

### Psoas Abscess That Mimics Acute Appendicitis

Celerino Arroyo-Rangel<sup>1</sup>, Shirley Yoselin Salazar-Ruiz<sup>1</sup>, Paola Haidee Magaña-Flores<sup>1</sup>, Enrique Sanchez-Valdivieso<sup>2,3</sup>

1 Department of Surgery, IMSS Hospital General de Zona 71, Veracruz, Mexico

2 Hospital de Alta Especialidad de Veracruz, Mexico

3 Cristobal Colon University, Veracruz, Mexico

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#### Corresponding author:

**Enrique Sanchez-Valdivieso,**

Av. 20 de Noviembre sn,  
CP 91700, Veracruz, Ver.,  
Mexico.

Telephone/Fax: +52 229 2021260

Email: easanchezv@gmail.com

#### ABSTRACT

Psoas abscess is rare, resulting in an under-diagnosed disease with high mortality rates. Psoitis, as psoas abscess was formerly called, can be lethal depending on how early treatment was started. The psoas abscess can simulate appendicitis and have the appendix removed without improving the condition. Symptoms are often nonspecific, leading to a delay in diagnosis. The present case developed an atypical form of psoas abscess that mimicked a case of appendicitis and underwent an unnecessary appendectomy. Laparoscopic drainage is a treatment that has advantages such as complete drainage of the abscess, short hospital stay and fast recovery.

**KEYWORDS:** psoas, abscess, laparoscopy, appendicitis

#### INTRODUCTION

Psoas abscess (PA) is a rare medical condition in which a collection of pus forms in the iliopsoas muscle compartment [1]. Due to the abundant blood irrigation of the psoas muscle, it has a high susceptibility to hematogenous or lymphatic spread of bacteria from distant sites, as well as contiguity from adjacent structures [1], classifying them as primary and secondary PA, the most common being the primary PA (17% - 61%) [2].

Diagnosis of PA is usually difficult due to the nonspecific symptoms. The objective of this report is to describe the clinical similarity between a right PA and acute appendicitis.

#### CASE PRESENTATION

A 33-year-old obese female with a 3-year history of rheumatoid arthritis on prednisone treatment, whom

began 5 days prior to her admission with periumbilical pain, and then pain radiation to the right iliac fossa and right groin region, fever and vomiting. On physical examination decreased peristalsis, pain after palpation on the right flank, right iliac fossa and right groin region, Mcburney sign (+), psoas sign (+) and obturator sign (+), were found.

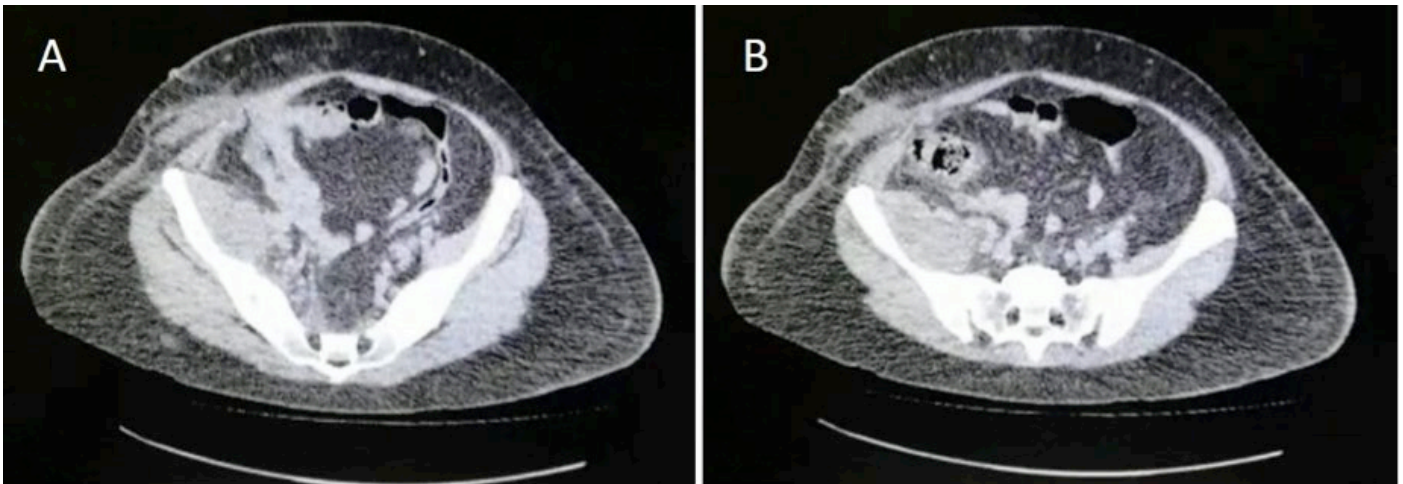
Her vitals on admission were abnormal: Heart rate 120 bpm and temperature 37.8 °C. Laboratory showed leukocytes 21,500/ml, 90.4% neutrophils, glycemia 132 mg/dl. Ultrasound showed right iliac fossa with a 50 x 17 mm appendix and a 7 mm non-compressible wall after maneuvers. A diagnosis of probable acute appendicitis was made, and patient underwent open appendectomy with findings of "hyperemic and edematous" appendix. She was discharged 36 hours after surgery; however, she returned to the ER 24 hours later (3rd postoperative day) with pain in the right lower quadrant of the abdomen



