



Original Research Article

Yield of Diagnostic Laparoscopy in Abdominal Tuberculosis

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ABSTRACT

Background: Abdominal tuberculosis is extremely common in our country. It has a varied presentation which at times may be nonspecific, posing a diagnostic dilemma at times. The present study assesses the efficacy of diagnostic laparoscopy in establishing the diagnosis of abdominal tuberculosis.

Methods: An analysis of patients subjected to diagnostic laparoscopy for suspected abdominal tuberculosis was made for over a period of 3 years (between January 2008 and December 2011). Only patients whose diagnosis was inconclusive on other investigative modalities were included in the study. Patients with proven diagnosis pre procedure were excluded from the study. Data was collected and statistically analyzed using SPSS version 16.

Results: A total of 38 patients with vague abdominal symptoms and an unsettled diagnosis were included in this series, of which 23 (60.5%) patients were diagnosed with abdominal tuberculosis on laparoscopy. The common symptoms were pain in abdomen, change in bowel habits, loss of weight, and generalized weakness. Clinical examination was not significant, except for anemia in the majority and generalized abdominal tenderness in a few patients. Tuberculous lesions detected on laparoscopy were as follows: 17 patients had positive LN Biopsy for Kochs (of 22 patients subjected to LN Biopsy) 4 patients had terminal ileal stricture not diagnosed on pre-procedural imaging. 2 patients had loculated ascites.

Conclusions: Diagnostic laparoscopy is an efficient and reliable diagnostic tool for patients suspected with abdominal tuberculosis

Key words: (Diagnostic Laparoscopy, Abdominal Tuberculosis)

INTRODUCTION

Tuberculosis (TB) is a major public health problem in India, accounting for one-fifth of the global TB incident cases. Each year nearly 2 million people in India develop TB, of which around 0.87 million are infectious cases. It is estimated that annually around 330,000 Indians die due to TB.⁽¹⁾ It has been reported that up to 5% of TB patients may have abdominal

tuberculosis and of these, 25-60% may have peritoneal involvement.⁽²⁾ Concomitant active pulmonary TB associated with abdominal TB has been reported to range from 20-50%.⁽³⁾ Peritoneal tuberculosis can originate from mesenteric lymph nodes or through haematogenous spread or from tuberculous salpingitis.

Abdominal lymph nodal and peritoneal tuberculosis may occur without

gastrointestinal involvement in about one third of the cases. Symptoms are usually insidious with abdominal pain, swelling, fever, night sweats, anorexia and weight loss.⁽⁴⁾ Symptoms may even be absent in some patients. At times diagnostic investigations are inconclusive or equivocal, or at times some investigations are even not available at many places. Therefore it is pertinent that clinicians should maintain a high index of suspicion for TB peritonitis as missing the diagnosis can result in significant morbidity and mortality. Diagnostic laparoscopy is one of the very important methods of investigation for patients in whom the diagnosis or extent of the disease is unclear or the abdominal findings are equivocal.⁽⁵⁾

Aim: The present study assesses the efficacy of diagnostic laparoscopy in establishing the diagnosis of abdominal tuberculosis.

METHODS

The present study was carried out in a single unit of a tertiary referral centre. Prior institutional ethics committee was obtained. An analysis of patients subjected to diagnostic laparoscopy for suspected abdominal tuberculosis was made for over a period of 3 years (between January 2008 and December 2011). The initial investigations done to confirm the clinical suspicion were Barium meal Follow through, CECT Scan of the abdomen, Serum ADA levels, and PCR studies. Only patients whose diagnosis was inconclusive on these investigative modalities were included in the study. Patients with diagnosis proven prior to the laparoscopy were excluded from the study. Data was collected and statistically analyzed using SPSS version 16.

