Case Report

Retroperitoneal Abscess with Extensive Necrotizing Fasciitis Masquerading as Appendicular Mass

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Abstract

A case of retroperitoneal abscess (RPA) complicated by necrotizing fasciitis is presented. RPA by virtue of its anatomical location usually has occult and insidious presentation that may be a diagnostic challenge to the clinician but when this is complicated by necrotizing fasciitis, a rapidly progressing fulminant infection ensues. Delay in instituting drainage and aggressive surgical debridement with appropriate antibiotic cover are usually associated with high morbidity and mortality. Our index patient is a 45 year old woman admitted on 2nd November, 2017 for a conservative management of a suspected appendicular mass. The inflammatory process soon progressed rapidly with overlying abdominal skin necrosis and involvement of the ipsilateral thigh. An emergency abdominal exploration revealed a retroperitoneal abscess with extensive necrotic tissues in the right flank spreading to the right thigh. Patient had drainage of abscess, aggressive debridement of the necrotic soft tissue with antibiotic treatment. She had a satisfactory surgical outcome though following a prolonged hospital stay of 22 days.

ABBREVIATIONS

RPA: Retroperitoneal Abscess; NF: Necrotizing Fasciitis; CT: Computerized Tomography; US: Ultrasonography

INTRODUCTION

Retroperitoneal abscess (RPA) is a life-threatening condition that occurs often insidiously with non-specific symptoms [1]. Its atypical presentation with propensity to delayed diagnosis or misdiagnosis is usually associated with high morbidity and mortality. Although rare, when this condition is complicated by necrotizing fasciitis a rapidly progressing fulminant infection ensues [2]. A high index of clinical suspicion, adequate drainage and radical surgical debridement with appropriate antibiotic cover will reduce the relatively high morbidity and mortality associated with this condition. We present a 45 year old woman with retroperitoneal abscess which was complicated by extensive necrotizing fasciitis masquerading as appendicular mass ab initio.

CASE PRESENTATION

A 45 year old woman was admitted with a week history of colicky periumbilical pain which radiated to the right iliac fossa. There was associated malaise, low grade fever, anorexia and two episodes of non-bilious vomiting. There was no history of loin pain, dysuria, weight loss or passage of mucoid or bloody stool. There was no history of diabetes or any other forms of immunosuppression. Examination showed an acutely ill-looking middle aged woman with low grade temperature (37.7°C). All the other vital signs were within normal limits. The cardiovascular, respiratory, and central nervous systems revealed no abnormality.

Abdominal examination revealed only a right iliac fossa (RIF) mass measuring 10cm by 6cm that was firm and tender. The abscess cavity extended proximally to just below the right kidney and distally to the pelvis and over the iliopsoas fascia. Smelling seropurulent collection in the retroperitoneal region.

She subsequently had an emergency abdominal exploration on the fifth day of admission and the findings were a patchy area of skin necrosis over the RIF with extensive soft tissue and fascial necrosis of the external oblique aponeurosis and 1.9 Liters of foul smelling seropurulent collection in the retroperitoneal region. The abscess cavity extended proximally to just below the right kidney and distally to the pelvis and over the iliopsoas fascia.
dissecting downward into the subcutaneous tissue of the upper thigh (Figure 2). There was no violation of the peritoneal cavity.

Drainage of abscess with extensive wound debridement was done and she was transfused with 2 pints of blood after the operation. She also had twice daily wound dressing initially with normal saline and subsequently with the addition of horney. The tissue and aspirate microscopy, culture and sensitivity yielded isolated growth of Proteus Vulgaris and ceftriaxone was changed to ciprofloxacin according to the sensitivity of the organism. The wound improved and was granulating well after two serial bedside debridement’s (Figure 3). However, when there was good clinical improvement, she declined an option of wound cover for financial reasons and subsequently left against medical advice.

DISCUSSION

Retroperitoneal abscess is a life-threatening surgical infection with varied origins and it is often misdiagnosed or suspected late in its clinical course. It can be primary when it is due to haematogenous spread of infection usually from an occult source in the muscle or spine while the secondary types are usually due to infection arising from the structures in the retroperitoneal space. The latter could be wholly contained in the retroperitoneal space like the kidneys, ureters, adrenal glands, pancreas, aorta and inferior vena cava or those that are contiguous with it like the ascending and descending colon and the retroperitoneal part of the duodenum. The bladder uterus and rectum are also located in the pelvic extraperitoneal space and infections involving these structures could also be complicated by RPA. The most common source of infection is from the kidney or renal tract [3]. The majority of these cases have been shown to be associated with immunosuppressive conditions like diabetes mellitus, retroviral disease, malignancy, steroid use, chemotherapy, chronic liver and renal diseases among others. Urological and gastrointestinal procedures may be the predisposing factors in some cases.

