

CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Surgery Quiz – Case 5

A 74-year-old female patient presented to the emergency department with complaints of undulating fever (38.5 °C), malaise, and diffuse, steady, boring abdominal pain for the past five days. Her symptoms were deteriorated in the last 48 hours with abdominal distention and inability to pass stools. Her past medical history revealed diabetes mellitus, for which she was receiving oral hypoglycemic medication. Her vital signs were BP 135/90 mmHg, HR 86 beats/min. Physical examination revealed decreased bowel sounds, tympany on percussion and mild tenderness on the left abdominal quadrants, but without signs of peritoneal irritation. A spherical shaped, painless, mobile (changing position during deep inspiration), palpable mass, extended from the left hypochondriac region to the left inguinal region. CBC revealed leukocytosis 14.800/μL (PMN 91%), elevated ESR (60 mm/h) and a three-fold increase in ESR. Blood chemistry, urine analysis and chest X-ray were unremarkable. Upright abdominal chest X-ray demonstrated air fluid levels in the small bowel, dilated large bowel filled with air and a colon cut-off sign at the splenic flexure with absence of air in the distal colon. Digital rectal examination showed an empty rectal ampulla, without signs of tenderness or bleeding. A transabdominal ultrasound was ordered but was unequivocal due to the dilated, air-filled bowel. The patient admitted to our clinic for further investigation and was administered a broad spectrum intravenous antibiotic regimen, pending on blood culture results and a nothing per os (NPO) diet was instituted. The patient underwent an abdominal CT which demonstrated a hypo-dense fluid-filled cystic mass (D max 15 cm) with minimal air-fluid levels, in the retroperitoneal region, in close proximity to the left kidney with mild dilatation of the left pelvicalyceal system (fig. 1).

Based on the evidence supported from the CT and provided the fact that the patient did not show any signs of clinical improvement, she was taken to the OR to be operated for a suspected rupture of intramesocolic diverticulitis that led to retroperitoneal abscess. A midline laparotomy was made and the abdomen was explored. The small and large bowel appeared, surprisingly, macroscopically normal (no signs of bowel rupture, peritoneal inflammation, or shortened and thickened sigmoid mesentery). The sigmoid and descending colon were dissected until the splenic flexure and a wide incision of the left lateral parietal peritoneum was undertaken, revealing a large abscess (infected renal cyst) impinging on the lower pole of the left

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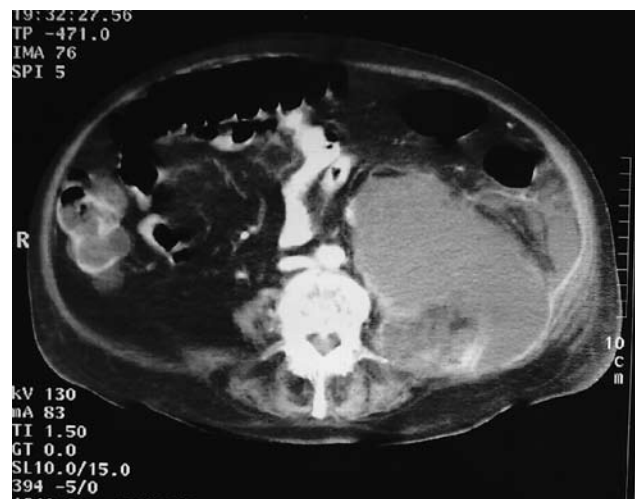


Figure 1

kidney and extending down up to the left iliac fossa, beneath the iliopsoas muscle. Wide drainage and lavage of purulent material and necrotic debris was implemented (specimen for culture was sent). Two wide sump drains were placed in the retroperitoneum and the vicinity of the lower pole of the kidney and a renal stent was deployed in the left kidney.