radiating to the right groin region, 9/10 VAS intensity, fever and claudication.

Laboratory on admission: leukocytes 25,400/ml, 86.1% neutrophils, glycemia 146 mg/dl. Ultrasound reports a 45 ml-collection in the right iliac

fossa. Computed tomography (CT) scan showed an inflammatory pattern of the right psoas with free fluid within its sheath (Figure 1A and 1B). A collection of purulent material was found due to a retroperitoneal abscess at the level of the middle third of the right psoas sheath.

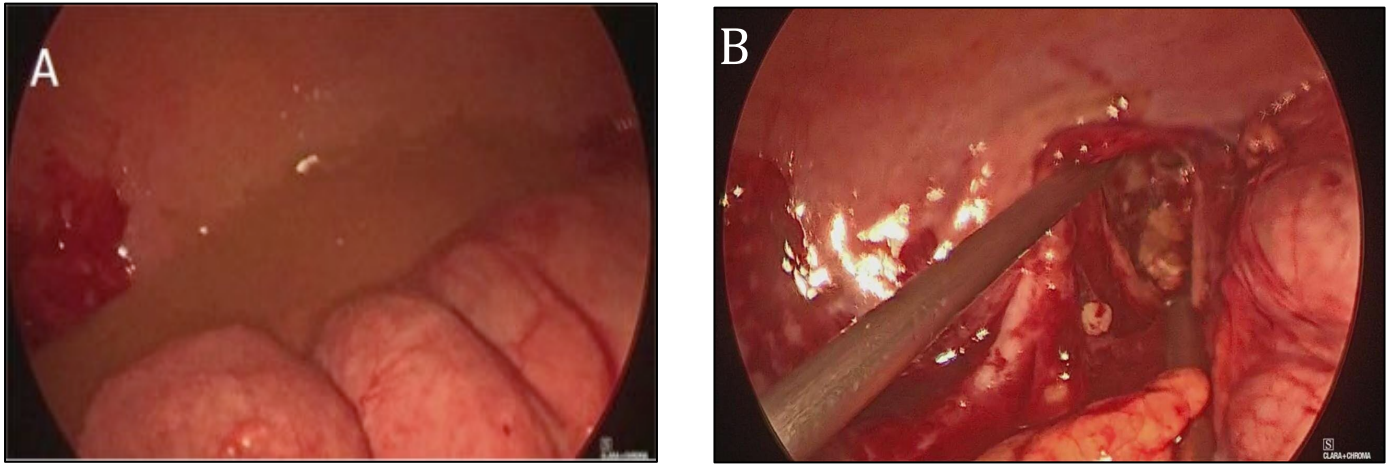


**Figure 1 (A and B)** CT scan; Collection is observed at the level of the right psoas

Conservative management of the abscess was started with a double antimicrobial regimen (Imipenem and Vancomycin) since the patient had no signs of an acute abdomen or hemodynamic decompensation. However, as there was no clinical improvement due to lack of response to conservative treatment, with a torpid evolution and progression of sepsis, it was decided to perform surgery; 4 days later (and 10 days since her first admission) she underwent exploratory laparoscopy (our hospital does not have interventional radiology, which is why the decision was made to perform the drainage laparoscopically, as it is the least invasive resource we have) with the following findings:

