

## When the Clinical Presentation could be Deceiving: A Rare Case of Abscess of the Psoas Muscle

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### ABSTRACT

The psoas muscle abscess is a rare condition characterized by a varied clinical presentation and a diversity of etiologies. The exact incidence is unknown, but it is likely that an increase on the number of cases has been happening during the last few years. There is a lack of evidence in what respects to the etiology, clinical presentation, investigation and the therapeutic approach. The gold standard for diagnosis is the computed tomography or CT scan. In this article the author reports a clinical case of a patient who had a left kidney nephrectomy ten years before the presentation and who developed an ipsilateral abscess of the psoas muscle.

**Keywords:** Psoas muscle abscess, Nephrectomy, *Staphylococcus aureus*

### INTRODUCTION

The abscess of the psoas muscle is a rare disease characterized by a varied clinical presentation and a diversity of etiologies, which may delay the diagnosis and consequently the treatment, worsening the prognosis.

Despite the advances in the complementary diagnostic exams, there is still a lack of evidence regarding the etiology, clinical presentation, methods of investigation and therapeutic approach. The gold standard for diagnosis is the computed tomography or CT scan [1,2].

The psoas muscle abscess may be classified as primary, when the abscess is infectious in origin, or secondary when it is caused by a pre-existing condition [3].

There are few reported cases of psoas muscle abscess after ipsilateral nephrectomy, and their relation is yet to be defined [4].

To reach the diagnosis, it is necessary to possess a high level of suspicion and to include this differential diagnosis in any patient who has had a nephrectomy and who presents with fever and lumbar pain, even when the surgical procedure hasn't been performed recently shown in Figure 1 and Figure 2.



Figure 1: Lumbar spine (Level L2).



Figure 2: Lumbar spine (Level L3).

In this article the author reports a clinical case of a patient who had a left kidney nephrectomy ten years before the presentation

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and who developed an ipsilateral abscess of the psoas muscle, in the absence of any other known related cause. Could there be a relation between both entities, despite the length of time separating their occurrence?

### Clinical case

A 52 year old feminine, autonomous patient, suffering from grade 1 obesity, who had had a left kidney nephrectomy ten years before the presentation caused by a ureterhydronephrosis secondary to uric nephrolithiasis, presented to the Emergency Room (ER) with fever and complaints of lumbar pain, mainly on her left side, which spread to the flank, inguinal area and pelvic limb. With a week of clinical progression, there was at the time an obvious functional limitation and there had been a progressive clinical deterioration. There were no other symptoms, either related to the urinary or gastrointestinal systems. The clinical exam revealed: hemodynamic stability, fever (38, 6°C), a painful abdomen when palpating the flank and iliac fossa on the left side, pain on palpation of the lumbar muscle mass and spinous processes of the thoraco-lumbar vertebra on the left side, paresthesia and pelvic left limb pain, with an inability to fully extend the leg. There were no other changes, individually related to the neurological exam.

Complementary diagnostic exams were requested, highlighting:

1. Complete blood count with a leukocytosis of 19300 uL, neutrophilia of 87% and a PCR of 31 mg/ dL, with no renal imbalances, and an unremarkable lactate measurement;
2. Urine exam presenting leukocytes 2+ and negative for the presence of nitrites, in a patient with no urinary complaints.

For a better understanding of the clinical case, in a patient with fever of unknown origin, but where one could exclude left kidney pyelonephritis while identifying a suspicion towards the occurrence of an atypical case of spondylodiscitis, a CT scan of the lumbar spine and afterwards of the abdominal-pelvic area were obtained.

Contrarily to the initial expectation, a multi loculated collection located on the left psoas muscle was identified, extending from the D12 vertebrae to the iliopsoas muscle, presenting several cavities, measuring the largest one about 76 mm.

After confirming the infection etiology, the patient was hospitalized and empiric antibiotic therapy was initiated with piperacillin+tazobactam. Simultaneously, blood was collected for a culture and the General Surgery team was requested to participate in the case.

After two days of antibiotic therapy with piperacillin+tazobactam, nor a clinical or analytical improvement were verified. Therefore, bearing in mind that the majority of the primary abscesses of the psoas muscle are caused by *staphylococcus aureus*, including MRSA, and having into account the uncontrolled body temperature of the patient and the rise on inflammatory parameters, a choice was made to introduce vancomycin even before having the result of the blood culture (which later came positive to the presence of *staphylococcus aureus* MRSA). Considering the abscess extension, surgical drainage

was performed and a biological sample was obtained, where *staphylococcus aureus* MRSA was also isolated.

The patient became asymptomatic one week after the surgical procedure, which matched the end of an eight day course of directed intravenous antibiotic therapy.

While controlling the primary infection focus, possible secondary conditions were ruled out, especially those related with the gastrointestinal system, osseous pathology and HIV infection. An echocardiographic exam resulted also unremarkable.

### DISCUSSION

The psoas muscle abscess is a rare condition. The exact incidence is unknown, but it is likely that an increase on the number of cases has been happening during the last few years. A systematic review on this issue, covering studies realized in the period between 1881 and 1990, has demonstrated a total number of 434 cases of psoas muscle abscess, with an incidence of approximately 4 new cases per year. However, the clinical presentation, often deceiving, associated with a small dimension of the abscess or related to the raised suspicion of other conditions, may delay the establishment of a diagnosis, and for this reason it is likely that the incidence of this disease has been underestimated, being the real incidence of 12 new cases per year [3].

There is a lack of evidence in what respects to the etiology, clinical presentation, investigation and therapeutically approach, but one must always consider the need of surgical intervention to reach the cure (except in very small abscesses) [1,3,4].

The primary abscess of the psoas muscle occurs more frequently in younger patients and it's usually difficult to define its accurate etiology. It is presumed that the spread of the infection happens *via* hematogenous and the most frequently isolated infectious agent is *staphylococcus aureus*, identified in about 88% of the reported cases. On the opposite, secondary abscesses occur more frequently in older or debilitated patients with pre-existing conditions. In 80% of these cases, the primary infection focus is found on the gastrointestinal tract, (mainly appendicitis, diverticulitis and pancreatic or colorectal neoplasia) [3-6].

### CONCLUSION

In the presented clinical case, and despite the knowledge that about 30% of the cases are classified as idiopathic primary abscesses, one can't exclude the possible relation between the psoas muscle abscess and the previously realized ipsilateral nephrectomy. The literature makes reference to those clinical cases, although the causal relation is yet to be demonstrated, rising need for further studies on this subject.

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