CASE REPORT

AN EMERGENCY CASE OF TUBERCULOUS ILEAL PERFORATION

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ABSTRACT: WHO in 1993 declared TB as a global emergency and each year about 8.8¹ million people worldwide are estimated to develop TB, of these 95% occurs in developing countries. India accounts for nearly one fifth¹ of the global TB burden according to WHO report 2009. Intestinal and peritoneal TB is the sixth ² most common site of extra pulmonary TB. The most common form of peritoneal TB is ascitic, which occurs in about 97% of cases of peritoneal TB. The remaining 3% of cases have a plastic or fibro adhesive type of TB. Similarly intestinal tuberculosis present as ulcerative presentation in 60% of the cases. In this case report this young female patient presented as an emergency with ileal perforation which during laparotomy and post operatively by histopathological examination proved to be tuberculosis peritonitis with a rare complication of ileal perforation.

KEYWORDS: Peritoneal Tuberculosis, Intestinal Tuberculosis, Caseating Granuloma, Capsule Endoscopy, Stricture, Tuberculin Test.

CASE REPORT: A 17 year old female patient from Ayanavaram reported to the hospital with severe abdominal pain and with low grade fever on & off. On elaboration of History, patient had been suffering from the abdominal pain for the past 2 months and on & off fever, for the past 3 months. She had lost weight and had lost appetite. She had been visiting various hospitals but with no improvement in symptoms. Her abdominal pain grew worse day by day. On examination, the girl was thin built, anemic not jaundiced. PR-102/min, BP -80/50 mm of hg. On examination of the abdomen, patient had tenderness all over the abdomen and guarding and rigidity was more in the hypogastric and right iliac fossa region. Patient was immediately stabilized and subjected to CT Abdomen. CT Abdomen showed evidence of small perforation in a pelvic ileal loop suggestive of ileal and peritoneal tuberculosis.

After stabilization of the patient, she underwent emergency laparotomy. On opening the abdomen, omentum was studded with tubercles, thickened and rolled up. Intestines were adherent to each other and could not be separated. After careful finger dissection, ileal perforation of size 0.25cm X .5 cm, 3 cm away from ileo-caecal junction was identified and there was no soiling of the abdomen and as a lifesaving emergency procedure, primary closure was done as the intestines were so friable and could not withstand any other procedure. Omentum and nodes were taken for biopsy Drain was kept and abdomen closed in layers.

Patient was treated with higher antibiotics, parenteral nutrition. Once HPE report confirmed tuberculosis, patient was started with anti-tuberculosis regimen. On 6th day she developed fecal discharge in drain, which was treated conservatively and by 8 weeks the discharge reduced and by 10 weeks the patient became absolutely normal. Patient was discharged and she is continuing anti tubercular treatment and good nutritive diet.

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128 Slice CT – Abdomen

128 Slice helical CT study of the abdomen was done with oral and IV contrast.

Minimal ascitis is visualized.

Diffuse nodular thickening of omentum and mesentery is visualized.

Diffuse thickening of ileal loops is visualized. Evidence of small perforation is visualized in a pelvic ileal loop. Free air pockets are visualized in the free fluid in lower abdomen.

Thickening of terminal ileum is visualized.

Cecum and appendix show no significant abnormality.

Multiple minimally enlarged mesenteric and retroperitoneal lymphnodes are visualized. (7mm to 15mm).

Liver appears normal with no focal parenchymal lesions identified. IHBR and CBD appear normal. Portal vein and Hepatic veins appear normal.

Gall bladder appears normal. No evidence of radiodense calculi visualized.

Pancreas appears normal in size and morphology. No significant ductal dilatation / calcification seen.

Spleen appears normal in size. No focal lesions visualized.

Both kidneys appear normal with no evidence of calculi / hydronephrosis. Normal excretion of IV contrast seen. Ureters appear normal.

Adrenal glands appear normal bilaterally.

Urinary bladder distended and appears normal.

Uterus and ovaries appear normal for the age.

IVC, portal vein and the superior mesenteric vessels appear normal.

No bony destruction seen.

Impression:

- Minimal ascitis.
 - Diffuse nodular thickening of omentum and mesentery.
 - Diffuse thickening of ileal loops.
 - Evidence of small perforation in a pelvic ileal loop. Free air pockets are visualized in the free fluid in lower abdomen.
 - Multiple minimally enlarged mesenteric and retroperitoneal lymphnodes.
- Suggestive of ileal and peritoneal tuberculosis – please correlate with clinical and lab parameters.

HISTOPATHOLOGY REPORT

Clinical diagnosis: ? abdominal tuberculosis bowel adherent.