Retroperitoneal abscess located at the middle third of the right psoas sheath and 200 ml of purulent material and necrotic tissue obtained (Figure 2A and 2B); a Biovac-type closed drainage was left. The microbial culture reported *Staphylococcus aureus* sensitive to Vancomycin. The patient was discharged 6 days later due to clinical improvement. The drainage was removed when she was discharged since she did not present any output through it. Pathology examination of the appendix showed no signs of acute inflammation (data not shown).

During the outpatient follow-up, control abdominal tomography was performed at 3 months and abdominal ultrasound and colonoscopy at 6 months with no evidence of alterations. The patient was discharged after 12 months of follow-up without recurrence.



**Figure 2.** A) Laparoscopic approach with drainage of purulent material.  
B) Complete removal of the capsule of the right psoas abscess.

## DISCUSSION

Psoitis (currently referred to as PA), first described by Herman Mynter in 1881, is a rare cause of pain in the hip, lower back, or groin, more commonly seen in men than in women, with a mean age at diagnosis between 44 and 58 years [1]. The clinical picture is usually nonspecific; the classic triad of low back pain (91%), fever (75%), and restriction of hip movement (psoas sign), is present in about 30% of cases [1]; our patient only presented fever. There are other infrequent signs and symptoms (groin mass, limp, anorexia).

PA can present as one of the following two clinical presentations: the most typical or the most atypical manifestation. In the present case, the patient initially showed an atypical form of PA that simulated a case of appendicitis, although later it evolved to a typical presentation of PA, since the patient developed severe pain in the groin region, leukocytosis, and persistent fever in the postoperative period. This clinical presentation in the present case was similar to the evolution of the case reported by Miller [3].

The PA is classified into primary and secondary. It has been described in the literature that psoas abscesses are more frequent on the right side [4], but there are no explanations for this fact [2], although it is probably due to the higher incidence rate of infectious pathology on this side. Primary PA has a better prognosis and its mortality rates range between 2.5% and 18.9%. [5] Primary PA is usually caused by hematogenic spread, is more common in children and

adults under 30 years of age. *Staphylococcus aureus*, *Escherichia coli*, *Bacteroides* sp., *Mycobacterium tuberculosis*, *Streptococcus viridans*, *Enterococcus faecalis*, and *Peptostreptococcus* are the most common source of infection. In this case the isolated pathogen was *staphylococcus aureus*, pointing towards the diagnosis of primary PA.

CT scan should be the standard option for confirmation of PA. In the present case, a CT scan was requested on the first day of readmission, after postoperative discharge from appendectomy, since the patient still had fever and pain, similar to the case reported by Miller et al [3]. This examination was of the utmost importance for us to reach a correct diagnosis, and it must also be performed in order to find other sites of residual collections.

Drainage is recommended for cases involving large abscesses or when antibiotic therapy is not effective [5]. Drainage can be achieved by percutaneous puncture drainage or surgical intervention [6]. Laparoscopic drainage allows complete drainage through the extraperitoneal approach, and is useful in case we do not have an interventional radiology service available at our institution. In our health environment, despite having tertiary care units, the availability of interventional radiology facilities is not feasible for a case that can be surgically solved at the second level of care. In the literature there are few documented cases of laparoscopic drainage of PA with excellent results [6].

## CONCLUSION

PA can be associated with significant morbidity and mortality; the prognosis improves with an early diagnosis and when adequate treatment is promptly initiated. Laparoscopic drainage of PA is an option when percutaneous drainage is not feasible.

## Conflict of Interest

Authors declare none.

## Authors' contribution

The manuscript has been read and approved by all the authors, the requirements for authorship as stated earlier in this document have been met, and each author believes that the manuscript represents honest work.

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