

Original Research Article

A study on the surgical management of abdominal tuberculosis in patients attending a tertiary hospital

Vikram Yogish*, Himanshi Grover, Sunu Ancy Joseph

Department of General Surgery, SRM Medical College Hospital and Research Centre, Kattankulathur, Chennai, India

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*Correspondence:

Dr. Vikram Yogish,

E-mail: yogishvikram@gmail.com

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ABSTRACT

Background: Tuberculosis is seen due to various factors such as overcrowding and unhygienic conditions. In order to diagnose a case of abdominal tuberculosis, a detailed history and a thorough clinical examination must be done. The objective of this article was to determine the number of patients who presented to a tertiary hospital with abdominal tuberculosis and in which of these patients management in the surgical department was required.

Methods: A total of 50 patients who had abdominal tuberculosis were studied. The study was carried out at SRM Medical College Hospital and Research Center, Kattankulathur, Tamil Nadu, India. The study was carried out from February 2017 to January 2020. A detailed history was obtained and a thorough clinical examination was done. Investigations such as CBC, chest X-ray, abdomen X-ray, ultrasound scan and CT scan of the abdomen were done. When required, patients underwent surgery and the results obtained were analyzed and tabulated. In our study, out of a total of 50 patients, 32 patients were found to have required surgery. The statistics were analyzed using SPSS package 16.0.

Results: It was seen that in this study, male patients were more commonly affected with abdominal tuberculosis, and resection and anastomosis was the most common surgical procedure done when required. The findings obtained were compared with other studies.

Conclusions: In patients with abdominal tuberculosis, a detailed history and a thorough clinical examination are required in order to diagnose the condition as early as possible.

Keywords: Abdominal tuberculosis, Clinical examination, Investigations, Surgical procedure

INTRODUCTION

Tuberculosis is seen quite a bit in developing countries. There are various reasons for this like poor socio-economic conditions and overcrowding to name a few. Under nutrition, unhygienic environment and poor pasteurization of milk have also been shown to contribute to this problem.¹ Tuberculosis bacteria reach the gastrointestinal tract via various routes such as haematogenous spread, ingestion of infected sputum, or direct spread from infected contiguous lymph nodes. In order to diagnose a case of abdominal tuberculosis, a high index of suspicion is required. A thorough history and

clinical examination should be done. Patients with abdominal tuberculosis may present with features of anorexia, fever, history of loss of weight, loss of appetite, history of abdominal pain and sometimes a palpable mass may also be found. Patients may also present with features of intestinal obstruction or perforation of the bowel and these situations may turn out to be emergencies and these conditions may require surgery. Chronic patients with subacute intestinal obstruction may be managed conservatively and surgery may be planned after suitable workup.² In India, tuberculosis is responsible for 5-9% of all cases of small intestinal perforations.³ Early diagnosis of this condition is

important and imaging also plays an important role. Surgeons must be aware of the wide clinical spectrum of abdominal tuberculosis and have a high index of suspicion when confronted with patients from an endemic area presenting with unclear abdominal symptoms.⁴ Tandon et al reported constitutional symptoms in 1/3rd of his patients. Loculation of ascitic fluid, involvement of the mesenteric lymph nodes or matted bowel loops may present with a lump in the abdomen.⁵ The choice of surgery has become more conservative, and limited ileocaecal resection and anastomosis is preferred to right hemicolectomy.⁶ Chest X-ray, abdomen X-ray, ultrasound of the abdomen and CT scan of the abdomen are useful investigations in patients suspected to have abdominal tuberculosis.

The objective of the study was to determine the number of patients who presented to a tertiary hospital with abdominal tuberculosis and in which of these patients management in the surgical department was required.

METHODS

A total of 50 patients who had abdominal tuberculosis were studied. This was a prospective study carried out at SRM Medical College Hospital and Research Center, Kattankulathur, Tamil Nadu, India. The study was carried out from February 2017 to January 2020, for a period of three years.

Inclusion criteria

Patients who had abdominal tuberculosis and who required care in the surgical department were included in the present study.

