SHORT COMMUNICATION

Profile of infectious sacroiliitis among rheumatology inpatients in Lomé (Togo): A single center experience

Owonayo Oniankitan a,*, Komi C. Tagbor a, Lama K. Agoda-Koussema b, Eyram Fianyo a, Viwale E.S. Koffi-Tessio a, Kodjo Kakpovi a, Prénam Houzou a, Moustafa Mijiyawa a

a Department of Rheumatology, CHU Sylvanus Olympio Lomé, Togo
b Department of Radiology, CHU Sylvanus Olympio Lomé, Togo

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Infectious arthritis; Infectious sacroiliitis; Epidemiology; Black Africa

Abstract  Aim of the work: To determine the epidemiological, clinical, bacteriological, and radiological characteristics of infectious sacroiliitis in patients admitted to the Rheumatology Department in Lomé (Togo).

Patients and methods: A retrospective study was conducted over 21 years on files of hospital patients admitted for infectious sacroiliitis.

Results: Of the 2995 patients admitted, 359 suffered from infectious arthritis, and 18 cases suffered from infectious sacroiliitis (5%). The mean age at admission of those 18 patients (seven men, eleven women) was 34.22 ± 13.5 years while the mean disease duration was 22.05 ± 41.9 days. The onset was sudden in 14 patients. The sacroiliitis was essentially unilateral (17 patients). The pain which was essentially inflammatory (16 patients), had irradiated in 14 patients. Fever was observed in 16 patients while weight loss was seen in 11. The infectious gate has been found in 15 patients (88.3%) with a post-partum period in five patients (27.8%). Limpness has occurred in 12 patients. Erythrocyte sedimentation rate was high in 13 patients with a mean of 78.83 ± 15.21 mm/1st hour. Of the 18 patients, pathogenic agents were isolated in 8 (Staphylococcus aureus: 7 cases, Mycobacterium tuberculosis: 1) and probable infection by Mycobacterium tuberculosis in another. Pathogenic agents were detected by cytobacteriological examination of vaginal sample in 5, urine in 2, sputum in 1 and psoas puncture in another. The mean antibiotic therapy duration was 3.25 ± 3.1 months. Followed up 6-months later the patients improved well.

* Corresponding author. Address: BP 14502, Lomé, Togo. Tel.: +228 90156634.
E-mail address: owonayo@yahoo.com (O. Oniankitan).

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1. Introduction

Infectious sacroiliitis is rare, involving between 1% and 2% of septic arthritis cases, which is probably due to the poor vascularization of this joint resulting in a low risk of infection via the haematogenous route [1,2]. Most observations are based on single case reports and review of the literature [3–8], small case series [9,10] or multicentre studies [11].

The diagnosis of osteo-articular infection has many clinical signs and symptoms [1,12–14]. Delay in diagnosis may lead to several complications, such as abscess or sequestration formation, prolonged period of sepsis, and long-term joint deformity [15]. Studies of rheumatic diseases in Africa showed the paramount place of infectious pathology despite the progress of antibiotic therapy [16–20].

Despite the frequency of osteo-articular infections in Africa, infection of the sacroiliac, which is a disorder with sometimes misleading clinical signs, seems relatively rare [15,16,21,22].

The aim of this study was to determine the epidemiological, clinical, bacteriological, and radiological characteristics of infectious sacroiliitis in patients admitted to the Rheumatology Department, University Hospital Sylvanus Olympio of Lomé (Togo).

2. Patients and methods

This is a retrospective study that has been conducted over 21 years on the files of patients admitted in the Department of Rheumatology, University Hospital Sylvanus Olympio of Lomé; the capital city of Togo (West Africa). The study was approved by the ethics committee. The demographic, clinical, bacteriological and radiological data of the patients have been collected from their files.

The positive diagnosis of the osteo-articular infection has been essentially radiological and clinical while the etiological diagnosis was based on the isolation of the germ, and/or the underlining of the characteristic histopathological lesions, or a strong clinical suspicion (existence of another infectious location, namely a pulmonary or spine tuberculosis, response to antibiotic treatment). The infection was considered certain if a causal microorganism was isolated or if a specific histopathological lesion was observed in the infectious site. On the contrary, the infection has been considered probable in case of a strong clinical suspicion (existence of another infectious location, namely a pulmonary or spine tuberculosis, response to antibiotic treatment).

Sacroiliitis as a clinical feature of spondyloarthritis was excluded from this study. The combination of fatigue, anorexia, weight loss and pallor or the presence of at least three of these symptoms was considered as an alteration of the general condition. Each patient has been submitted to pelvis radiography, a complete blood count, measurement of the erythrocyte sedimentation rate, a retroviral serology. Fever was defined as a temperature above 37.5°C and leukocytosis defined as a leukocytic count > 11,000/ml. Erythrocyte sedimentation rate (ESR) greater than 20 mm in the first hour was considered to be high. No patient has been subjected to bone scan or magnetic resonance imaging (MRI) due to the absence of scintigraphy and MRI in Togo at the time of the study. In case of underlining of a given infectious entrance, a swab has been done in view of a cytological and bacteriological test. Data analysis was performed by using SPSS software for Windows (Version 17.0).

