Fluoroscopy-guided Intra-articular Sacroiliac Joint Steroid Injection for Sacroiliitis in Ankylosing Spondylitis: A Case Report

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ABSTRACT

Sacroiliitis, a condition commonly seen in ankylosing spondylitis, is well known to be one of the main pain generators of low back pain, which may result in difficulty with walking. A 20-year old male with history of ankylosing spondylitis presented to the University Hospital of the West Indies, Physical Medicine and Rehabilitation Clinic, with a two-year history of right buttock, low back and groin pain. Radiographic evaluation revealed increased sclerosis and erosive changes in bilateral sacroiliac joints, right greater than left. Right intra-articular sacroiliac joint steroid injection was administered under fluoroscopy guidance. Post-injection visual analogue pain scale (VAS) score with activity improved from 8 to 1 and Oswestry Disability Index improved from 40% moderate disability to 16% minimal disability. The patient's overall assessment was 95% perceived improvement in pain. This case report illustrates the effectiveness of intra-articular sacroiliac joint steroid injection in treating sacroiliitis in ankylosing spondylitis.

Keywords: Ankylosing spondylitis, fluoroscopy-guided, physical medicine and rehabilitation, sacroiliitis, steroid injection

Infiltración Intraarticular de Esteroides en la Articulación Sacro-ilíaca Guiada por Fluoroscopia para la Sacroiliitis en la Espondilitis Anquilosante: Reporte de Caso

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RESUMEN

La sacroilitis, una condición comúnmente vista en la espondilitis anquilosante, es bien conocida por ser uno de los principales generadores de dolor lumbar, que puede ocasionar dificultad para caminar. Un paciente de 20 años de edad con una historia de espondilitis anquilosante, acompañada de dos años de dolor en la nalga derecha, la región lumbar, y en la ingle, acudió a la Clínica de Rehabilitación y Medicina Física del Hospital Universitario de West Indies. La evaluación radiográfica reveló esclerosis aumentada y cambios erosivos en la articulación sacroilíaca bilateral, mayor en el lado derecho que en el izquierdo. Con la ayuda de la fluoroscopia para guiar el procedimiento, se le administró al paciente una inyección intraarticular de esteroide en la articulación sacro-ilíaca, al lado derecho. La puntuación de la escala analógica visual del dolor (VAS) tras la inyección mejoró de 8 a 1, y el Índice de Discapacidad de Oswestry mejoró de una discapacidad moderada del 40% a una mínima discapacidad del 16%. La evaluación general del paciente fue de un 95% en cuanto a la percepción de la mejoría del dolor. Este reporte de caso ilustra la eficacia de la inyección intraarticular de esteroides de la articulación sacroilíaca para el tratamiento de la sacroiliitis en la espondilitis anquilosante.

Palabras claves: Espondilitis anquilosante, fluoroscopia guidada, rehabilitación y medicina física, sacroiliitis, inyección de esteroide

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INTRODUCTION

A fundamental clinical feature of ankylosing spondylitis (AS) is sacroiliitis, which is inflammation of the sacroiliac joints. It is characterized by back pain and stiffness affecting the sacroiliac joint and axial skeleton (1–3). The sacroiliac joint is commonly the first joint involved and may also be the most painful

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symptomatically. While the aetiology of AS is unknown, genetic and environmental factors play a major role. The prevalence of AS is approximately 0.1–1% in the general population (4, 5) and onset of this potentially debilitating disease may occur as early as in childhood. However, onset is usually in the second and third decades of life and affects men two to three times more often than women (6, 7). Non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroid and disease-modifying antirheumatic drugs (DMARDs) have been used to treat patients with AS (2) and fluoroscopy-guided intra-articular sacroiliac joint (IASIJ) steroid injection has been incorporated in the treatment of sacroiliitis (8, 9).

CASE REPORT

A 20-year old male gave a history of having undifferentiated inflammatory type cervical, thoracic and lumbar spine pain as well as right sacroiliac joint pain, rib/costochondrial pain and variable peripheral arthritis affecting the right hip, ankles, right rotator cuff and bilateral epicondylitis since 2010. He was subsequently diagnosed with AS in 2012. He then presented to the University Hospital of the West Indies (UHWI), Physical Medicine and Rehabilitation (PMR) clinic with a two-month flare-up of pain in the right groin, right buttock and low back. His presenting visual analogue scale (VAS) pain score on the 11-point Likert scale was 4/10 in the right groin which intensifies with walking (8/10), and right low back pain (5/10) which worsens to 7/10 on waking in the morning. He was evaluated as having an Oswestry Disability Index of 40% moderate disability. Functional impairment assessment using Bath Ankylosing Spondylitis Functional Index (BASFI) was 4.9 out of 10 and active disease evaluation using the Bath Ankylosing Spondylitis Disease Activity Index was 7.3 out 10.

