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Psoas abscess ten years after ipsilateral nephrectomy for pyonephrosis

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SUMMARY: Psoas abscess ten years after ipsilateral nephrectomy for pyonephrosis.

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Pyogenic abscess of the psoas muscle is a rare disease. The Authors report a recently observed case which developed 10 years after ipsilateral nephrectomy for pyonephrosis, reviewing the pertinent literature. The culture of the pus extracted only reproduced Proteus mirabilis. The relation between psoas abscess and nephrectomy is unclear. To make diagnosis is important to consider this condition in differential diagnosis in presence of fever and flank tenderness in a nephrectomized patient.

RIASSUNTO: Ascesso del muscolo psoas dieci anni dopo nefrectomia omolaterale per nefrosi piogena.

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L'ascesso piogeno del muscolo psoas è una patologia rara. Gli Autori presentano un caso recentemente osservato di ascesso del muscolo psoas insorto omolateralmente in un paziente nefrectomizzato 10 anni prima per nefrosi piogena ed esaminano la letteratura sull'argomento. L'esame colturale del pus drenato dalla raccolta ascessuale dimostrò come unico germe il Proteus mirabilis. La relazione esistente fra l'ascesso del muscolo psoas e la nefrectomia non è chiara. Bisogna considerare questa possibilità nella diagnosi differenziale quando in un paziente nefrectomizzato sono presenti iperpiressia e dolore al fianco.

KEY WORDS: Psoas abscess - Nephrectomy - *Proteus mirabilis.*
Ascesso psoas - Nefrectomia - *Proteus mirabilis.*

Introduction

Pyogenic abscess (PA) of the psoas muscle is an infrequent disease. It may be primary when PA is the focus of infection or secondary as occurring by direct spread from underlyng infections (Crohn's disease, ulcerative colitis, diverticulitis, appendicitis, colonic neoplasms, discitis, pyonephrosis and perirenal infections, tuberculosis, postoperative complications).

In this study the Authors report a case of PA which developed 10 years after ipsilateral nephrectomy for pyonephrosis and review the pertinent literature.

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Case report

A 77-years-old female was referred to the emergency service in our hospital with a five days history of abdominal pain, nausea, fever, difficulty in walking and general deterioration of health. Medical history was significant for hypertension. Surgical history revealed a cholecystectomy, a left mastectomy and 10 years ago a right nephrectomy for pyonephrosis.

Physical examination revealed a corpulent woman in moderate abdominal distress; temperature was 38,5°C, blood pressure 130/60 mmHg, heart rate 100 bpm and respiratory rate 22/min. She had a severe right flank tenderness pain that became more severe by deep palpation and when she extended the leg. Right thigh was swollen in comparison to the other. The laboratory tests showed a moderate WBC (13000), an increase of ESR and fibrinogen (817), an Hg of 9,6, a C-reactive protein of 29,48. Results of other blood tests were normal. Chest X-ray and abdominal plain film were normal. Abdominal ultrasonography (US) was not significant while superficial tissues US in right groin and right iliac region showed the presence of an extensive abscess. At computed tomography (CT) the abscess extended from the right posterior pararenal region along the psoas muscle to the root of right thigh, extending in the retroperitoneal space to the right paravertebral muscles.

At surgery three incisions were respectively performed in the right groin region, in the right iliac region and in the site of the previous laparotomy for nephrectomy. Pus (1500 cc) was drained and three drainages were placed. A culture was prepared from the pus and only yielded *Proteus mirabilis.*

The patient was subjected to a triple intravenous antibiotic treatment (meropenem, clindamycin and metronidazole). Symptoms totally disappeared after a week and drainages were removed. The patient was discharged well 10 days later and is now subjectively well.

Discussion and conclusion

Pyogen abscess of the psoas muscle is a rare disease. The annual worldwide incidence is estimated at only 12 cases for years (1). PA may be "primary" when the psoas muscle is the focus of infection or "secondary" as occurring by direct spread from underlyng infections from the intestinal bowel disease (Crohn and ulcerative colitis), appendicitis, diverticulitis, colonic neoplasms to perirenal infections, pyonephrosis, pyelonephritis, tuberculosis and postoperative complications (2, 3). Common responsible microorganisms are *Staphylococcus aureus, Escherichia coli, Proteus mirabilis, Klebsiella pneumoniae, Pseudomonas aeruginosa, Bacterioides fragilis* and *Serratia marcescens* (4).

Diagnosis is difficult because the clinical findings are various and unspecific, usually including fever and flank pain. Routine laboratory findings and conventional radiographic examinations are often inconclusive. US examination is the first choice in PA identification but only CT is helpful in determining the extension of inflammation (5-8).

Treatment consists of percutaneously drainage of the small abscess with a US-guided tube or surgically with short skin incisions in the extended abscesses. It is also necessary to prepare a culture from the liquid extracted for starting an appropriate antibiotic treatment.

After a review of the literature we confirm that there is a founded relation between the nephrectomy and PA. Knobel et al. (9) reported a case of PA 3 years after ipsilateral nephrectomy for nephrolithiasis with pyonephrosis. The Authors didn't found any relationship between PA and nephrectomy and considered primary origin of the PA. Van Heesewijk et al. (10) described a PA developing 21 years after nephrectomy for pyonephrosis. He explained the involvement of the psoas muscle from a residual local infections focus. Tunidor et al. (11) reported a xanthogranulomatous PA 4 years after nephrectomy for xanthogranulomatous pyelonephritis. Guillaume et al. (12) described a case of PA that developed 27 years after nephrectomy for renal stones. The abscess developed after the occurrence of an urinary tract infection associated with a bladder retention. The increase of bladder pressure allowed to the bacteria to spread throught the ureteral stump. Other 2 cases of PA secondary to xanthogranulomatous pyelonephritis 21 years after nephrectomy were recently described by Cabir et al. (13). They also suggested to perform a partial muscle excision if needed.

In conclusion the development of PA postoperatively is however unclear. Reaction against silk sutures, fractured tissue or stone fragments left behind at the time of surgery may account for the development of PA (14-16). Postoperative local hematoma may be a good media for growing bacteria which could have spread from other sources in the body hematogenously. The reason of late detection of PA could be due to the smaller size of the abscess in early postoperative period as well as due to patients whether beeing asymptomatic or with vague non-specific symptoms for longer periods after surgery. Immune status of the patient and "dormancy" of the infecting organism can also be considered (17, 18).

The key to making diagnosis is to consider PA in differential diagnosis in an ipsilateral nephrectomized patient with flank tenderness and fever. With suspicion of PA and the improved diagnostic tools it is possible achieve a better preoperative management plain.

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