Sample received: Omentum with nodes for HPE

Macroscopic appearance:

A] A brownish soft tissue fragment measuring 3x2x1cms received. The external surface shows small tubercles. Cut surface shows friable appearance. Partial sampling done.

B] A brownish soft tissue fragment measuring 3x2x1cms received. The external surface shows small tubercles. Cut surface shows friable appearance. Partial sampling done.

C] A brownish soft tissue fragment measuring 1x1cms received. The external surface shows small tubercles. Cut surface shows friable appearance. Partial sampling done.

Microscopic appearance:

A], B] & C] Multiple sections show fibro fatty tissue with large areas of caseation, necrosis, multiple epithelioid granulomas and langhan's giant cells.

Impression:

The features are consistent with Tuberculous peritonitis.

"End of the report"

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INTRODUCTION: Tuberculosis has existed in India since the earliest days. In 1500 BC, the Rigveda described the illness as Rajayaksma, "king of diseases" Tuberculosis is an infectious disease and in human beings caused by Mycobacterium tuberculosis (MTB) ³ other mycobacteria, namely M.Bovis and M africanum are rarely implicated in human beings. Today India accounts for 21% of all tuberculosis cases in the world, a figure that is likely to increase as India's population grows and the HIV epidemic progresses.

DISCUSSION: The disease primarily affects lungs and cause pulmonary tuberculosis. But it can cause extra pulmonary tuberculosis by affecting the intestine, meninges bones and joints, lymph glands, skin and other tissues of the body. The disease is usually chronic with varying clinical manifestations. Reservoir and source of infection: The pulmonary tuberculosis case with sputum smears positive acts as reservoir and source of infection. India harbors a large reserve of tuberculosis as indicated that every year we detect 1 million sputum positive cases. Mode of Transmission: It is lung to lung transmission. When a sputum smear positive case coughs, sneezes and laughs, the bacilli are sprayed and spread.

Modes of spread of abdominal tuberculosis: By ingestion of food contaminated with tubercle bacilli causing primarily intestinal tuberculosis, ingestion of sputum containing tuberculosis bacteria from primary pulmonary focus causing secondary intestinal tuberculosis. It also spreads by hematogenous spread from tuberculosis of lungs and from neck lymph nodes through lymphatics and from fallopian tubes through retrograde spread to peritoneum (10%).

Pathogenesis of tuberculosis of small intestines: When a patient with pulmonary tuberculosis swallows infected sputum, the organism colonizes in the lymphatics of the terminal ileum, causing transverse ulcers ⁴ with typical undermined edges. The serosa is usually studded with tubercles. Histology shows caseating granuloma with giant cells. This pathological entity, referred to as the ulcerative type, denotes a severe form of the disease in which the virulence of the organism outstrips the resistance of the host. The other variety called the hyperplastic type, occurs when host resistance is stronger than the virulence of the organism. It is caused by the drinking of infected milk. There is a marked inflammatory reaction causing hyperplasia and thickening of the terminal ileum because of the abundance of lymphoid follicles, thus causing narrowing of the lumen and obstruction. In both types there may be marked mesenteric lymphadenopathy. The small intestine shows areas of stricture ⁴ and fibrosis most pronounced at the terminal ileum, As a result, there is shortening of the bowel with the caecum being pulled up into a subhepatic position.

Classification and types of abdominal tuberculosis.

1) Intestinal.

- a) Ileocaecal region
 - 1. Ulcerative – 60%
 - 2. Hyperplastic
 - 3. Ulcero-hyperplastic
- b) Ileal region – stricture type

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- 2) Peritoneal tuberculosis.
 - a) Acute
 - b) Chronic
 1. Ascitic Type
 2. Encysted type
 3. Plastic (fibrous/ adhesive type)
 4. Purulent type
- 3) Tuberculosis of mesentery and its lymph nodes
- 4) Ano-rectal-sigmoidal-present as fistula, fissure, abscess, mass
- 5) Involvement of liver, spleen and other organs as a part of miliary tuberculosis.
- 6) Tuberculosis of the omentum
- 7) Rare types – Esophageal – 0.2% of abdominal tuberculosis
Gastro duodenal – 1% of abdominal tuberculosis.

Intestinal Tuberculosis: The most common site is ileocaecal region due to the presence of payer's patches and stasis of luminal contents favored by ileocaecal valve. It occurs as ulcerative and hyperplastic forms. Ulcers usually occur as circumferential. Transverse ones are often multiple girdle ulcers which lead to stricture formation called as napkin ring stricture.

Hyperplastic form is less virulent and can lead to mass in right iliac fossa which can cause sub acute intestinal obstruction.