He was being treated by a rheumatologist and current medication included sulfasalazine and non-steroidal anti-inflammatory medication. He had also been treated with Actemra (tocilizumab) which controlled the fatigue and generalized inflammatory symptoms. However, his pain persisted. He was placed on amitriptyline and paroxetine for depression. Physical therapy was also incorporated in his treatment and he was also lifting light weights at the gym a few days per week. On examination, he was found to walk with a normal gait. He was able to heel and toe walk, but heel walking worsened the right low back pain. Bilateral lower extremities reflexes were 3^+ and symmetrical. His strength was normal grade 5/5 in both lower extremities and sensation was intact. Straight leg raise was negative. Slump sit test was positive on right but negative on the left side. Pelvic anterioposterior glide and pelvic compression tests were negative while Patrick's FABERE (Flexion, Abduction, External Rotation and Extension) and pelvic distraction tests as well as Gaenslen's sign were positive on the right. There was tenderness on palpation over the right sacroiliac joint.

Radiological findings included: magnetic resonance imaging (MRI) which showed a normal lumbosacral spine and pelvis/hips X-ray which showed bilateral sacroiliitis with evidence of subchondral sclerosis and marginal erosive changes right greater than left (Figure). He was assessed as having sacroiliitis on the right greater than on the left, with the right being symptomatic.

Figure: Pelvic X-ray showing subchondral sclerosis and marginal erosive changes on the right greater than on the left.

Fluoroscopy-guided right sacroiliac joint steroid injection was done. The technique used had the patient position prone. The region overlying the inferior aspect of the right sacroiliac joint was identified using superficial landmarks and fluoroscopy. Under sterile condition, the area over the right sacroiliac joint was cleaned with betadine and draped. A 22-gauge needle was used to anaesthetize the skin using 4 ml of 1% lidocaine. Using fluoroscopic guidance, a 22-gauge quinke needle was used to enter the right sacroiliac joint from below. One millimetre of Omnipaque (iohexol) was used to confirm an intra-articular flow pattern and there was no vascular uptake. He was then injected with 1 ml of triamcinolone 40 mg/ml and 0.8 ml of 1% lidocaine. Pre-procedure VAS at rest was 4/10 and with activity, 6/10. Post-procedure VAS at rest was 0/10 while with activity, 2/10.

At follow-up within a week, the patient reported 95% improvement in the right buttock pain over the sacroiliac joint (SIJ). He rated the right buttock pain VAS of 1/10. He still had low back pain and also complained of right shoulder pain. His Oswestry Disability Index after IASIJ steroid injection was 16% which is rated minimal disability as compared to 40% before injection which is moderate disability. He was also prescribed a sacroiliac joint belt to be worn daily and a pelvic stabilizing rehabilitation programme was outlined.

DISCUSSION

Ankylosing spondylitis is a progressive inflammatory seronegative autoimmune disease which causes inflammation of the spine and sacroiliac joints, resulting in axial skeleton rigidity and if left untreated can advance to fusion of the spine *ie* Bamboo spine (10, 11). Sacroiliitis is regarded as a hallmark in diagnosing AS (3). Other clinical presentations include positive HLA-B27 test, radiological findings (including sclerosis or erosion of the sacroiliac joint), low back pain, peripheral arthritis and extra-articular involvement – such as uveitis, and cos-

tosternal involvement restricting chest expansion – may also occur (2, 6).

The prevalence of AS is highest in the northern European countries, whereas persons of Afro-Caribbean descent have the least (12). The use of NSAIDs and fluoroscopy-guided steroid injection is widely used to treat sacroiliitis, along with physical therapy (8, 9). It is to be noted that in the index case, the symptoms of low back pain persisted post IASIJ injection; this is not surprising as the treatment is localized to the site injected. Further treatment must be incorporated for the alleviation of the lumbosacral spine pain. In this case, NSAIDs and DMARDs gave minimal relief of the patient's sacroiliac joint pain, and intervention with fluoroscopy-guided steroid injection for intra-articular capsule injection gave 95% improvement in the patient's perceived pain, a decrease of VAS from 6/10 with activity to 1/10. Additionally, Oswestry Disability Index improved from 40% moderate disability to 16% minimal disability. This is consistent with a study done by Karabacakoglu *et al*, who found that fluoroscopy-guided intra-articular corticosteroid instillation in the SIJ may be regarded as an effective therapy since there was a 90.9% (20 of 22 joints) reported improvement (13).

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