3. Results

Of the 2995 patients admitted over the last 21 years, 359 suffered from infectious arthritis, and 18 cases suffered from infectious sacroiliitis (5%). The mean age at admission of those 18 patients (seven men, eleven women) was 34.22 ± 13.5 years while the mean disease duration of 22.05 ± 41.9 days. The onset of the symptoms was essentially sudden in 14 patients (77.8%) and insidious in the remaining four (22.2%).

The involvement of the sacroiliac joint was essentially unilateral (n = 17), with the left side involvement in 57.9% of cases. The site of the pain was varied; the buttock was the most common site of the pain (n = 14), although psoitis groin pain (n = 2), low back pain (n = 1) and hip pain (n = 1) were also observed. The pain was essentially inflammatory in 16 patients (88.9%) and irradiated to the thigh in 14 (77.8%). Fever was observed in 16 patients (88.9%) with the highest temperature reaching 38.5°C in eight patients (Table 1). A loss of weight has been identified in 11 patients (61.1%). The infectious gate has been found in 15 patients (88.3%) with a urinary route in 7 patients (38.9%). Five patients (27.8%) were in the post-partum period. The infectious sacroiliitis was associated with an infectious spondylodiscitis in three patients (16.7%). Fifteen patients (83.3%) had concurrent infectious diseases.

The pain increased subsequently to a monopodal pressure and usually provoked limpness in 12 patients (66.6%). The direct pressure of sacroiliac joint was painful in 14 patients (77.8%). The ESR was high in 13 patients (72.2%) ranging from 15 to 115 mm/1st hour and a mean of 78.83 ± 15.21 mm/1st hour. Leukocytosis was observed in 12 patients (66.7%) ranging from 11,400 to 17,000/ml.

Of the 18 patients, infection was certain and the pathogenic agents were isolated in eight cases; Staphylococcus aureus in 7 and Mycobacterium tuberculosis observed in one patient. Infection was probable (M. tuberculosis) in other patients. Pathogenic agents were isolated from other sites by means of cytobacteriological examination of vaginal sample (n = 5), urine (n = 2), sputum (n = 1) or puncture of the Psoas muscle (n = 1). Of the 12 patients submitted to retroviral serology, four were infected with human immunodeficiency virus (HIV), while the other eight were healthy. Those four
HIV-infected patients suffered from sacroiliitis caused by a pyogenic microorganism.

The standard X-ray conducted at the onset of the symptoms was abnormal in 12 patients. The multiple bony erosions and sclerosis of the banks of the sacroiliac joint were the main radiographic lesions observed (Figs. 1 and 2). The abdomino-pelvic CT scan that was performed in four patients revealed likely infectious arthritis of the sacroiliac joint in all patients and a Psoas abscess in two. None of our patients have associated septic endocarditis or retroperitoneal abscess.

Evolution was favorable in all patients under prolonged antibiotic therapy. The mean antibiotic therapy duration was $3.25 \pm 3.1$ months with a range from 6 weeks to 12 months. Anti-tuberculosis protocol was associated: Isoniazid (5 mg/kg/day); Rifampicine (10 mg/kg/day); Pyrasinamide (30 mg/kg/day) and Ethambutol (25 mg/kg/day) for 2 months and Isoniazid (5 mg/kg/day) and Rifampicine (10 mg/kg/day) for 10 months. Followed up 6 months later the patients improved well without sequelae.

### Table 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Infectious sacroiliitis (18 cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Percentage</td>
<td></td>
</tr>
<tr>
<td><strong>Type of onset:</strong></td>
<td></td>
</tr>
<tr>
<td>Sudden</td>
<td>14 77.78</td>
</tr>
<tr>
<td>Insidious</td>
<td>04 22.22</td>
</tr>
<tr>
<td><strong>Nature of pain:</strong></td>
<td></td>
</tr>
<tr>
<td>Inflammatory</td>
<td>16 88.9</td>
</tr>
<tr>
<td>Mechanical</td>
<td>02 11.1</td>
</tr>
<tr>
<td><strong>Sacroiliac joint involvement:</strong></td>
<td></td>
</tr>
<tr>
<td>Unilateral</td>
<td>17 94.44</td>
</tr>
<tr>
<td>Bilateral</td>
<td>01 5.56</td>
</tr>
<tr>
<td>Alteration of general condition</td>
<td>16 88.89</td>
</tr>
<tr>
<td>High fever ($\geq 38.5^\circ$)</td>
<td>08 44.44</td>
</tr>
<tr>
<td>Leukocytosis ($WBC &gt; 11,000/ml$)</td>
<td>12 66.66</td>
</tr>
<tr>
<td>Elevated ESR ($\geq 20$ mm/1st hour)</td>
<td>13 72.22</td>
</tr>
<tr>
<td>Pathogenic agent isolation</td>
<td>08 44.44</td>
</tr>
<tr>
<td>HIV infected patients</td>
<td>04 22.22</td>
</tr>
<tr>
<td>Radiological lesions of infectious arthritis</td>
<td>12 66.66</td>
</tr>
</tbody>
</table>

WBC: white blood cells, ESR: erythrocyte sedimentation rate, HIV: human immunodeficiency virus.