Peritoneal Tuberculosis: This is usually post primary. It usually develops from diseased mesenteric lymph nodes. It leads to enormous thickening of the parietal peritoneum with multiple tiny yellowish tubercles and it leads to dense adhesions in peritoneum and omentum with small bowel inside looking like "Abdominal Cocoon". It can be of acute or chronic presentation. chronic presentation can be in ascitic form, encysted form, plastic form or purulent form.

Tuberculosis mesenteric lymphadenitis: Usually occurs from infection in Payer's Patches. Massive enlargement of mesenteric lymph nodes is called as tabes mesenterica and in some cases it can form mesenteric cyst called as pseudo-mesenteric cyst.

Ano-Recto-Sigmoidal tuberculosis mimics carcinoma rectum and fistulas are painful and are characteristically not indurated.

Tuberculosis of omentum occurs as a part of abdominal TB where omentum is rolled up and thickened.

Clinical features: Intestinal tuberculosis should be suspected in any patient from an endemic area who presents with weight loss, malaise, evening fever, cough, alternating constipation and diarrhoea and intermittent abdominal pain with distension. The abdomen has a doughy feel and mass may be found in the right iliac fossa. When it is an emergency the patient presents with features of distal small bowel obstruction that is abdominal pain, distension, bilious and feculent vomiting or as peritonitis from a perforated tuberculosis ulcer in the small bowel.

Clinical features Chart ⁵	
Abdominal distension	82%
Fever	74%

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Weight loss	62%
Abdominal pain	58%
Diarrhea	16%
Abdominal Tenderness	75%
Mild anemia	59%
Positive Tuberculin test	71%
Abnormal chest radiograph	48%

Investigations: There will be raised inflammatory markers, anemia and positive sputum culture. Chest X ray will show pulmonary infiltration and opacity. Plain X ray abdomen is of value in intestinal obstruction and in perforation where gas under diaphragm is seen. Ultrasound abdomen may show localized areas of ascites, caecal thickening and nodal status.

Capsule endoscopy with PCR assay of endoscopically biopsied tissue or of Ascitic fluid. DNA-PCR can detect 1-2 organisms or 8 fg of mycobacterial DNA.

Determination of adenosine deaminase (ADA) activity is now recognized as a useful investigation in the diagnosis of peritoneal TB. It has 98% specificity.

CT Scan in abdominal tuberculosis: It is done with oral contrast showing adhesions, mesenteric thickening and nodules thickened bowel wall, thickened peritoneum, stricture, dilatation of bowel, features of obstruction.

Treatment: Patients should ideally be under the combined care of a physician and surgeon. Vigorous supportive and medical treatment is mandatory.

Medical Treatment: WHO now recommends anti tuberculous drugs for 6 months. Uncomplicated cases-4 drugs for 2 months and 2 drugs for 4 months. Complicated cases – 4 drugs for 2 months and 2 drugs for 7 months. But patients may need one year treatment. First line drugs are isoniazid – 5 mg/KG, Rifampicin-10 mgm/kg, ethambutol – 15 mg/kg, Pyrazinamide-25 mg/kg. Second line drugs are Amikacin, Kanamycin, PAS. Follow up and prognosis is monitored by regular weight check to see for gain in weight. Improvement in appetite, reduction of abdominal pain and distension, normal bowel habits and USG abdomen shows improvement in sonological features.

Surgical treatment: On completion of medical treatment, symptomatic strictures are treated by stricturoplasty or limited ileocolic resection with anastomosis between the terminal ileum and ascending colon. The emergency patient presents a great challenge. Such a patient is usually from a poor socio economic back ground, hence the late presentation of acute, distal small bowel obstruction or rarely perforation. The patient is extremely ill from dehydration, malnutrition, anemia and probably active pulmonary tuberculosis. Vigorous resuscitation should precede the operation. At laparotomy, the minimum lifesaving procedure is carried out such as side to side ileo-transverse anastomosis is for a terminal ileal stricture. Perforation is treated by resection and as a first stage, resection and exteriorization is done followed by restoration of bowel continuity as a second stage. Later on, after a full course of anti-tuberculosis chemo therapy and improvement in nutritional status.

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CONCLUSION: In this patient, on laparotomy, we were unsure as the intestines were so plastered with one other with multiple tiny peritoneal tubercles clinically indistinguishable from tumor secondaries⁶. But luckily, as it was tuberculosis abdomen with anti-tubercular treatment, we could save her and make her eat normal diet. Hence, more emphasis and assurance should come from our medical fraternity to educate, prevent and treat tuberculosis at an early stage and make the disease vanish from earth.

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