

# Unusual Presentation of Abdominal Koch- Cold Abscess

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## ABSTRACT

**Introduction:** A cold abscess is an abscess that commonly accompanies tuberculosis. It develops so slowly that there is little inflammation and it becomes painful only when there is pressure on the surrounding area.

**Case report:** A 16 year-old girl presented to outpatient department of surgery, with a pain in abdomen, which was moderate, periumbilical radiating all over the abdomen and was increasing gradually for the last four days. Clinical and histopathological findings suggested isolated tubercular cold abscess in peritoneal cavity.

**Conclusion:** This type of abscess may appear anywhere, but it is most commonly found on the neck, spine, hips, lymph nodes, or in the genital region. Cold abscess in abdomen is very rare and high index of clinical suspicion is required for diagnosis.

**Keywords:** Abdominal koch, Cold abscess, TB lymphadenopathy, Serum ADA, Tuberculosis

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## INTRODUCTION

The common organs involved in tuberculosis are lungs, kidneys, bones and gastrointestinal tract.<sup>1,2</sup> Reports do mention tuberculous abscesses at a

site distant from the lung primary without communication.<sup>3</sup> There are only limited case reports of isolated tubercular cold abscess in peritoneal cavity even though tuberculosis is a rampant in developing countries like India. With the rapid spread of acquired immune deficiency syndrome (AIDS) it was reported in the developed nations as well. The varied manifestations seen in tuberculosis are because of the difference in the number and virulence of bacilli, the routes of infection and the host's immune status.

## CASE REPORT

A 16 year-old girl presented to Outpatient Department of General Surgery, Rajiv Gandhi Medical College, Thane, India with pain in abdomen. Pain was moderate, periumbilical radiating all over the abdomen and was increasing gradually for the last four days. There were no other symptoms and the patient did not have any other past medical history suggestive of tuberculosis. There was no history of tuberculosis in family or surrounding.

Physical examination revealed tachycardia, tachypnoea and tenderness in the periumbilical abdomen. There was no associated lymphadenopathy. Systemic examination revealed averagely build and nourished status with no other significant findings suggestive of tuberculosis. The Hb was 9.9 gm%; WBC-9270/uL; PLT-133000/uL. Chest and abdominal radiograph, blood chemistry including human immune deficiency virus (HIV) test did not reveal any significant abnormality. Ultrasonography scans examination revealed moderate free fluid in abdomen without any internal echo. USG guided tap revealed frank pus. Pus was not foul smelling and whitish brown in color. Pus was sent for AFB and routine bacterial culture and sensitivity. Patient was prepared for laparotomy under general anesthesia. Exploratory laparotomy was

performed under general anesthesia and there was evidence of frank pus, non-foul smelling measuring nearly 1.5 liters. Other organs like stomach, small intestines, pancreas, large bowel and rectum were also normal. After draining the pus a thorough peritoneal wash was given. There was presence of enlarged lymph nodes, nearly 2 X 2 cm in dimensions in paracaval, mesenteric and periappendicular region. From one of these mesenteric nodes, abscess was found to be trickling. The node was opened and the pus was evacuated completely. The cavity so formed was thoroughly scooped and edges were taken for biopsy. Peri-appendicular node was also biopsied. Appendix was long and turgid. So decision was taken to perform appendectomy (Figure-1,2). The peritoneal cavity was closed after securing drain.

*In the postoperative course*, patient was kept nil per oral for two days till the bowel sounds started appearing. Abdominal drain was removed on fourth day of laparotomy. Patient was started on CAT I anti tuberculosis regime. This regime includes 4 drugs AKT (INH, Rifampicin, Ethambutol and Pyrazinamide) for initial 2 months followed by 2 drugs AKT (INH and Rifampicin) for next four months. She was discharged after a week of surgery and was advised for high protein diet and follow up after a fortnight.



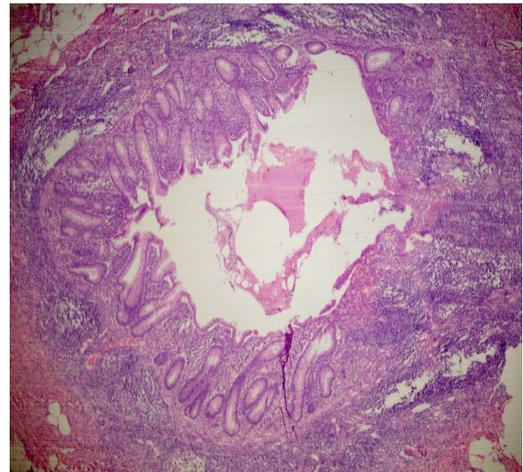
**Figure-1:** Enlarged mesenteric node



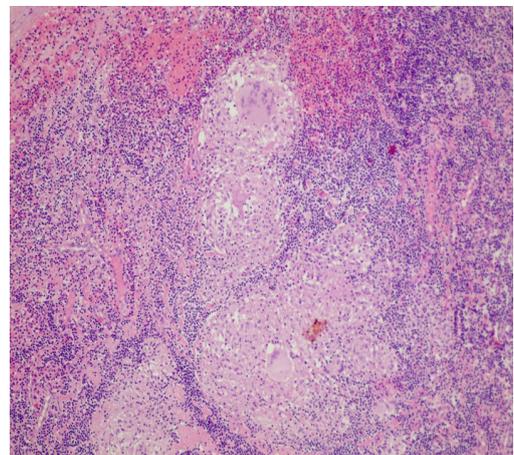
**Figure-2:** Enlarged –burst mesenteric node

