cases, which was similar to studies by Anand and Vij.[11,13] Abdominal distention was present in 50% of the cases, which was similar to study by Dass and Shukla.[10] Incidence of night sweats was present in 68% of the cases, which was similar to studies by Anand and Paustian.[11,12] Most of the patients presented within six months of onset of symptoms, which was similar to studies by Bernhard JS et al and Dass and Shukla.[7,10] Abdominal tenderness was present in 86% of the cases, which was similar to studies by Bhansali and Iwasaki Y et al.[14,15] Abdominal lump was present in 20% of the patients, which was similar to study by Dass and Shukla.[10] The location of abdominal lump in right iliac fossa was noted in 80% of patients, which was similar to study by Romesh and Mehta.[16] Ascites was observed in 22% of patients, which was similar to study by Ramanathan M et al.[17] Anaemia was found in 82% of the patients, which was similar to study by Bhansali SK et

al.[18] In the present study, 30% of the patients had associated with pulmonary tuberculosis, which was similar to study by Pettengel KE et al.[19] Evidence of involvement of ileocecal region was the commonest finding seen in contrast studies of GIT, which was similar to studies by Lewis.[20] On the basis of clinical examination and routine and specific investigations, 50% of the patients in our study could be diagnosed to be suffering from abdominal tuberculosis preoperatively which was similar to study by Dass and Shukla.[10] The accuracy rate of preoperative diagnosis in our study was 50% which was similar to study by Dass and Shukla.[10] Ileocaecal region was the commonest side of involvement in our study which was similar to study by Menon and Anguli.[21] Ileal perforation with peritonitis was seen in 6% of patients which was similar to study by Bannerjee.[22]

CONCLUSION

Good clinicopathological workup in patients of abdominal tuberculosis results in earlier diagnosis and timely management of this curable disease.

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REFERENCES

1. Sundaram J, McDonald RJ, Maniatis T, Oleske J, Kapila R and Reihmann LB. Tuberculosis as a manifestation of AIDS. JAMA. 1980;256:362-6.
2. Narain JP, Ravigilone MC, Kochi A. HIV associated tuberculosis in developing countries-Epidemiology and strategies for prevention. tubercle and lung disease. 1992;73:314-21.
3. Vakil HK and Desai PF. Abdominal tuberculosis. Ind J Surg. 1985;47(5):206-10.
4. Khoury GA, Payne CR, and Harvey DR. Tuberculosis of peritoneal cavity. Br J Surg. 1978;65:808-11.
5. Aggarwal S, Gera N. Tuberculosis- an underestimated cause of ileal perforation. J Indian Med Assoc. 1996;94(9):341-52.
6. Abdul-Ghaffar NU, Ramadan TT, Marafie AA. Abdominal tuberculosis in Ahmadi, Kuwait: a clinic-pathological review. Trop Doct. 1998;28(3):137-9.
7. Bernhard JS, Bhatia G, Knauer CM. Gastrointestinal tuberculosos: an eighteen patient experience and review. J Clin Gastroenterol. 2000;30(4):397-402.
8. Bhansali SK. Abdominal tuberculosis. Experience with 30 cases. Am J Gastroenterol. 1977;67:324-37.
9. Pettengel KE, Larsen C, Garb M, Mayet FG, Simjee AE, Pirie D. Gastrointestinal tuberculosis in patients with pulmonary tuberculosis. Q J Med. 1990;74(275):303-8.
10. Dass P, Shukla HS. Clinical diagnosis of abdominal tuberculosis. Br J Surg. 1976;63:941-46.
11. Anand SS. Hypertrophic ileocaecal tuberculosis in India with a record of fifty hemocolectomies. Ann Roy Coll Surg Engl. 1956;19:205.
12. Paustian FF, Bockus HL. So called Primary ulcerohypertrophic ileocaecal tuberculosis. Am J Med. 1959;27:509.
13. Vij JC, Malhotra V, Choudhary V, Jain NK, Govind Prashad, Choudhary A and Gulati P. A clinic-pathological study of abdominal tuberculosis. Ind J Surg. 1992;39:213-20.
14. Bhansali SK. The challenge of abdominal tuberculosis in 318 cases. Indian J Surg. 1978;40:65.
15. Wasaki Y, Nakagawa M. Intestinal tuberculosis and tuberculous peritonitis. Nippon Rinsho. 1998;56(12):3110-3.
16. Romesh Kumar N, Mehta RB. A clinic-pathological study of abdominal tuberculosis. Dissertation submitted to the University of Madras:1981.
17. Ramanathan M, Wahinuddin S. Safari E, Sellaiah SP. Abdominal tuberculosis: a presumptive diagnosis. Singapore Med J. 1997;38(9):364-8.
18. Bhansali SK. Abdominal tuberculosis. Experience with 30 cases. Am J Gastroenterol. 1977;67:324-37.
19. Pettengel KE, Larsen C, Garb M, Mayet FG, Simjee AE, Pirie D. Gastrointestinal tuberculosis in patients with pulmonary tuberculosis, Q J Med. 1990;74(275):303-8.
20. Lewis EA and Kolawole TM. Tuberculosis ileo-colitis in Ibadan: a clinic-radiological review. Gut. 1972;13:646-53.
21. Menon CPV and Anguli VC. Ileocolic tuberculosis. Ind J Surg. 1949;11:222.

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