The clinical presentations of RPA are insidious and symptoms are often non-specific leading to diagnostic delay or misdiagnosis. Patient may present with variable gastrointestinal complaints and other non-specific constitutional symptoms like abdominal pain, altered bowel habits, anorexia, vomiting, fever, chills, back pain, malaise or frank features of septic shock [4]. There may be extra-abdominal manifestations like referred pain to the hip, thigh or knee [5]. There was the involvement of the ipsilateral thigh in our patient. The fact that the retroperitoneal space is open to the pelvis and thighs inferiorly contrary to the superior boundary that is closed by the diaphragm explains the involvement of the lower extremities. The duration of the symptoms is also variable ranging from few days to months in some cases. The diagnosis was made intraoperatively on the 11th day after the onset of the disease (and 5th day on admission) in our index patient. Crepps et al., in their retrospective review reported an average duration of 12.7 days to establish the definitive diagnosis.

Although very uncommon, RPA may be complicated by necrotizing fasciitis which is rapidly progressive and potentially fatal. Some authors have also reported that primary RPA may simulate an abdominal mass [6,7]. Our index patient initially presented with features simulating appendicular mass and was being managed conservatively. However, the inflammatory process soon progressed rapidly with development of overlying...
abdominal skin necrosis and worsening symptoms. A more serious differential diagnosis should therefore be borne in mind if there is delayed resolution of clinical features.

The differential diagnoses of right iliac fossa mass are protean. However, considering an appendiceal mass first on the list of differentials is not unusual being one of the most common causes of acute abdomen encountered in clinical practice as encapsulated in the aphorism that “common things occur commonly”. This might have accounted for the misdiagnosis coupled with the abdominal ultrasound (US) finding “corroborating” this diagnosis. However, one of the shortcomings of the US is that it is operator dependent and its diagnostic sensitivity in RPA is low compared to computed tomography and magnetic resonance imaging which are not available in our facility.

Computed tomography is the best imaging modality for definitive diagnosis of retroperitoneal abscess with sensitivity ranging between 90 and 100% and it is also useful for therapeutic drainage of abscesses in high risk surgical patients [4,8]. In RPA coexisting with NF, the characteristic findings on CT imaging may include thickening of the fascial planes, fat infiltration, soft-tissue gas, abscess formation and intra-abdominal extension [9]. However, these changes usually signify an advanced and ultimately fatal presentation. A high index of clinical suspicion coupled with imaging technique and early surgical intervention are imperative to improving the prognosis in RPA complicated by necrotizing fasciitis.

The pathogen of this condition may vary depending on the origin of the infection. This may be classified as either type I (polymicrobial) or type II (monomicrobial) with the majority being polymicrobial. Polymicrobial infections with aerobic and anaerobic bacteria were noted commonly in cases of abscess of gastrointestinal origin, and E. coli was the most common pathogen in the review by Huang et al. [10]. Our patient falls into type II because proteus vulgaris was the only isolated organism in the pus and tissue culture. The underlying cause of the RPA in our index patient was not ascertained and so also no predisposing immunosuppressive condition identified.

Retroperitoneal abscess requires early surgical exploration, drainage and appropriate antibiotic coverage for a successful outcome. Small abscesses may be treated by antibiotics alone but if larger than 3 cm, it should be percutaneously or surgically drained [11]. Aggressive surgical debridement is mandatory if complicated by NF but even in advanced presentation it may not be effective and mortality is not an uncommon result [12,13].

CONCLUSION

Our index patient presented with RPA complicated by necrotizing fasciitis. The initial diagnosis was appendicular mass which is quite understandable in view of the presentation. More sophisticated imaging technique (computerized tomography) could have aided early diagnosis and treatment. This is a reminder to bear in mind a more serious differential diagnosis if there is no early resolution of clinical features in appendicular mass. The attending surgeon is enjoined to remember this.

REFERENCES