

Case Report

Acute Brucella Sacroiliitis: Clinical Features

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Abstract: Although back pain is very common, the differential diagnosis may sometimes be very difficult. Both inflammation and infections of spinal or sacroiliac joints are examples of such causes. We report three cases of brucella sacroiliitis resembling acute low back pain or lumbar disc herniation. All patients had had a recent infection and were referred complaining of acute back pain with a suspicion of lumbar disc herniation. The complaints of all patients reduced dramatically after proper medication. Radiographs of all patients and bone scans of two patients revealed sacroiliitis. One of the patients was positive for HLA-B27; in the other two patients HLA-B27 could not be determined.

Keywords: Brucellosis; Sacroiliitis

Introduction

Back pain is very common in the Turkish population. The causes of back pain have a wide spectrum, and the differential diagnosis is sometimes very difficult. Physicians usually focus on the differentiation of inflammatory and mechanical problems, and the patients worry about disc herniations. Tuberculosis and brucellosis are still a growing problem in developing countries. These infectious agents cause many musculoskeletal symptoms, resembling both inflammatory and discogenic pain. Therefore, physicians should always consider infectious agents in the differential diagnosis of back problems. Brucellosis is a zoonosis endemic throughout the world. Humans acquire brucellosis by handling contaminated animal products or by eating dairy products made of unpasteurised milk. Of the patients

with brucellosis, 20–85% are suffering from rheumatic complaints, including spondylitis and sacroiliitis, as well as paraspinal abscesses, which cause severe back pain [1–4]. Brucella spondylitis was first described by Kulowski and Vinke in 1937 and is one of the important complications of Brucellosis. The incidence of brucellosis in Turkey is reported as 0.59 per 100000 population per annum [5].

We report three cases of brucellosis presenting with acute low back pain, who were referred to us with a prior diagnosis of acute lumbar disc herniation and a positive straight leg raising (SLR) test.

Case Reports

Case 1

A 21-year-old young man had developed moderate back pain 3 months previously, and had had some relief with non-steroidal anti-inflammatory drugs (NSAIDs). His back pain had worsened over the past 15 days, with radiation to the right hip joint, and he was unable to walk or sit. Brucellosis was endemic in his village. On physical examination, spinal flexion was 50% limited and very painful. Right hip flexion was limited at 100° and both internal and external rotation were 50% limited and very painful. SLR could not be tested because of pain at the right side and was positive at 40° on the left side. Sacroiliac (SI) joint stress tests were painful at the right side. He did not have any neurological deficit. Pain was increased with coughing and hiccups, while morning stiffness lasted about 1 h. He had severe night sweats and mild fever in the afternoon. An X-ray examination of the sacroiliac joints revealed right-sided grade II sacroiliitis. Bone scanning displayed right sacroiliitis. A Rose Bengal test for brucellosis was positive and a Wright agglutination test revealed 1/800 positivity. The erythro-

cyte sedimentation rate (ESR) and c-reactive protein (CRP) were 45 mm/h and 19 mg/dl respectively. HLA-B27 could not be determined. A haemogram and urinalysis were both normal. The patient was diagnosed with sacroiliitis due to brucellosis, and he was started on antibiotic therapy with doxycycline and rifampicin along with NSAIDs.

Case 2

A 22-year-old young man was referred to our outpatient clinic with very intense right hip pain. He complained of fever, sweating and night pain restricting all lumbar movements in the bed and on walking. He could not move his right leg in any direction. Morning stiffness lasted more than 2 h. Lumbar movement in all directions was painful and restricted by up to 50% of normal. Right hip flexion was restricted at 100°. SLR could not be performed because of severe pain. A Schober test was 3.5 cm and SI joint stress tests were positive bilaterally. A neurological examination was normal. The ESR was 80 mm/h, CRP 37 mg/dl, a Rose Bengal test for brucellosis was positive and a Wright agglutination test revealed 1/800 positivity. A radiograph of the sacroiliac joints revealed grade I sacroiliitis on the right side while bone scanning displayed sacroiliitis on the right sacroiliac joint. HLA-B27 was positive. The haemogram and urinalysis were normal. After beginning NSAID and antibiotic therapy with rifampicin and doxycycline, his symptoms improved with marked pain relief, and morning stiffness decreased in terms of duration and intensity. This patient was re-examined 2 months later. An X-ray examination of the sacroiliac joints revealed further deterioration. The patient was in a better clinical status and had no morning stiffness or fever. Functionally, he complained only of slight pain on vigorous motion.

