



Infectious Sacroiliitis: Impact of the Pandemic COVID-19 on Diagnostic and Therapeutic Management

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Abstract

Infectious Sacroiliitis (ISI) accounts for only 1% to 2% of all causes of septic arthritis. It is a rare condition, complex due to the deep location of the joint and the diagnosis of which is generally difficult to establish; based on clinical tests and radiological examinations, but above all the isolation of the germ. Undiagnosed or delayed diagnosis of IBS can be responsible for serious complications.

We report the case of a patient with no known risk factor, presenting with left infectious sacroiliitis. Whose diagnostic and therapeutic care has been delayed due to the COVID-19 pandemic.

Introduction

Infectious Sacroiliitis (IBS) is relatively rare and difficult to diagnose in a clinical setting, accounting for only 1% to 2% of all causes of septic arthritis [1]. Its incidence is extremely low with only 1 to 2 cases diagnosed per year [2,3].

Undiagnosed or delayed diagnosis of ISI can be responsible for serious complications (gluteal region abscess, sequestration, joint destruction and instability, hematogenous dissemination or even sepsis, death) [4].

IBS is most often of hematogenous origin with implantation of the microorganism on one of the joint edges or in the synovium. *Staphylococcus aureus* is the microorganism most often involved (80% of cases), followed by *P. aeruginosa* [3-5]. The chronic forms are usually of tuberculous or Brucellian origin.

We report here the case of a patient with no known risk factor, whose diagnosis of ISI was delayed due to the health context of the coronavirus.

Observation

This is a 66-year-old patient in good health, with no significant medical history, who presented with progressively worsening left buttocks radiating down the left thigh with fever to 39, progressing for two months bringing the patient to consult in the emergency room of a private clinic; given the context of the coronavirus, our patient followed the circuit of suspected COVID-19 patients, imposed by the health authorities, where hospitalization was required with realization of a RT PCR on the 1st day and on the 15th day returned negative, for example the patient was subsequently treated with analgesics and muscle relaxants with strict confinement at home for 15 days. Given the worsening of her painful symptoms, she is referred to our training for treatment. On admission the patient presented in a wheelchair with pain in her left groin and buttock, feverish at 39 with normal vital signs. On inspection, there was no erythema or edema near the hip and the left gluteal region. Palpation revealed pain on pressure on the left sacroiliac joint with a facing serif, and without tenderness of the trochanteric bursa. Patrick's test was positive. Responses to Lasègue's test and to pressure applied to the left piriformis muscle were positive. The muscle strength of the left lower limb was 4/5. No calf tenderness.

The X-ray of the pelvis and lumbar spine, revealed a staged discarthrosis in the lumbar spine with posterior staged inter-apophyseal osteoarthritis predominating on the left and a blurred appearance of the subchondral bone, blades at the level of the sacroiliac joint (Figure 1).

The echography of the left gluteal region showed the presence of a lesional process, hypoechoic, heterogeneous with color Doppler, of deep topography in contact with the left sacroiliac, sponsor for an irregularity of the bone cortical look (Figure 2). The scenography complementary (The CT scan)

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Figure 1: The pelvic X-ray shows a blurry appearance of the subchondral bony laminae at the left sacroiliac joint.



Figure 2: Ultrasound of the left gluteal region showed the presence of a lesional, hypoechoic, heterogeneous process with color Doppler hyperemia.



Figure 3: CT views of the pelvis showing a heterogeneous appearance of the left sacroiliac joint.

showed a hypodense mass, poorly limited, measuring 57 mm × 29 mm, located below the left sacro-iliac, filling the ischial foramen with rearrangement of the joint space (Figure 3). The MRI revealed the presence of a lesional process centered on the left-sacroiliac, with a hypersignal of the sacroiliac joint, a pseudo enlargement, and osseous erosions especially on the iliac side. The presence of the mass sitting below the foot of the sacroiliac joint of 40 mm × 41 mm, in hypersignal, containing central areas of fluid, enhancing heterogeneously with thickening of the piriform muscle, and coming into contact with the sciatic nerve (Figure 4). The scan guided percutaneous biopsy puncture (with anatomopathological and bacteriological study) was performed (Figure 5); with results in favor of a nonspecific subacute inflammatory rearrangement without signs of malignancy.

Culture showed the presence of *Staphylococcus aureus*. Thus, an antibiotic therapy adapted according to the results of the antibiogram (blood cultures -*Staphylococcus aureus* sensitive to methicillin-), parenterally; was started with the combination

Levofloxacin 500 mg × 2/day and cefazolin 2 g ×/day for 15 days then relayed orally for 4 weeks.

