

An atypical presentation of multiple intra-abdominal abscesses.

Dr. Salman Waqar (Corresponding Author)

F2 General Surgery, Darlington Memorial Hospital. Email: salmanwaqar@hotmail.com

Dr. Muhammad Zakir

F2 General Medicine, Bishop Auckland General Hospital

Mr. N B Corner

Consultant Vascular Surgeon, Darlington Memorial Hospital

Introduction:

Intra-abdominal abscesses hold a unique place in surgical practice. Diagnosis and localization is difficult and there is often delay in the initiation of appropriate treatment.

The economic impact of delayed management is significant. A better understanding of the patho-physiology with a high index of suspicion should facilitate prompt diagnosis and reduce morbidity and mortality.

Case Report:

A 61-year-old lady was admitted with a two week history of lower abdominal pain with night sweats, fever and vomiting. Her past medical history included hypertension, hypothyroidism and Hodgkin's disease in remission. She was tender in the right iliac fossa with a leucopaenia of 3.4×10^9 /litre (neutrophils 2.9×10^9 /litre). *Salmonella* had been isolated from stool cultures ordered by her G.P and the immediate diagnosis was of severe dehydration due to salmonella enteritis. Response to treatment with fluid/ electrolyte replacement and intra-venous ciprofloxacin was dramatic but she subsequently developed watery diarrhoea, abdominal distension and a low urinary output. Ultrasound scan of the abdomen reported multiple abdominal abscesses in the pelvis, right and left para-colic gutters. A subsequent CT scan confirmed an abscess in the left iliac fossa tracking into the left para-colic space and communicating with a further collection in the left upper quadrant (Figure 1). The left iliac fossa collection was also found to connect into the deep pelvis, where there was a collection in the pouch of Douglas, which in turn tracked around to communicate with a further abscess in the right adnexa. Further smaller collections were noted in the right iliac fossa and right para-colic gutter. No evidence of diverticular disease was found. A CT guided percutaneous drainage of the largest abscess in the left iliac fossa drained 1100 ml of foul-smelling pea-green fluid (Figure 2). Culture of this showed gram-positive cocci and gram-negative rods. A repeat

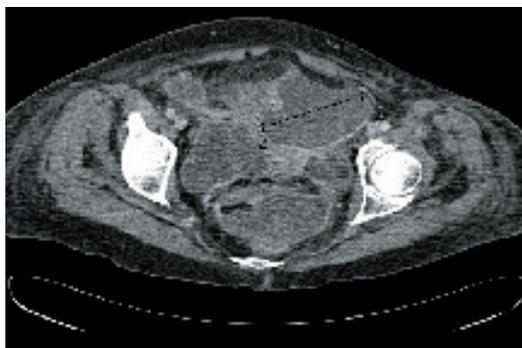


Figure 1: CT Scan showing abscess in the left iliac fossa

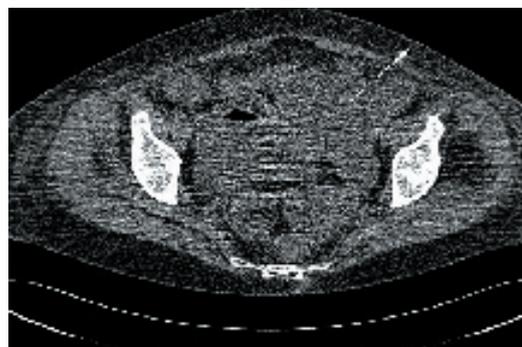


Figure 2: CT guided aspiration of abscess in the left iliac fossa

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CT scan showed that the drained abscess had resolved but the other abscesses were unchanged (Figure 3). In view of her poor response to treatment, it was decided to undertake a laparotomy. At operation her small bowel was seriously involved with multiple abscesses in the pelvis, the left para-colic gutter and around the caecum. The pelvic abscess had eroded through the posterior wall of the uterus. All the abscess cavities were lavaged. A tear at the loop of ileum adherent to the uterus was exteriorised as a double-barrelled ileostomy in the right iliac fossa. Robinson's drains were placed in the pelvis, and in the right and left para-colic gutters. After surgery the patient made a steady recovery. Six months post discharge she has been offered a closure of her ileostomy which she is awaiting.