Case 3

A 21-year-old young man was referred to our clinic with acute back pain of 2 weeks' duration, first beginning in his right hip. His pain aggravated with anterior bending and hiking. There were no genital, oral, dermal or intestinal complaints. He complained of night fever

following intensive sweating. Morning stiffness lasted about 1 h. Lumbar movement was painful in all directions and restricted. The Schober index was 2 cm and SLR was restricted bilaterally at 35°. He reported a hypoaesthesia on the right side below the L2 dermatome; a neurological examination was otherwise normal. Hepatomegaly of 2 cm was detected. Whole blood and urinalysis were normal, ESR 81 mm/h, CRP 9 mg/dl, Rose Bengal test positive, Wright agglutination 1/400 and alkaline phosphatase slightly raised. Following treatment with NSAID, doxycycline and rifampicin, his symptoms and complaints improved dramatically. A radiograph revealed a grade II sacroiliitis on the right side. Sacroiliac computed tomography revealed slight sclerosis on the right iliac side. HLA-B27 could not be determined.

Discussion

Brucella sacroiliitis, whether septic or reactive, may cause intensive back pain radiating into the thigh. It may mimic acute low back pain or lumbar disc herniation [4]. All patients reported in this article had been referred to our department with the preliminary diagnosis of lumbar disc herniation or acute lumbar strain. The intense back pain prevented a proper spinal examination, but neurological examination revealed no disease other than a subjective hypoaesthesia restricted to the L2 dermatome, which is an unusual location for disc herniation. Although a positive SLR test with *brucella* spondylitis is reported [5], it seems to be a finding in *brucella* sacroiliitis as well.

The increased ESR, CRP and sweating as well as fever episodes directed us to investigate an infectious aetiology. Group agglutinins for typhoid fever were normal. The chest radiographs revealed no disease. There was no urinary infection or any other focus of infection. The Rose Bengal test, the screening test for brucellosis, was positive in all patients. Wright agglutination tests revealed 1/400 to 1/800 positivity. No patient had spinal involvement. The diagnosis of sacroiliitis was based on the clinical features and radiographic-scintigraphic findings (Table 1). Normally,

Table 1. Clinical and laboratory findings of the patient

	Case 1	Case 2	Case 3
Duration of complaints	15 days	3 weeks	2 weeks
Hip flexion	<100°	<100°	Passively free, painful
SLR	Could not be tested	Could not be tested	35° bilaterally
SI joint stress tests	Ipsilateral positive	Positive bilaterally	Ipsilateral positive
X-ray	Right-sided grade II sacroiliitis	Right-sided grade I sacroiliitis	Right-sided grade II sacroiliitis
Bone scanning	Right sacroiliitis	Right sacroiliitis	CT → sacroiliitis
Rose Bengal test	+	+	+
Wright agglutination test	1/800	1/800	1/400
ESR (mm/h)	45	80	81
CRP (mg/dl)	19	37	9
HLA-B27	Not determined	Positive	Not determined

SLR, straight leg raising; SI, sacroiliac; CT, computed tomography; ESR, erythrocyte sedimentation rate; CRP, C-reactive protein.

brucella sacroiliitis has no distinctive symptomatology other than sacroiliitis, but it is characterised by an abrupt onset and very intense pain. This type of sacroiliitis causes relatively marked functional disability, especially early in the disease.

Musculoskeletal symptoms are one of the most frequent complications of brucellosis [1–5,6,7]. Nearly all patients complain of arthralgias. Epidemiologic studies report that the incidence of sacroiliitis is between 12% and 45% of musculoskeletal complications, less so than brucella spondylitis [4]. The other articular complications are peripheral arthritis and extra-articular rheumatism. Sacroiliitis is usually unilateral and sometimes in combination with spondylitis [2]. Alarcon and Monther report that sacroiliitis is seen mostly in young people with acute brucellosis [2,7]. This finding is consistent with our cases. Therefore, brucellosis should be considered as one of the causative agents of acute sacroiliitis. Monther et al. [2] reported that arthritis was one of the main presenting clinical pictures of brucellosis. All of his patients with articular complications had arthritis for the first time within 1 week before admission to hospital. The main complaint of patients referred to our department was severe low back pain. None of them complained of either fever or sweating during the first admission.

Though it has been reported that brucella spondylitis and sacroiliitis may be misdiagnosed as lumbar disc herniation, no reports define the clinical picture of the patients. The clinical picture of our patients resembled acute back pain or lumbar disc herniation. This is consistent with the findings of Monther et al. [2], who had one patient with sacroiliitis who was erroneously diagnosed as having lumbar disc herniation, and Tekkök et al. [5], who operated on three of their patients with spinal brucellosis.

We have diagnosed seven cases of brucella sacroiliitis in the past year. The mean duration of diagnosis of our patients was 3 weeks. This may be the reason for the effectiveness of the therapy without any disease progression. Although it is not clear whether it is reactive or infectious, all patients responded well to therapy with doxycycline and rifampicin [4]. This may suggest a focal infective source in the sacroiliac joint, but it cannot rule out a reactive pattern, as suggested in the literature [8]. In one of our patients, HLA-B27 was found to be positive. Sacroiliitis of this patient progressed over the past 2 months, perhaps as a result of a reactive pattern. The other two patients could not be tested for HLA-B27. We are planning a prospective study on patients with brucellosis to investigate the interrelationship between HLA-B27 and sacroiliitis.

References

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