Abdominal Tuberculosis - An Enigma

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Introduction

Abdominal tuberculosis (TB) is a major health problem in developing countries, more so with upsurge of HIV infection. HIV and TB contemporarily called dual epidemics, afflict at least 4 million individuals worldwide [1]. Underdevelopment, immunosuppression and immigration are major factors operating in the prevalence and / or resurgence of TB in the world, not to mention inadequate detection and treatment.

Case Report

A 25 year old civilian lady underwent oophorectomy for ? ovarian cyst (right) at a District Hospital in North East on 15th November 2000 under a self administered spinal anaesthesia by the treating gynaecologist. The operation notes revealed the gut to be adherent to the tubo-ovarian mass (right). Adhesiolysis was attempted but as the effects of the spinal anaesthesia wore off, a hurried closure was done. Proper haemostasis could not be ensured. The patient, however, developed features of subacute intestinal obstruction (SAIO) on the 5th postoperative day. As the patient did not improve with conservative management she was brought to the nearby Military Hospital on the 6th postoperative day for surgical consultation. On interrogation, patient revealed having received treatment, for abdominal TB 8 years ago, for one year's duration, however, no documental evidence was available. General examination revealed the vital parameters to be stable. However, per-abdominally there was moderate ascites, tenderness around infra-umbilical and right Iliac fossa regions. No guarding / rigidity was present. Bowel sounds were sluggish. An infra-umbilical midline scar with silk sutures intact was seen. Per vaginal (PV) and per-rectal (PR) examinations were not contributory. Laboratory investigations were within normal limits. Chest X-ray was normal. Plain X-ray abdomen showed multiple air and fluid levels in the jejunal loops. An initial trial of conservative management with soap and water enema seemed to produce a subjective improvement but no objective change. On the 7th postoperative day the patient had severe abdominal discomfort along with bilious aspirate, and since the USG revealed grossly distended small gut loops with minimal gut motility, an exploratory laparotomy after resuscitation with 3 litres crystalloid was carried out. The preoperative findings were: grossly distended jejunal and ileal loops, multiple fibrinous and fibrous adhesions, solitary ileal stricture with luminal patency, caecum and beyond collapsed, multiple TB nodules in the mesentery, gut viability

satisfactory and clots in pelvis from previous surgery. Pre-operatively the gut was decompressed and 2500 ml (approximately) of aspirate was released, adhesiolysis and gut continuity was established, the gut opening was closed and clots in the pelvis were removed and haemostasis ensured. Peritoneal nodule was biopsied, which later confirmed TB and peritoneal wash with Dextran 40, and diffuse ooze controlled with Hemlock. Mass closure after the placement of tube drains in both sides of pelvis was done. (Approximate blood loss was 1200 ml). Peroperatively she developed severe hypotension, which persisted in the immediate postoperative period and oliguria followed. She was managed with dopamine infusion, mannitol, 5 units of fresh blood, 3 litres of crystalloid and 1 unit Haemacel with constant hemodynamic monitoring i.e. ECG and NIBP and pulse oximetry. The urinary output gradually improved on the 3rd postoperative day following which, she passed stools with a round worm on the 4th postoperative day. Thereafter her recovery was uneventful and she was put on oral antituberculous therapy (ATT) (EHRZ). Follow up after 2 months was uneventful.

Discussion

Abdominal Koch's is primary in two-third of cases. Less often a lesion elsewhere in the body may be detected [2]. The mycobacterium may reach the abdomen by swallowed infected sputum, contiguous spread from pelvic organs or more likely a haematogenous spread from a pulmonary focus.

Since 2%-5% of the 3-4 million cases of Koch's have abdominal TB, the prevalence thus would be 100-200 thousand cases in India [3]. Its usual occurrence is in young adults with a peak incidence in the 3rd-4th decade of life. Females of childbearing age are commonly affected. Clinical features depend upon the site involved and its morphological type (ulcerative, constrictive/stricturing, hyperplastic and their combinations). Genital TB manifesting as oligomenorrhoea, amenorrhoea, infertility, tubo-ovarian mass, as was in this case, may present in a third of female patients [4].

Complications : TB is etiological for 50% of all intestinal obstructions and is the commonest cause of obstruction in females [5]. In India, 20% of all gastrointestinal perforations (excluding appendicular) are tuberculous in origin. It is also an important cause of malabsorption in India, only second to tropical sprue.

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Ulcers, blind loops due to strictures/adhesions, lymphatic involvement and intestinal fistulas contribute to its development [4]. Diagnosis is difficult and most tests are nonspecific. In endemic areas, accuracy of clinical diagnosis is less than 50%. DNA polymerase chain reaction is now being increasingly applied for diagnosis but is sparsely available. Adenosine deaminase activity in peritoneal fluid is increased and at cut off values above 33 units/l has reported 100% sensitivity, 97% specificity and overall accuracy of 98% [6].

Barium studies continue to be the main stay of radiological diagnosis despite being positive in two third of patients. Barium enema is the investigation of choice for ileocaecal disease. For small gut lesions, small bowel enema gives better results than barium meal follow through. USG/CT/Endoscopy/Laparoscopy may be useful in the diagnosis more so in the peritoneal and nodal forms of the disease.

If the investigations are equivocal, laparotomy may be diagnostic in about a third of the cases. Peritoneum and omentum are thickened, hyperemic with loss of usual shiny lustre. They are studded with multiple yellowish white tubercles, 2-5 mm in diameter. Unlike malignant nodules, TB nodules are uniform in size and do not umbilicate. ATT for 12-18 months is the mainstay of therapy. Surgery is essentially limited to relieving its complications and occasionally used for a diagnostic purpose preferably under ATT cover and adequate nutritional support. Resection anastomosis, limited colectomies, adhesiolysis with an aim to maintain maximum functional bowel, closure of perforations, excision of residual mass, and stenting of fistulas may be required. By-pass procedures are to be avoided as far as possible because of associated blind loops, malabsorption and recurrent obstruction [7].

Mortality in emergency surgery is 20%-25% because of toxemia, hypoproteinemia, uncorrected anaemia, pulmonary focus and aberration of hepatic function [3].

Anaesthetic aspects of intestinal obstruction: In patients with moderate dehydration the rough fluid loss of 6% of total body fluids (TBF) and in severe dehydration upto 10% of TBF is estimated for a preoperative rehydration. In cases of high obstruction as is in

this case, fluid which is normally secreted by the proximal small gut in the normal course is reabsorbed lower down, gets impaired and thus worsens the fluid imbalance in the immediate postoperative period [8].

As these patients are in a catabolic phase and since the immediate postoperative nutritional supplies are met through IV fluids, it does not meet the increased calorie demand, which is approximately 30% more, over and above the basal need of 30-35 Kcal/Kg/day, which may lead to low osmolar load upon the kidneys [9].

The stress of the disease and surgery also increase vasopressin release, which encourages antidiuresis and thus oliguria. Thus, in the intra and postoperative period besides meeting the requirement of adequate fluid replacement, if such a patient is given an osmotic diuretic such as 5% mannitol in addition to a renal dose of dopamine infusion, so as to maintain a minimal urine output of 1 ml/min, as was done in this case, it would help in protecting the renal functions too.

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