

Case Report

Making Use of High Index of Suspicion in Diagnosing Intra-abdominal Abscess

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Abstract

More than 80% of intra-abdominal abscesses occur in the postoperative period and the majority after pancreatico-biliary or colorectal surgery. Over 30% of abscesses are associated with clear evidence of anastomotic leak. There are no reliable signs or symptoms of intra-abdominal abscess. Huge abscesses containing more than 1 L of pus may occur without any significant physical finding. This case report describes a patient with generalized abdomen pain and abdominal distension after 2 weeks of headache and fever. After undergoing laparotomy for dealing with perforated typhoid ulcer of the ileum and 2nd operation for bowel leakage, the patient health two weeks later was fair, but unexplained tiredness while leukocytosis was the only finding which encouraged 3rd operation during which intraabdominal abscesses were found and Corrugated drain was left. We may conclude that unexplained postoperative leukocytosis indicate hidden sepsis. Placing Intraabdominal corrugated drain may be invaluable in preventing recollection.

Keywords: Interloop abscess, intra-abdominal abscess, perforated typhoid

INTRODUCTION

More than 80% of intra-abdominal abscesses occur in the postoperative period and the majority after pancreaticobiliary or colorectal surgery.^[1] Over 30% of abscesses are associated with clear evidence of anastomotic leak.^[1] There are no reliable signs or symptoms of intra-abdominal abscess. Huge abscesses containing more than 1 L of pus may occur without any significant physical finding.^[2] Fever may be absent in the very young, elderly, malnourished, and immunocompromised patients.

Blood cultures are positive in 80% of patients in the 2nd week.^[3] The serological diagnosis relies on finding of a rising titer of antibodies 10–14 days apart.

Blood culture is the diagnostic test of choice while stool culture is useful only after the 1st week.^[4] Failure of fever to settle, persistently positive leukocytosis, and low serum sodium concentration are the most definite indications of abdominal abscess.^[5] Computed tomography (CT) scan is the most useful radiological study in the diagnosis of intra-abdominal abscess. Combined with ultrasound, CT can diagnose accurately >90% of the cases.^[2]

In the face of antibiotic use, the presence of fever or leukocytosis with a band count higher than 3%, or both is highly indicative of persistent sepsis. The overall mortality of serious intra-abdominal abscesses is about 30%. Deaths are related to the severity of the underlying pathology, delay in diagnosis, and multiple organ failure and incomplete drainage^[3]

CASE REPORT

A 17-year-old man, (the patient consent form has been obtained), was admitted to the emergency department in Al Hilla Teaching Hospital, Babylon, Iraq, complaining of generalized abdominal pain and distension with high fever. The patient suffered from headache and high fever associated with repeated vomiting two weeks ago. On examination, the patient was found to be toxic, pale, dehydrated, and tachypneic, with a hypotensive blood pressure of 90/60 mmHg and a pulse rate of 130/min. The abdomen was moderately distended, did

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not move with respiration, was tender, and was rigid all over. The bowel sounds were negative.

The hemoglobin level was 9 g/dl and the white blood cell count was 15,000 cells/mm³. A blood sample was taken for cross-matching and for culture/sensitivity. Widal reaction testing revealed increasing *Salmonella typhi* antibody titers and plain abdominal X-ray showed multiple fluid levels inside bowel loops.

Starting resuscitation by infusion of 2 pints of ringer lactate then, metronidazole 500mg and intravenous injection of 1 gram cephalixin were given preoperatively. Abdominal exploration revealed edematous, markedly inflamed peritoneum. The peritoneal cavity was filled with feculent fluid emerging through a perforated ileal ulcer. The ulcer was situated 20 cm proximal to the ileocecal valve, along the longitudinal axis of the bowel, 1 cm in diameter, and associated with enlarged Peyer's patches. There were too much fibrinous adhesions between the bowel loops and the mesenteric nodes were enlarged. A sample of the peritoneal contents was taken for Gram stain and culture/sensitivity.

The peritoneal contents were removed and the perforated ileal ulcer edges were debrided and refreshed, after that the ileum has been sutured and peritoneal toilet has been performed using 1% tetracycline in normal saline solution. Peritoneal cavity was drained before laparotomy wound closure.

On the 7th postoperative day, the laparotomy wound was noticed to be disrupted through all the abdominal wall layers with infected fetid discharge, i.e., wound dehiscence.