RESULTS

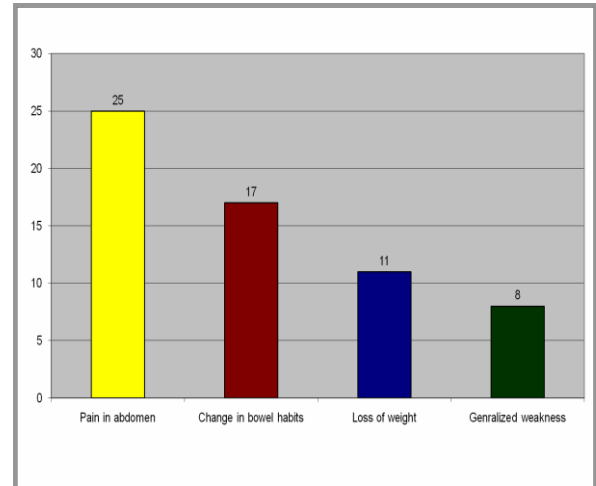


Figure 1 Symptomatology of the patients included in the study.

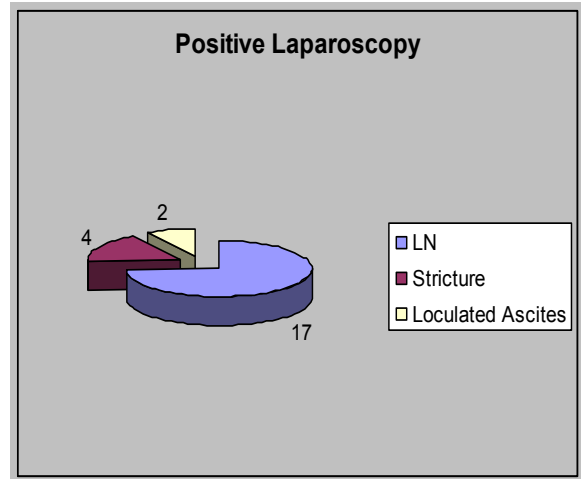


Figure 2: Tuberculous Lesions detected on Diagnostic Laparoscopy.

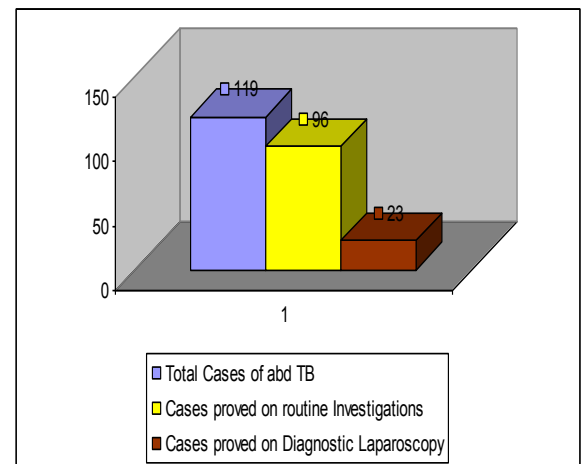


Figure 3: Yield of Diagnostic Laparoscopy.

During the study period a total of 96 patients were diagnosed to have abdominal tuberculosis and treated. A total of 38 patients (18 Male, 20 Female) with vague abdominal symptoms and an inconclusive diagnosis were included in this series. The common symptoms were pain in abdomen, change in bowel habits, loss of weight, and generalized weakness. (Figure 1) Clinical examination was not significant, except for anemia in the majority and generalized abdominal tenderness in a few patients.

Of 38 patients with inconclusive diagnosis on whom Diagnostic Laparoscopy was performed, a diagnosis of abdominal tuberculosis was made in 23 (60.5%). The tuberculous lesions detected on laparoscopy were: Lymph nodes in 17 patients (which were found to be positive for tuberculosis on Biopsy (Of 22 patients subjected to LN Biopsy) terminal ileal stricture in 4 patients not diagnosed on pre-procedural imaging and loculated ascites in two patients.

Thus of the total of 119 cases diagnosed to have abdominal TB, 96 patients (80.6%) were diagnosed with routine investigations performed by us, and 23 patients (19.32%) required Diagnostic Laparoscopy to reach the diagnosis.

