Psoas abscess secondary to perinephritic infection:
A rare cause for an uncommon pathology

Sirs,

Psoas abscess is uncommon in developed countries. In this setting the large majority of cases occur secondary to another infection, most frequently from the gastrointestinal tract. Perinephritic abscess has been rarely referred as a primary cause of psoas abscess because these infections usually remain localized in the renal area (1, 2). We present here a patient who developed a silent psoas abscess as a consequence of a perinephritic infection, probably due to long-standing nephrolithiasis.

A 61-year-old man was admitted to our hospital for a four-month history of dull pain in the right thigh with progressive swelling of the antero-internal face where a fistula had developed during the latter days. He had no medical antecedents except for a long history of right renal calculi and uretero-pelvic duplicity. Physical examination showed swelling of the right thigh, especially on the antero-internal face where a draining fistula could be seen. There was no fever and the rest of the examination was unremarkable.

Blood cell counts were normal and the erythrocyte sedimentation rate was 53 mm/hr. Urine sediment contained 20 white cells, 2 red cells and more than 10,000 colonies of bacteria per high power field. A tuberculin skin test was negative. Radiographs of the chest, lumbar spine and right hip were normal and in the x-ray of the abdomen the right psoas edge was erased.

An abdominal ultrasonography study disclosed renal calculi in the right kidney and a hypoechoic mass (2 cm diameter) below the inguinal area and anterior to the iliopsoas muscle. A radionuclide scan after intravenous injection of 67Ga citrate showed focal areas of concentration in the right thigh. A fistulography study was performed, demonstrating that the contrast extended from the internal aspect of the thigh up to the level of the lower edge of the first lumbar vertebral body, close to the iliopsoas aponeurosis. A retrograde pyelographic examination disclosed a mildly hydronephrotic kidney and no clear contrast extravasation. Finally, a CT scan of the abdominal cavity and right thigh showed an irregular aspect of the inferior calyx group of the right kidney with swelling of the peri-ureteral area (Fig. 1A), and a large collection involving the entire right iliopsoas muscle and extending down to the thigh beneath the fascia lata, creating a draining sinus (Figs. 1B-D). Cultures of both the urine and drained fluid yielded colonies of gram negative enterobacteria identified as *Proteus mirabilis*.

The patient was treated with antibiotics (ofloxacin 400 mg bid) for four weeks with total recovery. Several months later the patient underwent an extracorporeal shock wave lithotripsy procedure, covered by antibiotics, for his nephrolithiasis.

Psoas abscess has been rarely linked to perinephritic abscesses. This latter entity is associated with renal calculi in up 80% of patients (3). Likewise, *Proteus mirabilis* is a frequent uropathogen associated with renal calculi, given its capacity to split urea and form ammonium hydroxide, which increases the urinary pH and potentiates the formation of stones and renal cell toxicity (4). However, this type of infection usually remains localized in the perirenal area encapsulated by the Gerota’s fascia. In fact, after a thorough review of the literature we found only 3 additional cases (5, 6). We have also found two reports of sterile perirenal pseudocysts (urinomas) with further psoas involvement in patients with nephrolithiasis, one spontaneous and the other occurring after a surgical procedure for the lithiasis (7, 8).

Psoas abscess can be classified as either primary or secondary. The primary forms are the most common in developing countries, *Staphylococcus aureus* being the most frequent etiologic agent. In the secondary forms the microorganism depends on the primary pathology, and in more than 50% of the cases the abscess is polymicrobial. It has been pointed out that Crohn’s disease, followed by appendicitis and colonic neoplasm, are the

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**Fig. 1.** Composite figure showing the main CT scan findings. **A:** Irregular aspect of the inferior calyx group of the right kidney with swelling of the peri-ureteral area (arrowheads). **B:** Abscess involving the right iliopsoas muscle (arrow). **C** and **D:** Abscess extension into the thigh beneath the fascia lata (arrows).
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main causes of secondary psoas abscess, and therefore the culture will yield mixed enteric bacteria in these cases (2). Psoas abscess has also been reported as a classical complication of tuberculous infection of the lumbar spine or sacroiliac joint (9).

Another interesting point in our case was the lack of clear symptoms until the process produced the draining sinus. Psoas abscess is frequently a silent process. Since the psoas muscle is localized very deep, classical symptoms and signs of this entity such as fever, abdominal pain, a palpable abdominal mass or hip flexion contracture are often absent (1), a fact which often precludes a quick diagnosis. However, it is surprising that our patient did not present flank pain or fever, inasmuch as most perinephritic infections produce these types of clinical manifestations (10).

In summary the present case underlines the fact that the kidneys must be considered as a possible site of origin of psoas abscess, especially in patients with a history of renal calculi and no clinical history of gastrointestinal disease or lumbosacral infection.

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References