The post-operative period was unremarkable and within the third post-operative day clinical and biochemical improvement ensued. On the seventh post-operative day the drains were removed and two days later, the patient was discharged in good clinical condition. After two months, the patient was scheduled for removal of the renal stent and underwent as part of her follow-up a new abdominal CT (fig. 2), which showed a small dilatation of the left pelvicalyceal system, multiple cortical cysts of <1 cm diameter on the upper pole of the left kidney and an almost complete effacement of the abscess.



Figure 2

Comment

Retroperitoneal space abscesses constitute uncommon clinical entities that are encountered by many different disciplines, including general surgeons, internists and surgical sub-specialists. Clinico-anatomically, these abscesses can develop in one of the following five retroperitoneal compartments: (a) Perinephric, (b) upper retroperitoneal (above the pelvic brim), (c) pelvic, (d) combined upper retroperitoneal and pelvic and (e) localized musculoskeletal (i.e. confined to iliacus, psoas or gluteus muscles).

Retroperitoneal abscesses can be classified as primary, if infection results from hematogenous spread, or secondary, if infection spreads from a contiguous organ. The majority of retroperitoneal abscesses is attributed to renal diseases (infection, lithiasis or urologic operative procedures), postoperative infections and gastrointestinal disease (mainly diverticulitis, but also pancreatitis, appendicitis, Crohn's disease, etc.). Rare causes include spinal osteomyelitis (especially due to tuberculosis in the past), post-irradiation, malignancies (colon cancer), seeding of posttraumatic pelvic hematoma, cryptogenic and iatrogenic causes. Infections involving the kidney are monomicrobial and involve Gram(-) rods such as *Proteus mirabilis* and *E. coli*. Infections from hematogeneous spread are also commonly monomicrobial (staphylococcal species). On the other hand, those originating from the gastrointestinal tract are polymicrobial and include *E. coli*, *Enterobacter* species, *Enterococci* as well as anaerobic species (i.e. *Bacteroides*).

Signs and symptoms are neither specific nor revealing and include fever, ill-defined abdominal/lumbar pain (referred pain to groin, hip or knee and positive iliopsoas sign in case of psoas abscess), constitutional symptoms such as chills, sweating, malaise, vomiting and mild abdominal tenderness. Nevertheless, all signs and symptoms are characteristically undulating and long-standing (usually more

than a week). The vast majority of these patients have a concurrent medical condition (diabetes mellitus, alcoholism, malignancy, steroid use, immunodeficiency) that renders them susceptible to infection. Laboratory studies (high WBC count, elevated CRP, ESR as well as blood glucose and positive urine analysis) do not also aid, neither in the diagnosis nor in the therapeutic management, since they lack specificity. The cornerstone of diagnosis of retroperitoneal abscess has always been radiological studies and especially CT (can easily distinguish free air from fatty tissue, better than any other diagnostic modality), which has greatly enhanced diagnostic accuracy.

Treatment is mainly operative, combined with intravenous antibiotic therapy. Successful surgical treatment requires dependent drainage without contamination of retroperitoneal space, which is best accomplished via flank approach for upper retroperitoneal and perirenal infections, and a presacral approach, for pelvic infections. Limited but positive experience has been gained with the aid of radiologically guided pigtail drainage of retroperitoneal abscess. Such an initial approach can be attempted for a safely approachable, unilocular, relatively free of solid matter retroperitoneal abscess by an experienced interventional radiologist, with surgical drainage instituted later if prompt resolution of the abscess does not occur.

Unlike the intraperitoneal region, which is readily accessible to physical examination (auscultation, percussion, palpation), the retroperitoneum is relatively "hidden" to the examiner, exhibits little visible reaction to bacterial contamination and thus infection becomes an insidious, occult and prolonged disease. Since diagnostic delay and inadequate drainage are common, a prolonged septic state with increased morbidity/mortality can occur in many cases of retroperitoneal abscess.

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Diagnosis: Large retroperitoneal space abscess (infected renal cyst impinging on the lower pole of the left kidney and extending down up to the left iliac fossa, beneath the iliopsoas muscle)