

Isolated Tubercular Appendicitis: A Case Report.

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ABSTRACT

Introduction: Abdominal tuberculosis (TB) comprises approximately 5% of all cases of TB and appendix is a relatively rare site for tuberculosis. In this report we present a case of tubercular appendicitis. **Case report:** A 40 year old female presented to the casualty ward of our hospital with complaints of pain in abdomen and back since two months. There were 2 to 3 episodes of vomiting and the vomitus was bilious in nature. Abdominal examination revealed a soft abdomen with tenderness in right iliac fossa and rebound tenderness with positive Pointing sign and Rovsing sign. Routine haematological investigations of the patient revealed raised counts with negative viral markers. Ultrasonography of the abdomen revealed a peristaltic, tubular non-compressible structure of 8 mm in diameter in right iliac fossa with severe probe tenderness. We decided to perform appendectomy on the patient using a gridiron incision. Biopsy sample showed obliterated lumen with dense and diffuse infiltration by lymphocytes and many granulomas composed of epithelioid cells, Langhans giant cells and lymphocytes. Some of the granulomas showed central areas of caseating necrosis. Based on the findings of the biopsy specimen, the patient was diagnosed with granulomatous appendicitis, suggestive of tuberculosis. Anti-tubercular therapy was started postoperatively. The patient recovered completely after completion of the treatment. **Conclusion:** Preoperative diagnosis of appendicular TB is difficult because of the non-specific symptoms. In most cases, patients present as appendicitis and postoperative biopsy study confirms the diagnosis.

Keywords: Tuberculosis, appendicitis, pain, diagnosis.

INTRODUCTION

Abdominal tuberculosis (TB) comprises approximately 5% of all cases of TB.^[1] Multiple sites in the abdomen can be affected. The ileocecal region is the most common site of intestinal involvement as it is affected in 75% of cases. Other locations of involvement are the ascending colon, jejunum, appendix, duodenum, stomach, esophagus, sigmoid, colon and rectum.^[2] Appendix is a relatively rare site for tuberculosis. It may either be involved secondary to ileocaecal tuberculosis, or to tuberculosis at another site within the abdomen, or, may occur without evidence of TB elsewhere, which is even rarer. In this report we present a case of tubercular appendicitis in which no other evidence of tuberculosis was found in the patient other than the histopathological examination of the diseased appendix.

CASE REPORT

A 40 year old female presented to the casualty ward of our hospital with complaints of pain in abdomen

and back since two months. On elaborating, the patient explained that she had been feeling ill since past two months with complaint of pain in abdomen, which was colicky in nature and increased two hours after food intake. The pain was accompanied by nausea and vomiting. There were 2 to 3 episodes of vomiting and the vomitus was bilious in nature. There were few episodes of intermittent right loin pain. Patient had a past history of depression and has been on tricyclic antidepressants since past 5 years. There was no history of diabetes, hypertension, asthma, tuberculosis or any operative procedure. On examination, the vitals of the patient were found to be within normal limits and the systemic examination of cardiovascular, respiratory and nervous system had no significant findings. Abdominal examination revealed a soft abdomen with tenderness in right iliac fossa and rebound tenderness. Pointing sign and Rovsing sign were present and Psoas sign and Obturator sign were absent. There was no guarding or rigidity. Peristalsis was normal with no organomegaly. The patient scored 6 out of 10 in the Alvarado score.

Routine investigations of the patient revealed haemoglobin 12.1gm%, white blood cell count of 8300/microL, platelet count of 332,000/L, blood urea nitrogen of 18 mg/dL and creatinine of 1.1mg/dL. Viral markers were negative and

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erythrocyte sedimentation rate was noted at 25 mm/hour. Ultrasonography of the abdomen revealed a peristaltic, tubular non-compressible structure of 8 mm in diameter in right iliac fossa with severe probe tenderness. Rest of the sonography showed normal study. Based on the history provided and findings on the imaging study, a diagnosis of infective appendicitis was made. We decided to perform appendectomy on the patient using a gridiron incision. Intra-operatively, a retrocecal inflamed appendix of length 10 cm with surrounding adhesions was discovered. There was no evidence of miliary tuberculosis or meckel's diverticulum. A biopsy sample was obtained which showed obliterated lumen with dense and diffuse infiltration by lymphocytes and many granulomas composed of epithelioid cells, langhans giant cells and lymphocytes. Some of the granulomas showed central areas of caseating necrosis. 20% Ziehl-Neelsen staining was negative of the biopsy specimen. Based on the findings of the biopsy specimen, the patient was diagnosed with granulomatous appendicitis, suggestive of tuberculosis. Surgery followed by anti-tubercular therapy is the treatment of choice in such cases, supplemented with corticosteroids if associated with peritoneal tuberculosis (TB). Standard anti-TB treatment with four antituberculous drugs (isoniazid 5 mg/kg/day, rifampicin 10 mg/kg/day, pyrazinamide 30 mg/kg/day, and ethambutal 20 mg/kg/day) was started for two months followed by isoniazid and rifampicin for 4 months. The patient recovered completely after completion of the treatment.

