SALMONELLA ENTERITIDIS BACTEREMIA WITH SEPTIC ARTHRITIS
OF THE SACROILIAC JOINT IN A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS
Case Report and Review of the Literature

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ABSTRACT : An 18-year-old female presented with a ten days history of high grade fever, chills and pain of the left sacroiliac joint. The patient has systemic lupus erythematosus (SLE) and is on chronic immunosuppressive therapy (steroids, antimalarial and antime-tabolites). Imaging of the left sacroiliac joint revealed inflammation. Blood cultures and an aspirate of a small gluteal abscess that she developed later grew Salmonella enteritidis resistant to nalidixic acid. The patient was treated conservatively with eight weeks of IV ceftriaxone and is currently asymptomatic. First case of SLE with this complication to be reported from Lebanon and treated conservatively, this communication deserved publishing together with a literature review.

INTRODUCTION

Systemic lupus erythematosus (SLE) is a chronic inflammatory condition associated with systemic features and multiple organ involvement. Thus, these patients are prone to a variety of infections and complications [1]. Other than the disease flare, the differential diagnosis of a febrile patient with SLE and arthritis includes infection with different pathogens including Salmonella spp; Salmonella is endemic in our region [2-3]. The non-typhoid Salmonella (NTS) infections and their subsequent complications in these patients have been the most prevalent [4]. Septic arthritis is a known complication of NTS bacteremia mostly involving the hip, knees, and ankles [5]. The NTS bacteremia involving the sacroiliac joint is a rare complication in these patients [5]. Sacroiliac joint infection usually necessitates a combination of medical and surgical treatment [6-7]. The mainstay of treatment of septic arthritis is regular aspirations, surgical drainage or arthroplasty along with antimicrobial therapy [2, 4]. However, in certain situations where access to the joint is difficult, more conservative options like intravenous antibiotic therapy or CT-guided drainage are chosen. With prompt treatment, clinical improvement is expected [2, 4]. We report a case of NTS sacroiliac joint infection in a patient with SLE managed medically without surgery.

