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Extra-abdominal lumbar abscess rupture through the lumbar triangle of Petit with surgical emphysema: A rare presentation of retroperitoneal caecal perforation.

General Surgery

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ABSTRACT

A retroperitoneal gut perforation presenting with an extra-abdominal lumbar abscess with surgical emphysema secondary to retroperitoneal abscess rupture through the lumbar triangle of Petit is rarely reported. We report a case of retroperitoneal caecal perforation presenting as an extra-abdominal lumbar abscess, with surgical emphysema, trespassing the lumbar triangle of Petit diagnosed definitively by computerized tomography (CT) scan and managed by surgery in two stages. In the first stage, drainage of the retroperitoneal abscess, incision and drainage of extra-abdominal lumbar abscess, closure of perforation and end-ileostomy was done. But there was continuous mucous discharge from incision and drainage site even 4 months postoperatively due to an entero-cutaneous fistula, confirmed by a fistulogram and distal colonic patency confirmed by a colonoscopy. In the second stage, end to side ileo-ascending colon resection anastomosis was done. Patient recovered well. Biopsy showed no malignancy or tuberculosis. **Summary:** Extra-abdominal lumbar abscesses with surgical emphysema of caecal origin with abscess rupture through lumbar triangle of Petit are extremely rare emphasizing such abscess as possible indicator of gastrointestinal pathology and crucial role of CT scan in diagnosis and management.

KEYWORDS:

Caecal perforation; Extra-abdominal lumbar abscess; surgical emphysema; Lumbar triangle of Petit;

Introduction:

Retroperitoneal abscesses are an infrequent condition with potentially lethal implications. An insidious, occult illness marked by diagnostic delay, inadequate drainage, and considerable morbidity and mortality is common in retroperitoneal abscesses. [1, 2] Extra-abdominal lumbar abscesses with surgical emphysema due to retroperitoneal caecal perforation with abscess rupture through the lumbar triangle of Petit are extremely rare. [3] Computerized tomography (CT) scan is the modality of choice in diagnosis and management. Appropriate management depends on general condition, extension of disease and persisting focus of infection etc.

Case History:

A 22-year-old female presented with 2 weeks history of pain over the right lumbar region, fever and an erythematous mass in the right lumbar region. Patient was normotensive, febrile & toxic. Physical examination revealed right erythematous fluctuating lumbar collection with surgical emphysema, fullness in bilateral flanks with tenderness and guarding over the lower abdomen.

Laboratory data showed haemoglobin 9.3 g/dl, WBC count 4 970 /mm3 (Neutrophils 80%), platelet count 49 000 /mm3 & ESR 15 cm/hr. Urine examination and other blood investigations were within normal range.

Abdominal X-ray (Fig. 1a) showed gas bubbles (arrows) in the right flank. Ultrasound showed large amounts of intra-peritoneal and retroperitoneal collections of unknown origin. Abdominal CT scan (Fig. 2) showed a large abscess with multiple air pockets (black arrows) in bilateral retroperitoneal spaces & anterior abdominal wall. There was communication (white arrows) between extra-abdominal lumbar abscesses and retroperitoneal abscesses above the right iliac crest through the lumbar triangle of Petit. Aspirated purulent fluid on culture revealed Klebsiella pneumoniae. These findings were suggestive of hollow viscera injury.

On exploration, 2,500 ml of purulent fluid was drained from bilateral retroperitoneal spaces. There was retroperitoneal caecal perforation which was closed. Incision & drainage of the right extra-abdominal lumbar abscess was performed. End-ileostomy was done. Patient's general condition improved. Fistulogram (Fig. 1b) was done as there was continuous mucous discharge from incision & drainage site even after 4 months, which showed dye filling the ascending colon (black arrows) suggestive of entero-cutaneous fistula (white arrows). Colonoscopy confirmed distal large gut patency. There was a fistulous track at perforation repair site. End to side ileo-ascending colon resection anatomises was done. Patient recovered well. Histopathology showed no evidence of tuberculosis or malignancy.

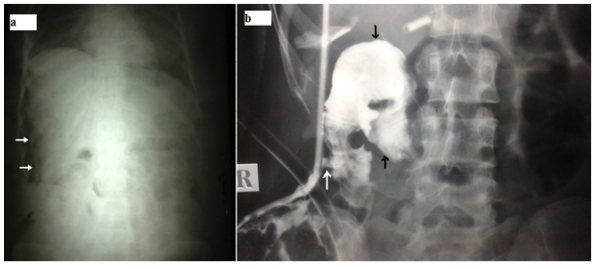

Fig.1 (a) Abdominal X-ray shows gas bubbles (arrows) in the right flank; (b) Fistulogram showed dye filling ascending colon (black arrow) suggestive of entero-cutaneous fistula (white arrow)