The evolution was marked by a marked improvement in pain symptoms with resumption of walking on day 7 of treatment, apyrexial obtained from the 3rd day. Biologically: On day 7 of treatment, the

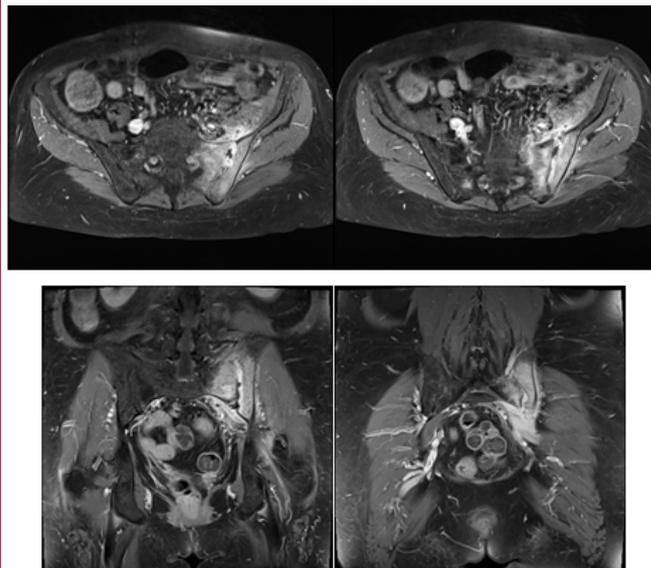


Figure 4: MRI revealed the presence of a lesional process centered on the left sacroiliac, with hypersignal in the sacroiliac joint, pseudo-enlargement, and bone erosions, particularly in the iliac side.



Figure 5: CT sections showing the path of the CT Biopsy.

blood count was normal (leukocytes at 8000/mm³). CRP in declining kinetics: 174 mg/l on day 7, and 36 mg/l on day 14.

The patient continued to improve, both clinically and biologically with antibiotic therapy which was continued for 6 weeks.

Discussion

Infectious sacroiliitis is an uncommon condition, accounting for less than 1% of all causes of septic arthritis. Most often of hematogenous origin by implantation of a microorganism on one of the joint edges (in particular the iliac side due to a very slow blood flow) or in the synovium. Among the risk factors are: Pregnancy, alcoholism, drug addiction and a neoplastic context [6]. The other predisposing factors are: A pelvic trauma or recent spinal surgery and a distant infectious focus (in adults, a urinary tract infection most often) [7].

Diagnosis of ISI is difficult and often overlooked or delayed due to its nonspecific symptoms, especially in patients initially presenting with nonspecific symptoms that are difficult to differentiate from sciatic or septic arthritis of the hip; sometimes it is an acute abdomen and septic syndrome [8].

Following the global health context of COVID-19; our patient did not have adequate management of her infection; delayed diagnosis and erroneous treatment; as well as a worsening of his clinical symptoms. Despite the atypical clinical picture (difficulty in walking, intense pain, tenderness to palpation of the left SI joint and the febrile

context), we suspected an infectious cause, confirmed by radiological and biological investigations.

The clinical presentation of IBS is variable. Its initial manifestations may mimic low back pain, sciatica, intra or extra-pelvic abscess, psoas abscess, septic arthritis of the hip, renal lithiasis or pyelonephritis. Considering the non-specific symptoms; more than half of patients were not correctly diagnosed during the first 10 days or more [9,10]. Among the suggestive signs are fever, localized and lateralized pain with gluteal irradiation, sometimes abdominal irradiation, lameness [8,11]. Patrick's test [12] suggests pain caused by dysfunction of this joint.

Biologically, the rise in CRP is not very specific, but it is more sensitive than leukocytosis. Blood cultures are positive in 23% to 67% of cases, culture of joint fluid in 50% to 88% of cases [13].

Plain X-rays are often normal at the onset of infection. Beyond 2 to 3 weeks, signs in favor of IBS may be found, such as a blurred appearance of the subchondral bone layers, pinching or widening of the space and or subchondral erosions [14].

The technetium 99m scintigraphy can be positive from the 3rd day of infection but it does not allow the analysis of the soft tissues.

The scanner is less sensitive than the MRI; above all, it allows early visualization of bone lesions. And the guidance of samples (puncture of joint fluid or abscess and percutaneous biopsies) [15].

MRI remains the technique with the highest sensitivity and specificity (95% and 100% respectively) for the early diagnosis of infectious sacroiliitis [16]. It allows a better visualization of the sacroiliac joint and the adjacent soft tissues, as well as the demonstration of an inflammatory reaction of the joint space and its edges, and to search for associated collections which can migrate at a distance [17].

The confirmatory diagnosis is based on the demonstration of the germ in the joint fluid following a puncture biopsy or blood cultures [6,14,18]. The latter are positive in 58% to 69% of cases in adults, and 46% in children [7,9].

The culture of joint fluid is positive in 50% to 88% of cases [13].

The treatment of IBS is based on the identification of the causative organism, and the results of the antibiogram. After the biopsy and blood culture have been taken, probabilistic antibiotic therapy with vancomycin or a third-generation cephalosporin with or without aminoglycoside should be initiated. Antibiotic therapy must then be adapted according to the bacteriological results [19].

Currently there is no consensus on the duration of antibiotic therapy, but most sources agree that a minimum of 4 weeks of antibiotic therapy should be given [9].

Conclusion

Infectious sacroiliitis is a rare pathology, little described in the literature, complex due to the deep location of the joint. The diagnosis is generally difficult to establish; based on clinical tests validated in the literature, associated with radiological examinations, but above all the isolation of the germ from blood cultures and joint fluid, thus allowing the performance of the antibiogram, the only guarantee of a good joint prognosis.

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