CASE

An 18-year-old female presented in May 2010 to the emergency room with a ten days history of high grade fever with no focal complaints except for pain in the left hip area radiating to the corresponding lower extremity with inability to move the left hip because of pain. She did not report having any suspicious food intake and did not travel prior to her illness. The patient was diagnosed with SLE since the age of twelve and was maintained on prednisone 5 mg for more than one year, hydroxychloroquine 200 mg daily and methotrexate 10 mg weekly. Upon presentation to the emergency room, she was febrile (38.5 °C), tachycardic, hypotensive and the physical exam revealed an old systolic murmur grade 3/6 and tenderness of the left sacroiliac joint with decreased range of motion of the hip flexion. Laboratory tests showed anemia with a hemoglobin of 7.9 mg/dl; a WBC of 4000/µl with 89% neutrophils, and platelet count of 120,000/µl. Her creatinine was 1.7 mg/dl, with normal urine analysis and a normal chest X-ray. Blood cultures (BACT ALERT BioMerieux, France) were taken and the patient was started on moxifloxacin 400 mg per day, with a stress dose of hydrocortisone. Computed tomo-
Weinberger et al., the most commonly reported infection among patients with and without immunosuppressive state and EFI with NTS bacteremia with EFI. These factors [3, 5, 12] addressed the risk factors associated with NTS bacteremia with EFI. These factors [3, 5, 12] included: malignancy (23.6%-36.4%), diabetes mellitus (29.5%), immunosuppressive conditions, chronic kidney diseases, atherosclerosis and hypertension (27.9%-69.1%), HIV (18.6%-20%), connective tissue diseases (15.5%) among which 80% have SLE, age > 65 years, gastrectomy, chronic lung diseases, rheumatoid arthritis, amyloidosis, immunosuppressive therapy (steroids, cytotoxic chemotherapy), leukemia and lymphoma, and thalassemia [2, 5, 10, 12]. Our patient had a couple of these risk factors, namely: SLE, and chronic immune suppressive therapy. The EFI (30.9% to 39.5%) encompass a wide range of body sites [5, 10, 12]. In our case, the sacroiliac joint together with the gluteal area were the involved extra-intestinal focal sites. An association between the immunosuppressive state and EFI with Salmonella spp., was noted by some authors [13-14]. Others, however, did not find a statistically significant difference in Salmonella infection among patients with and without immunosuppressive therapy (27.8% versus 36.8%) [5, 10]. In a review by Weinberger et al., the most commonly reported Salmonella serotypes involved in bacteremia were: S. enteritidis (22.9%), S. typhimurium (20.1%), S. hadar (12.9%), S. virchow (12.2%) and S. infantis (6.9%) [11]. S. enteritidis and S. typhimurium were more prevalent with extreme of ages (< 2 years and > 60 years). In relation to children vs adults, Salmonella bacteremia was due to gastroenteritis in children and it was primary in adults. The most common serotype isolated was S. enteritidis in adults, and S. virchow in children [12]. S. enteritidis was also most commonly recovered from immunosuppressed (72%) vs immunocompetent patients (21.1%) (p > 0.05) [10]. With respect to SLE, the association with NTS infection has been studied. Hsu et al. [14] found a positive correlation between SLE and primary bacteremia with NTS. As reported by Chen et al. [5], SLE patients constitute 80% of the patients with connective tissue diseases who had NTS bacteremia. Moreover, in a hospital-based review of Gram-negative bacteremia, SLE was the most frequent underlying chronic disease [15]. Of these, the commonest bacterium was Salmonella (31.6%, 6 of 19) and SLE patients accounted for 20% of all non-typhoidal salmonellosis. When the joints were involved as EFI, infection of the hips was the most common (26 patients), followed by knees (11 patients), ankles (3 patients), sacroiliac joints (3 patients), wrists (1 patient), and elbows (1 patient) [4]. The predisposing risk factors for SLE patients to acquire NTS bacteremia and EFI include: high SLE disease activity index, high dose of immunosuppressive agents, lupus nephritis, anemia, and bone avascular necrosis. The most common Salmonella spp. serotypes isolated from these SLE patients were type B and D, and S. enteritidis was the most common pathogen causing septic arthritis in younger SLE patients [2, 4, 15-16]. The reverse association between recovery of Salmonella spp. and immune suppression was studied by Brown and Eysyn [17]. This was based on analysis of 82 cases of NTS bacteremia presenting to St. Thomas’ Hospital between 1970 and 1999. The recovered salmonella were: S. enteritidis (48%), S. typhimurium (27%), and other serotypes (25%). Among these 82 patients, 59% had underlying immunosuppression, 80% had an extra-intestinal focus, and 80% of those with no focus had underlying immunosuppression. Thus, their advice was to search for immunosuppressive conditions in patients who present with NTS bacteremia without gastroenteritis [17]. The treatment of septic sacroiliitis consists of adequate antimicrobial coverage with or without surgical interventions. Antimicrobial treatment consists of four to six weeks of intravenous (IV) antibiotic therapy [7, 18-19]. Indications for surgical intervention include abscess formation, osteomyelitis, sequestrum of necrotic bone, and failure to respond to IV antibiotic therapy [19]. Most of the reports of septic sacroiliitis indicated the use of intravenous antibiotics with either abscess aspiration or debridement of the joint to get clinical improvement [7, 18-21]. Conservative management was reported in cases with intravenous antibiotics given for 6 and 8 weeks [6-7]. Our patient improved on IV antibiotics and aspiration of the soft tissue abscess without aspiration of the joint.
Contrast-enhanced MRI with subtraction technique may be useful for early detection of active sacroiliitis [22]. STIR sequences alone are sufficient to qualify and quantify an active sacroiliitis [23]. A contrast-enhanced MR sequence is beneficial to ensure maximum diagnostic confidence when patients with early sacroiliitis are examined. The MRI of sacroiliac joint in our patient (Figure 1) did not show any sequestrum, necrosis or osteomyelitis, so the decision to treat conservatively was taken.

CONCLUSION

Septic arthritis in SLE patients should be considered in the differential diagnosis of a disease flare. When it occurs in immunocompromised patients, Salmonella should be suspected. Prompt identification of the causative pathogen should be sought in order to initiate early and appropriate antibiotic therapy.

REFERENCES

5. Chen PL, Chang CM, Wu CJ et al. Extraintestinal focal infections in adults with nontyphoid Salmonella bac-