Through re-laparotomy, peritoneum was opened, and the operative findings were disruption of The sutures of the ileum, in addition to interloop and intermesenteric abscesses, and wound dehiscence. The intermesenteric abscesses were removed and then peritoneal toilet was performed followed by debridement, refreshment of the anastomosis, and suturing. All abdominal wall layers were approximated by through-and-through suturing by braided nylon each passed through a plastic tube collar.

The bacteriological results confirmed the clinical diagnosis of perforated typhoid ulcer. The patient spent a smooth postoperative course while he was receiving the following regimen: chloramphenicol 1 g daily which was continued for 2 weeks since the day of admission, metronidazole 500 mg 8-hourly infusion, gentamycin 80 mg 8-hourly intravenously, glucose saline solution 0.45% 4 hourly, and 2 pints of cross-matched blood were transfused for correction of anemia.

DISCUSSION

Drains should be kept for at least 10 days^[6] as suppuration occurs late. The patient presented with profound toxemia accompanying acute abdomen. The provisional diagnosis of a perforated typhoid ulcer was considered relying on a history of fever and headache for 2 weeks preceding the presentation with toxicity accompanying an acute abdomen in an area affected

with endemic typhoid fever. The diagnosis was supported by the intraoperative findings of a perforated ileal ulcer, along the longitudinal axis of the small bowel, in addition to necrotic Peyer's patches. The location of the ulcer in the terminal part of the ileum suggested typhoid perforation.^[6] The choice of surgical repair being an isolated perforation was simple suturing.^[7]

Confirmation of typhoid was through identification of *Salmonella typhi* organisms In blood and stool culture in the second week of infection. In addition to *S. typhi*, the culture contained intestinal flora as well. Therefore, aminoglycoside gentamycin and metronidazole were added in addition to chloromycetin as this combination is indicated in cases with florid peritonitis from ileal perforation. The perforated ulcer was excised and sent for histopathological examination which excluded lymphoma and granuloma of any type. The refreshed edges were closed into two layers and the peritoneal contents were removed after bowel adhesiolysis. Following peritoneal toilet using 1% tetracycline solution in normal saline, the laparotomy wound was closed after draining the peritoneal cavity which is indicated when bowel fistula is expected to occur.^[5]

On the 7th postoperative day, wound dehiscence was noticed. Exploring the laparotomy wound, the bowel anastomosis was disrupted and leaking, and multiple interloop abscesses were found, too. The appropriate management in such a case with leaking anastomosis accompanied with intra-abdominal sepsis necessitated exteriorizing the bowel,^[8] i.e., making ileostomy, but because of the unavailability of parenteral nutrition, we found no choice other than resuturing the ileal wound after debridement. The midabdominal abscesses were sucked and fibrinous adhesions were debrided, then, the peritoneal cavity was irrigated with copious amounts of saline solution mixed with tetracycline 1%. We inserted a tube drain. The patient spent a smooth postoperative course.

Three weeks later, the patient was noticed to have a good appetite with no longer signs of sepsis. He was symptom free, except feeling of loss of energy, and abdominal examination showed only mild abdominal distension while his hematological workup was normal except a leukocytosis of 20,000 cells/mm.^[2] The radiological, sonographic, and CT assessments were inconclusive. The fatigability alone could be explained innocently in our patient for he had undergone two laparotomies with major sepsis within a period of 4 weeks but a leukocytosis should be seriously considered. The surgeon must suspect the possible presence of abdominal abscess whenever the clinical context is appropriate: a preceding episode of peritonitis with incomplete clinical resolution and recurring signs of sepsis.^[2] We found multiple intermesenteric interloop abscesses, which were managed by the same way as in the previous laparotomy, but we, this time, inserted two drains, one in each paracolic gutter. We used corrugated drains and did not remove them until the abscess cavity has closed completely around the drain tract.^[8]

Accordingly, the patient continued to receive the appropriate antibiotics until he became symptom free and the leukocyte count returned to normal as available reports suggest that antimicrobial treatment of intra-abdominal abscess can be continued until the patient has a normal leukocyte count and is afebrile. Six years later, the patient health was good. I reported this case of intra-abdominal abscesses which is not uncommon. The diagnosis of the reported case relied on a leukocytosis enforced by a high index of suspicion. I may conclude that using corrugated drains might be of significant role in preventing recurrence which is common in intra-abdominal abscess.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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