Exclusion criteria

Patients who had other manifestations of tuberculosis were excluded from the present study.

A detailed history was taken and a thorough clinical examination was done. Investigations such as, complete blood count (CBC), erythrocyte sedimentation rate (ESR), Mantoux, chest X-ray, abdomen X-ray, ultrasound of the abdomen and CT scan of the abdomen were done. Ascitic fluid analysis was also done. All the reports were carefully followed up. The patients who required surgical intervention were then taken up for surgery and the findings and the procedures that were done were tabulated. The statistics were analyzed using SPSS package 16.0.

RESULTS

From Table 1, it was found that, in present study, people between the age group of 51 years to 60 years (36%) were more commonly affected with abdominal tuberculosis. This shows that, in present study people

who were older were more affected with abdominal tuberculosis.

Table 1: Age group of patients who had abdominal tuberculosis (n=50).

| Age group (years) | No. of patients | Percentage |
|-------------------|-----------------|------------|
| 21-30 | 3 | 6 |
| 31-40 | 7 | 14 |
| 41-50 | 12 | 24 |
| 51-60 | 18 | 36 |
| 61-70 | 10 | 20 |

Table 2: Gender of patients who had abdominal tuberculosis (n=50).

| Gender | No. of patients | Percentage |
|--------|-----------------|------------|
| Male | 29 | 58 |
| Female | 21 | 42 |

From Table 2, it was found that male patients (58%) were more commonly affected with abdominal tuberculosis.

Table 3: Treatment offered to patients who had abdominal tuberculosis (n=50).

| Treatment | No. of patients | Percentage |
|--------------|-----------------|------------|
| Conservative | 18 | 36 |
| Operative | 32 | 64 |

From the above Table 3, it was found that in present study out of a total of 50 patients, 32 patients (64%) had to undergo a surgical procedure for the treatment of abdominal tuberculosis. This shows that, though patients can initially be treated conservatively, many a time they may still require surgical intervention.

Table 4: Procedure done for patients operated for abdominal tuberculosis (n=32).

| Procedure | No. of patients | Percentage |
|--|-----------------|------------|
| Resection anastomosis | 12 | 37.5 |
| Adhesiolysis | 8 | 25 |
| Perforation closure | 6 | 18.75 |
| Right hemicolectomy with ileo transverse anastomosis | 6 | 18.75 |

From Table 4, it was found that in present study resection and anastomosis was the commonest surgical procedure done (37.5%).

From the Table 5, it was seen that ESR was elevated in 62% of our patients. Table 6, shown that Mantoux test was positive in 58% of our patients. This shows that Mantoux is an important test to be done.

Table 5: Results of ESR test done for patients who had abdominal tuberculosis (n=50).

| Test | No. of patients | Percentage |
|---------------------|-----------------|------------|
| Elevated ESR | 31 | 62 |
| Normal ESR | 19 | 38 |

Table 6: Results of Mantoux test done for patients who had abdominal tuberculosis (n=50).

| Test | No. of patients | Percentage |
|-------------------------|-----------------|------------|
| Mantoux positive | 29 | 58% |
| Mantoux negative | 21 | 42% |

