clinical case

Complicated acute pyelonephritis

Wilmar Azal Neto
Discipline of Urology, FCM - UNICAMP

Fifty four year-old female patient comes to Urology office with a complaint of nocturnal fever, episodes of vomiting and left flank pain for 3 months. She lost 10 kg in this period.

She had a previous history of renal calculi on the left side. She was under surveillance until 4 years before. She was not stone free, but was totally asymptomatic in this period.

Background – Controlled systemic hypertension

Physical exam
Systemic Pressure = 140x90mmHg. HR 120bpm. BR 22rpm. Sat O2 = 94%.
Breathing sounds diminished at lower left thorax.
Tender mass at the left abdomen and flank. No signs of peritonitis.

Labs
Hemogram: WBC 14.500 cel/mL / Hb 8,2 g/dL / Platelets: 374,000 cel/mL
Urea: 54 mg/dL
Creatinine: 1,30 mg/dL
Fasting glucose: 91 mg/dL

Initial management:
Clinical support and thorax X-ray
Thorax X-Ray (Figure 1):

![Thorax X-Ray Image](image_url)

Figure 1 Thorax X-ray. extensive pleural effusion on left side (arrow).

A paciente evoluiu com insuficiência respiratória:

RR = 25rpm. HR = 140bpm. AP = 100x60mmHg.
Gasometry: Metabolic and respiratory acidosis.

**Management:**

Hemodynamic support.
Thoracic drainage with purulent secretion aspiration of 1000 ml.

Patient had a minor improvement in clinical status and both thoracic and abdominal CT scan were performed.

CT scan (Figure 2):
Figure 2: CT scan. Perirenal collection (red arrow). Intrarenal collection (blue arrow) and pelvic calculi (green arrow). CT report - xantogranulomatous pyelonephritis with multiloculated and confluent intrarenal and perirenal collections involving pancreatic tail and spleen. Two centimeter pelvic calculi.

Patient underwent pleural drainage and pleuroscopy and open abdominal cavity drainage with improvement of clinical status.

**Final management:**

Since abdominal drain was unable to fully empty the perirenal collections and severe damage of left kidney was seen on CT scan a decision was made towards open nephrectomy. Surgical specimen is shown in Figure 3.

Intraoperative blood loss was estimated in 600 ml.

Patient had a satisfactory clinical recovery following surgical procedure.
Figure 3: Surgical specimen. Purulent kidney, fibrotic areas and calculi (arrow).

Pathology:

Xantogranulomatous pyelonephritis (Figure 5).

Figure 4: Macrophages full of fat (arrow).
Follow up:

Patient was discharged home after 9 days. Open thoracic drainage was maintained.
Thoracic drain was completely removed after 20 days. Current renal function is Cr = 1.5 mg/dl and pulmonary status is fully recovered (Thorax x-ray in figure 4).

Figure 4: Thorax x-ray after surgery and drain removal. Full expansion of left lung.
Renal abscess and perirenal abscess are rare entities that require both early diagnosis and treatment as they may develop into life threatening sepsis and death otherwise.

Clinical conditions such as diabetes, collecting system obstruction, anatomical variations and immunodepressing conditions may facilitate renal/perirenal abscess occurrence.

Most common clinical manifestations include fever, chills, lumbar pain, nausea and vomiting. (1)

Computerized tomography is the ideal method of imaging to precisely confirm the diagnosis. Gram-negative bacteria are usually the etiological agents involved. (2)

In the past, renal abscesses were usually treated by open drainage and were associated with high morbidity and mortality (3). Nowadays, with the advent of minimally invasive endourological procedures, percutaneous drainage became the method of choice for treatment. It is considered a salvage therapy as it decreases the high incidence of complications and nephrectomies. Therefore, it is recommended to withhold for 48 hours after drainage and maintaining antibiotic IV therapy in order to cool down the acute inflammatory process and then, after improvement of clinical and radiological scenarios, offer the patient adequate definitive treatment. (4) (5)

Referencias bibliográficas:


Dr Osamu Ikari
Urology Professor
FCM - UNICAMP