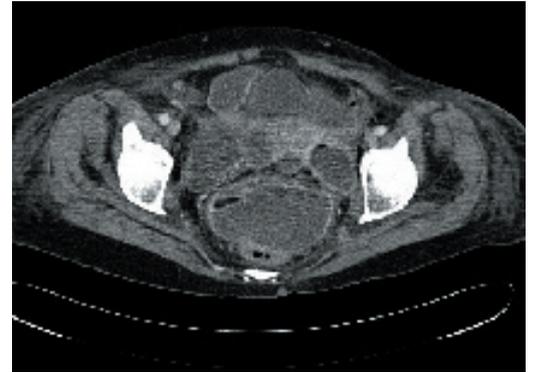


Figure 3: CT Scan showing response to CT guided aspiration.

Intra-abdominal abscesses are localized collections of pus confined in the peritoneal cavity by an inflammatory barrier. They are an important cause of morbidity and are frequently associated with poor prognosis¹.

The most common causes are perforation of a diseased viscus, pancreatitis, mesenteric ischemia, penetrating abdominal trauma, anastomotic leaks and diverticulitis. Commonly isolated organisms are *Escherichia coli* (aerobe) and *Bacteroides fragilis* (anaerobe). Intra-abdominal abscesses are highly variable in their mode of presentation. Patients may develop abdominal pain, spiking fever, prolonged ileus, diarrhoea, focal tenderness or polymicrobial bacteraemia. If the abscesses are deep seated, the only presentation may be fever and persistent gastrointestinal dysfunction. It has been found that elderly patients present more atypically and have a more protracted course of illness than their younger counterparts². Fry et al³ found that the factors associated with fatal outcome are organ failure, lesser sac abscess, positive blood culture, multiple abscesses, age >50 years and sub-hepatic abscesses.

The diagnosis of intra-abdominal abscesses requires a combination of clinical suspicion and investigative workup. Haematological parameters suggesting infection and blood cultures showing polymicrobial bacteraemia are highly indicative. Plain abdominal films showing raised hemi-diaphragm, pleural effusion, atelectasis localized ileus, distended bowel loops, displaced viscera and the absence of psoas shadows indicate further assessment. Ultrasonography is frequently used as the initial screening procedure, however, it is operator dependent

Discussion:

and its efficacy is limited in postoperative patients⁴. CT scans offer the best diagnostic method. The appearance of an air bubble within a fluid collection or a low attenuation extra-luminal mass is diagnostic. MR imaging also has a high diagnostic accuracy in evaluation of acute intraperitoneal abscesses⁵.

Prompt initiation of empirical antibiotic therapy is essential. Many regimens have proven efficacy. A combination of intravenous/oral ciprofloxacin and metronidazole is considered to be more effective than piperacillin/tazobactam and cefuroxime/metronidazole⁶. Ertapenam has been recommended as suitable monotherapy⁷.

Percutaneous CT guided catheter drainage has become the standard treatment for most intra-abdominal abscesses^{8,9}. Gohl et al¹⁰ found success rates in the range of 33% to 100%. Abscesses that are small, singular and easily accessible correlate with higher clinical success¹¹. Abscesses with superficial gas have a greater chance of being drained successfully than do abscesses with deep-trapped gas¹². Lack of improvement within 48-72 hours mandates a repeat CT scan with a view to proceeding to surgery.

Surgical drainage is an option if percutaneous CT guided drainage fails or if the abscesses are not amenable to drainage. The surgeon must use digital exploration to break down all loculations. Irrigation must be complete and drains placed to allow post-operative evacuation of the abscess.

Conclusion: The introduction of CT-guided aspiration for the treatment of intra-abdominal abscesses has led to significant reduction in morbidity and mortality. For multiple, large and deep-seated abscesses, surgery still remains the definitive treatment. In all cases, prompt diagnosis and treatment is necessary for good prognosis.

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