DISCUSSION

The most commonly presenting symptoms of abdominal tuberculosis are abdominal distension (95%), abdominal pain (82%), weight loss (80%), weakness (76%), loss of appetite (75%) and fever (69%). The most common physical findings are ascites (96%), fever (75%) and abdominal tenderness (43%).⁽⁶⁾ However many a times, symptoms may be insidious. Besides abdominal lymph nodal and peritoneal tuberculosis may occur without gastrointestinal involvement in about one third of the cases.⁽⁴⁾ As a result there is usually a delay in diagnosis ('doctor's delay', or 'health system's delay'), from the

first visit of a patient until the establishment of TB diagnosis.⁽⁷⁾

Diagnostic laparoscopy is very important in the armamentarium of investigations for patients in whom the diagnosis or extent of the disease is unclear or the abdominal findings are equivocal. There is enough literature evidence to suggest that Diagnostic laparoscopy is the most specific diagnostic test for abdominal TB^(8, 9) with its advantage of histological confirmation.⁽¹⁰⁾ Unfortunately this investigation still tends to be used as a last resort,^(11, 12) and our series was no exception. In former times its function was served by laparostomy^(13,14) and a reluctance to intervene might then have been more reasonable.

In the present study Diagnostic Laparoscopy was successful in making diagnosis in 60.5% (23/38 patients). Of the 22 lymph nodes obtained, 17 (77.2%) were found to have tuberculosis on histopathology. This would not have been otherwise proved by any other investigation and at the most may have been treated as non specific lymphadenitis. The 4 patients, who had terminal ileal stricture which had not been revealed on Barium studies and CECT Scan, were apparent on Diagnostic Laparoscopy and in the background of suspicion of abdominal tuberculosis subjected to local resection and anastomosis, with histopathology confirming the diagnosis of tuberculosis. 2 patients were found to have a small loculated ascites, which was not seen on imaging. The fluid culture of the fluid grew Acid Fast Bacilli, thus obtaining the diagnosis of tuberculosis. Thus the overall yield of Diagnostic Laparoscopy in our study was 60.5%. In comparison to this, other investigations like, colonoscopy and biopsy may establish a diagnosis in about 80% of cases of ileocaecal or colonic tuberculosis⁽⁷⁾ Culture of the ascitic fluid has been positive in about

83% of the cases but requires at least one litre of fluid to be worthwhile. ⁽⁸⁾ Ascitic fluid adenosine deaminase (ADA) with a cut-off level of 32 units per litre has a sensitivity of 93% and a specificity of 96% for tuberculosis. ⁽⁸⁾ An enzyme linked immunosorbant assay (ELISA) of ascitic fluid, pleural fluid and serum has also been used to detect saline extracted mycobacterial antigen. Using serum, the sensitivity has been found to be 80% in abdominal tuberculosis with 93% specificity. This test has also been found useful for distinguishing tuberculosis from Crohn's disease. ⁽⁹⁾ These techniques are relatively safe but may not be completely reliable and are prone to both false-negative and false-positive results ⁽¹⁰⁾

Apart from the cost, many of these investigations are not available in many parts of the developing countries. This fact is more relevant as many studies have indicated that the incidence of extra-pulmonary tuberculosis is higher in Asians than Caucasians ⁽¹¹⁾

It is a major management issue, when most of the above investigations are either equivocal or negative or the facilities are not available. 20-50% of death has been reported in patients of abdominal tuberculosis prior to receiving of anti-tuberculous chemotherapy. ⁽⁸⁾ Besides this there are also reports of patients in whom tuberculosis could not be diagnosed during the life of the patient but was revealed at autopsy. ⁽¹²⁾ Studies have shown that laparotomy and biopsy have been used as last resort for the confirmation of diagnosis. ⁽¹³⁾ In such cases, a therapeutic trial of antituberculous treatment has been by advocated by many authors. ^(12,14,15,16) However apart from the risk of developing multi-drug resistant tuberculosis and a number of missed diagnoses, the question whether it is justified to administer empirical AKT, in the era of Evidence based medicine, needs to be answered.

Diagnostic laparoscopy is available at almost all centres. It is also the most sensitive and specific diagnostic procedure for abdominal peritonitis as reported by many ^(8,9,17) and it has added advantage of obtaining tissue biopsy. All this makes it a very cost effective investigation for the diagnosis of abdominal tuberculosis. Also we would like to propose to practice it early rather than as a last resort as done by us in the present study and also others ^(11,12) when there is a strong clinical suspicion; and other basic investigations are equivocal, or negative.

CONCLUSION

Diagnostic laparoscopy is the most specific diagnostic test for abdominal TB, with an advantage of obtaining histopathological confirmation of the diagnosis. Besides it should be done early in the management protocol, rather than as a last resort.

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