**Figure 1** Multiple bony erosions and sclerosis of the banks of the sacroiliac joints in a 29 year old female suffering from postpartum infectious sacroiliitis.

**Figure 2** Erosions and sclerosis of the banks of the right sacroiliac joint in a human immunodeficiency virus infected patient suffering from infectious sacroiliitis.

### 4. Discussion

This study shows the relative scarceness of infectious sacroiliitis in rheumatologic consultations in Lomé. During the study period, 5% of patients admitted for infectious arthritis suffered from infectious sacroiliitis. There is no clinical, bacteriological, and radiological particularity. The staphylococcus aureus is the most frequent causal microorganism encountered. The relative scarceness of infectious sacroiliitis is probably due to the poor vascularization of this joint [2]. The demographic, clinical, bacteriological, and radiological characteristics of our patients are comparable to those found in other countries [16,17,19,20,23].

The mean age at the diagnosis in our series is 34.2 years which is almost the same as that found in the studies conducted in France [24] and in Tunisia [23]. One factor that predisposes to this is sometimes found: transplantation,
pregnancy or post-partum, infection by HIV [8,25,26]. In our series, the only favorable factors found were the infection by HIV and the post partum. Those results are not in agreement with other studies and in which toxicomaniac and corticotherapy [24]; diabetes mellitus and ulcerative colitis [23] have been the dominant risk factors. The time from the beginning of appearance of clinical signs and hospitalization was long in the olden series [27,28]. In those series the mean disease duration till diagnosis could reach 6 months [27] or even 19 months [28]. In our series the mean disease duration till diagnosis was 25 days which is not far from the one found in recent series [2,11,29,24–26].

The onset of the symptomatology was most of the time acute in the pyogenic sacroiliitis and more usually insidious in the sacroiliitis tuberculosis [28], thus explaining the two cases with insidious start and 14 with a brutal start in our series. The pain is most of the time located on the bottoms, but also at the inguinal fold or at the lower lumbar spine [11,28]. Radiation of pain to the leg is frequent, and most of the time taking the form of a truncated sciatic [27], found in 14 cases in our series, and three cases in the series of Hermet et al. [24]. In general, the infectious sacroiliitis is unilateral, even though bilateral cases have been reported, with different types of bacteria [1,2,11]. This is found in our study with bilateral reach in one case. Fever is most common in our series. In the literature the presence of fever is variable [8,11]. The pain increased subsequently to a monopodal pressure and usually provoked lameness [29]. In our series the ESR was elevated remarkably in 72.2% of patients, while in the series of Hermet et al. [24] it was high in all the patients. Plain radiography has known limitations mainly due to poor sensitivity in the early onset of the disease. The radiographic lesions are not likely to appear until several weeks after the onset of infection [29,30]. Thus explaining the absence of radiological signs in some of our patients in which the radiography had been realized in a relatively short time-limit.

In the present study, there was an associated Psoas abscess in two patients as frequently reported in other series on pyogenic sacroiliitis [11,31,32]. The scarcity of complications in our series is due to the absence of new diagnostic techniques. The Staphylococcus aureus was the main etiologic bacterial agent identified in our series. This microorganism is the most common causative agent in all series reported [2,11,27]. Other etiologic agents such as Streptococcus pneumoniae [33], group B and A Streptococcus [34] and Salmonella species [35] should be considered in patients with risk factors such as the immunocompromised children and younger age [36]. The duration of antibiotic therapy ranged from 6 weeks to 12 months in our study. The duration of antibiotic therapy is variable according to other studies. No consensus exists as to the duration of antibiotic therapy in infectious sacroiliitis [11,37].

A rigorous interpretation of the results of this study compels to take into account the biases essentially associated to the mode of selection of the patients and the absence of scintigraphy and MRI in Togo at the time of the study. The study included only the hospital inpatients admitted to the rheumatology department thus constituting a bias making it difficult to generalize our results. Thus, a prospective multicenter study is needed to better study the characteristics of infectious sacroiliitis. Diagnosis of infectious sacroiliitis has been difficult in this study because of the absence of newer diagnostic techniques such as bone scanning, and MRI.

In conclusion, infectious sacroiliitis is relatively scarce despite the importance of the osteo-articular infections in the Black Africa and there is no clinical, bacteriological, and radiological particularity. Diagnosis of infectious sacroiliitis and its complications is difficult to establish due to the absence of newer diagnostic techniques such as bone scanning and MRI which aid in an earlier diagnosis.

Conflict of interest

The authors have no conflict of interest.

References

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