## HISTOPATHOLOGY

Revealed tuberculosis in all the samples. Section shows (figures-3,4) surface mucosal ulceration, haemorrhage, necrosis, dense lymphohistiocytic infiltrate in the lumen. The lamina propria shows lymphoid follicles surrounded by lymphoplasmacytic infiltrate. There is fatty permeation of muscularis layer. Serosa is congested and show exudate containing epithelioid histiocytes, lymphocytes and necrosis.



**Figure-3:** Tuberculous Appendicitis



**Figure-4:** Tuberculous mesenteric lymphadenopathy

## DISCUSSION

Tuberculous infection of the peritoneum is infrequent in the developed nations but not in developing countries with a high prevalence of TB like India. It is commonly seen in individuals less than 40 years of age with the slight female predominance. Individuals with other systemic diseases like HIV infection, cirrhosis, diabetes,

malignancy, and those receiving continuous ambulatory peritoneal dialysis are at high risk for tuberculous peritonitis.<sup>4-7</sup> Low socioeconomic status is a major contributing factor. Pathogenesis usually involves peritoneal infection via blood born route, spread or direct extension from an intestine or pelvic organ. Both visceral and parietal peritoneal layers are affected with the formation of multiple tuberculous nodules and ascites. The clinical presentations that of a slowly progressive abdominal swelling from ascites and abdominal pain. Constitutional symptoms of fever and night sweats maybe present. Small-bowel obstruction can occur due to adhesions. Diffuse abdominal tenderness, doughy abdomen, hepatomegaly, and ascites maybe noted on physical examination. Tuberculin skin tests are positive in two-thirds of cases. Diagnosis is often delayed due to nonspecific symptoms and physical findings.<sup>5-7</sup> CT features of peritoneal TB include peritoneal thickening, ascites with fine septations, and omental caking. Ultrasonography is helpful in appreciating the loculations and stranding in ascitic fluid.<sup>8-9</sup> Ultrasonography or CT-guided aspiration followed by cytological examination usually reveals tuberculous granulomas with areas of caseous necrosis. *Ziehl-Neelsen* (Z-N) staining or culture of the aspirate may also help in confirming the diagnosis.<sup>21</sup> Analysis of ascitic fluid often shows lymphocytic predominance with a serum-to-ascites albumin gradient of 1.1 g/dL. The reported sensitivity of adenosine deaminase activity of tuberculous ascitic fluid varies.<sup>10-11</sup> In non cirrhotic patients, adenosine deaminase activity (ADA) of >33 U/L in ascitic fluid is shown to have a sensitivity of 97% and specificity of 100% in TB peritonitis.<sup>11,13</sup>

The yield of *Mycobacterium tuberculosis* on smear and culture of peritoneal fluid is low and larger amount of fluid on centrifugation is required to increase the yield. In HIV patients with tuberculous peritonitis, ADA levels may be low. A high interferon level has been reported in TB peritonitis but not recommended for routine evaluation because of its cost.<sup>14</sup> The smear and culture of ascitic fluid have low diagnostic yield. Hence to get a tissue diagnosis, peritoneal biopsy should be done via laparoscopy or laparotomy to minimize any possible diagnostic delay.

Thickened peritoneum, studding of the peritoneum with multiple tubercles, and adhesions are often seen on laparoscopy or laparotomy. Biopsy of these tubercles shows granulomatous changes.<sup>15-18</sup> PCR testing of the biopsy tissue and culture allow rapid diagnosis of tuberculous peritonitis.<sup>19</sup> Microbiological confirmation and/or histological appearance of granulomas, with or without caseation, establish the diagnosis. Individuals with underlying liver disease, HIV, malignancy, or other risk factors usually have higher mortality.<sup>5,10,15</sup> The recommended treatment for gastrointestinal, hepatic, and pancreatic tuberculosis is conventional anti-tuberculous therapy for a minimum of 6 months.<sup>20-22</sup> Addition of corticosteroids is controversial. Complications of abdominal TB depend on the site of involvement. They include ulcer, perforation, adhesion, obstruction, bleeding, fistulae formation, and stenosis. Patients may require surgical therapy, based on clinical presentations, to relieve obstruction or repair perforations/strictures.

## CONCLUSION

Signs and symptoms of abdominal TB are nonspecific. High index of suspicion is required in the detection of abdominal – peritoneal cold abscess. Delay in diagnosis often result in an increase in complications including mortality. Detailed history of the illness, clinical examination, hematology and radiography including ultrasonography helps in the diagnosis. USG guided tapping helps to the further strengthen the diagnosis. Laparoscopy and laparotomy helps in thorough wash and tissue biopsy for diagnosis. Timely diagnosis and treatment can minimize morbidity and mortality.

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