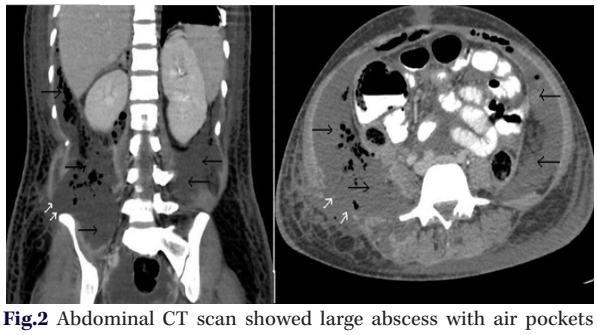

Fig.2 Abdominal CT scan showed large abscess with air pockets (black arrows) in bilateral retroperitoneal spaces & anterior abdominal wall. There was communication (white arrows) between extra-abdominal lumbar abscess and retroperitoneal abscess just above right iliac crest.

Discussion:

Unusual extra-abdominal abscesses due to predominantly extra peritoneal perforation of gastrointestinal structures are only rarely sporadically reported. [3] Among these, abscess of the thigh been documented as a complication of ruptured retro-caecal appendicitis. [4] Necrotizing fasciitis of the thigh been documented as a complication of retroperitoneal abscess in a patient with sigmoid colon cancer. [5] Retroperitoneal and psoas abscesses may extend down along the inguinal ligament and iliofemoral vessels, or through the femoral canal, sciatic foramen, and obturator foramen, resulting in emphysema and abscesses in the thigh and leg. [3]

Recently, a case of perforated diverticulitis presenting as necrotizing fasciitis of the leg and requiring disarticulation of the hip has also been reported. [6] Other rare cases comprising subcutaneous neck and supraclavicular emphysema, pneumomediastinum, pneumopericardium, and pneumoperitoneum caused by ruptured retroperitoneal peridiverticulitis of the colon have exceptionally been reported as well as cervical emphysema caused by sigmoid colon retroperitoneal perforation with abscess rupture through the lumbar triangle of Petit. [3, 7]

The cause of retroperitoneal abscesses depends on the space involved. Anterior para-renal space is usually affected by disease of the retroperitoneal digestive system organs, the peri-renal space is affected by kidney disease, and the posterior Para-renal space by suppurative kidney processes and spinal disease. [1]

The lumbar triangle of Petit is bounded by the latissimus dorsi medially, free border of external oblique laterally and the iliac wing inferiorly. [7]As external oblique muscle is absent here it is considered as an area of relative muscular deficiency. The lumbar triangle of Grynfeltt is bounded by 12th rib above, latissimus dorsi and quadratus lumbarum muscle inside and the internal oblique muscle laterally. Because these two triangles are areas of relative weakness in the abdominal wall, is explanation for unusual traumatic lumbar hernias, classical Gray Turner sign associated with acute pancreatitis, as the extravasated pancreatic enzymes or blood track along these structural defects to the flanks. [3]

Fever, lumbar pain, and lumbar mass were the most common form of presentation. The pathogens most commonly isolated were gram-negative bacilli, alone or mixed microorganisms. The most frequent origin of the abscess was the kidney, particularly in relation to lithiasis and previous urological surgery. The digestive system was the second most frequent origin. [1]

CT scan is modality of choice in definite diagnosis in most of the reported cases. CT scan abdomen with contrast is widely-used imaging with the highest accuracy and efficiency. CT scan helps in the diagnosis, evaluation of the extension of involvement, surgical planning, and drainage of abscess by percutaneous and retroperitoneal approach or by laparotomy based on CT scan. [4]

Most retroperitoneal abscesses require drainage. The classic therapeutic option is surgical drainage and causal treatment. Sometimes they can be treated conservatively, especially if the collection is small (<3 cm) and the patient's general condition is good. [1] In fact, several reports document good results by percutaneous drainage, followed by surgery only if it failed or was contraindicated. [8] Percutaneous drainage reduces the need for surgery and makes it possible to obtain material for culture directly. It delays surgery in patients with surgical indication, thus improving the patient's condition for surgery since it decompresses, evacuates, and provides continuous abscess drainage. [1] Moreover, an infection cannot usually be controlled without removing a persistently existing focus surgically. Percutaneous drainage is inappropriate for critical, septic patients with a persistent intra-abdominal focus, or retroperitoneal abscesses of unknown origin. [8] As our patient was septic and immediate surgical drainage with removal of the primary focus was the best approach.

Our case emphasizes the role played by the lumbar triangle of Petit as sources of extra-abdominal propagation of retroperitoneal abscess. Reciprocally, in the presence of unusual abscesses of the lumbar area, the possibility of retroperitoneal perforation of the gastro-intestinal tract with subsequent abscess would be kept in mind. [3]

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