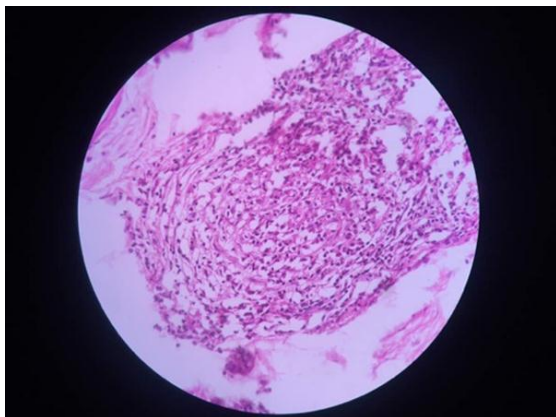


Figure 1: Biopsy staining of appendix showing obliterated lumen with dense and diffuse infiltration by lymphocytes and many granulomas.

DISCUSSION

Appendicitis is the inflammation of the vermiform appendix and is one of the most common causes of the acute abdomen and the most frequent indication for an emergent abdominal surgical procedure across the globe.^[3] Although the precise mechanism of infection is unclear, but some of the proposed

mechanisms are swallowing of infected sputum in active pulmonary TB, ingestion of contagious milk, hematogenous spread or direct extension from adjacent organs.^[4] Ileocecum is the most common site for TB, and the affinity of the tubercle bacillus for lymphoid tissue and areas of physiologic stasis may be reasons for it. Appendix also shows the presence of B and T lymphoid cells in the mucosa and submucosa of the lamina propria.^[5] These cells create a lymphoid pulp that helps in immunologic function by increasing immunoglobulin A. Hyperplasia of the lymphoid tissue can cause obstruction of the appendix and lead to appendicitis. Diagnosis of abdominal tuberculosis is made based on the clinical presentation of the patient. In addition to the classical symptoms of TB, abdominal symptoms and epidemiological factors also help in clinching the diagnosis. However, in our patient, classical symptoms of TB were absent. It has been reported that appendicular TB is practically always associated with the same infection in the cecum and that ileocecal TB is usually found with no involvement of the appendix, thereby suggesting that the latter is usually secondarily affected.^[6] Symptoms of the disease are commonly nonspecific and a presumptive diagnosis is difficult to make, like in our patient where a preoperative diagnosis of appendicular TB could not be made. In most cases diagnosis is made after histopathologic examination. Demonstration of mycobacterium tuberculosis in the peritoneal fluid or ascetic fluid have been proposed in the past.^[7] Examination of biopsy specimens is another option, as we did in our patient. Biopsy specimens should be sent for microbiology evaluation (including acid fast smear, mycobacterial culture and/or PCR) as well as histopathology evaluation. The sensitivity of AFB smear and mycobacterial culture for biopsy specimens is less than 50%.^[8] PCR is not only more sensitive and specific than AFB smear or mycobacterial culture, the results are available sooner as well. Additionally, the utility of PCR varies depending on the tissue type. It has been shown that the sensitivity and specificity are high for peritoneal fluid and pancreatic and hepatic tissue, but intestinal tissue may be associated with false-positive PCR results. In a study which included 43 liver biopsies with granulomas, PCR had sensitivity and specificity of 53 and 96%, respectively. Similarly, histologic evidence of caseating granulomas has shown a median sensitivity of 68% among hepatic TB case series.^[10]

CONCLUSION

Preoperative diagnosis of appendicular TB is difficult because of the non-specific symptoms. In most cases, patients present as appendicitis and postoperative biopsy study confirms the diagnosis. However, it should also be kept in mind that

preoperative diagnosis does not alter the management of these patients as appendectomy and postoperative anti-TB treatment is advised for these patients.

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