DISCUSSION

It is important to make a diagnosis of abdominal tuberculosis early because the initiation of anti-tuberculous therapy will be very helpful for the patient. Akinkuolie et al reported that 85.1% of patients with clinically diagnosed abdominal tuberculosis in a high prevalent area recovered after receiving anti-tuberculous therapy for a period of 9-12 months.⁷ Wani et al reported a study on surgical emergencies of tubercular abdomen in developing countries.⁸ Investigations play a very important role in the diagnosis of tuberculosis and more so in abdominal tuberculosis. In abdominal tuberculosis, biopsy is also very important. The methods of biopsy include, endoscopic GI mucosal biopsy, image-guided percutaneous biopsy, endoscopic ultrasound guided biopsy, and surgical (open or laparoscopic) biopsy. Colonoscopic biopsy may not reveal granulomas in all cases, as the lesions are submucosal.⁹ Laparoscopy is now becoming the diagnostic procedure of choice. It is rapid, safe and accurate. It allows biopsy of typical tubercles in the peritoneum and other organs with an accuracy of 75%. Both lymphoma and carcinomatosis can be excluded.¹⁰ The caseation necrosis in the granulomas is a very important histologic feature of tuberculosis. The various pathological lesions of intestinal tuberculosis may also be transverse ulcers, fibrosis, thickening and strictures of the bowel wall, enlarged and matted mesenteric lymph nodes, omental thickening, and peritoneal tubercles.¹¹ Mesenteric lymph nodes may become enlarged and caseate, leading to intra-abdominal abscesses. Loops of ileum, mesentery and lymph nodes may form a mass known as the 'abdominal cocoon'.¹² Diffuse peritoneal involvement may present as the ascitic, fibrous, encysted or purulent variety. The ascitic type has straw coloured fluid while the fibrous type has adhesions of intestines and viscera with less fluid. The encysted and loculated types have adhered intestines enclosing a cavity of serous fluid. The purulent type is rare.¹³ The findings of chest X-ray are also very important as this can give a clue of an underlying abdominal tuberculosis being present. Investigations such as, complete blood count (CBC), erythrocyte sedimentation rate (ESR), mantoux, chest X-ray, abdomen X-ray, ultrasound of the abdomen and CT scan of the abdomen are some of the useful investigations that

can be done in a case of abdominal tuberculosis. Adenosine deaminase (ADA) levels in the ascitic fluid are also useful in the diagnosis of abdominal tuberculosis. Contrast enhanced CT (CECT) and CT enterography provide adequate cross sectional imaging in depicting various forms of abdominal tuberculosis.

Table 7: Sex wise comparison between our study and another study.

| Gender | Present study (in %) | Charokar et al ¹⁴ (in %) |
|---------------|----------------------|-------------------------------------|
| Male | 58 | 61 |
| Female | 42 | 39 |

From the above Table 7, it was seen that in present study, 58% of male patients were affected with abdominal tuberculosis as compared to 61% who were male patients in the study done by Charokar et al.¹⁴

Table 8: Comparison of procedures done in present study and another study.

| Procedure | Present study (in %) | Bhansali et al ¹⁵ (in %) |
|---|----------------------|-------------------------------------|
| Resection anastomosis | 37.5 | 30 |
| Adhesiolysis | 25 | 18 |
| Perforation closure | 18.75 | 7.10 |
| Right hemicolectomy with ileo transverse anastomosis | 18.75 | 20.66 |

From Table 8, it was seen that in present study, 37.5% of patients required resection and anastomosis to be done as a surgical procedure as compared to 30% of patients in the study done by Bhansali et al.¹⁵

Table 9: Comparison of Mantoux result between present study and another study.

| Test | Present study (in %) | Manohar et al ¹⁶ (in %) |
|-------------------------|----------------------|------------------------------------|
| Mantoux positive | 58 | 57.60 |

Table 9 shows that in present study, 58% of patients had a positive Mantoux test as compared to 57.60% of patients in the study done by Manohar et al.¹⁶

Table 10: Comparison of ESR value between present study and another study.

| Test | Present study (in %) | Prakash et al ¹⁷ (in %) |
|---------------------|----------------------|------------------------------------|
| Elevated ESR | 62 | 61 |

Table 10 shows that in present study, 62% of patients had an elevated ESR value as compared to 61% of patients in the study done by Prakash et al.¹⁷

CONCLUSION

In patients with abdominal tuberculosis, a detailed history must be obtained and a thorough clinical examination must be done in order to diagnose the condition as early as possible. Investigations such as chest X-ray, abdomen X-ray and CT scan of the abdomen are very important investigations to be done. Patients should be admitted when required and careful monitoring of the patient must be done. When required surgical procedures may be done and post-operative care of the patient is very important. Regular follow up of the patient is also very important.

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