

Postpartum Osteitis Pubis Treated Successfully with Shockwave Therapy: A Case Report

Natalya Fazylova DNP, FNP-BC^{1*} and Arkady Aaron Lipnitsky DC, DACRB, CICE²

¹Doctor of Nursing Practice, Associate Professor, City University New York, Long Island City, New York, USA

²Diplomate of American Chiropractic Rehabilitation Board, Director of Chiropractic and Rehabilitation at Pain Physicians NY, New York, USA

*Corresponding author: Natalya Fazylova, DNP, FNP-BC, City University of New York, Long Island City, NY, USA, E-mail: nfazylova@lagcc.cuny.edu

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Abstract

The purpose of this case study was to demonstrate that Extracorporeal Shockwave Therapy (ESWT) could be an adjunctive therapy for patients with postpartum osteitis pubis. Osteitis pubis is a painful, inflammatory condition that is difficult to handle without a comprehensive treatment method. A 26-year-old female patient with a notable condition of postpartum osteitis pubis participated in this case study. The treatment involved ESWT as a therapy for the patient's groin and pubic pain due to osteitis pubis. A comprehensive physical therapy regimen and exercises were implemented to augment the effect of shockwave treatment. The study identified the beneficial role of ESWT in treatment of osteitis pubis, which has not previously been mentioned and warrants further investigation. Further studies would help determine whether ESWT is a suitable adjunctive therapy for the treatment of osteitis pubis.

Keywords: Osteitis pubis; Extracorporeal shock wave therapy; Postpartum

Introduction

Osteitis pubis is a painful, inflammatory condition that is difficult to handle without a comprehensive treatment method. The pelvis and its structures such as the symphysis pubis, cartilage, pubic rami, musculotendinous and ligamentous pelvic structures are affected in osteitis pubis condition [1]. Osteitis pubis was originally described by Beer in 1924 [2], and has been mainly recognized as a chronic condition affecting predominantly athletes. Other predisposing factors such as urological and gynecological procedures, degenerative or rheumatologic conditions, and pregnancy could also contribute to the development of osteitis pubis [3]. Treatment modalities for this condition include several conservative options such as rest, physiotherapy, anti-inflammatory and anticoagulation therapy [1,4,5]. Surgery is indicated as a last resort, if other treatments are not successful.

Extracorporeal Shockwave Therapy (ESWT) is rapidly becoming a preferred treatment modality for various musculoskeletal conditions in recent years. Many studies suggest that ESWT can successfully treat pain and promote healing for patients with acute inflammation [6-8]. Therefore, we think that ESWT can be an adjunctive therapy for patients with osteitis pubis. ESWT is effective and has low risks compared to surgical intervention. In this report, we present a case of postpartum osteitis pubis that was treated successfully using ESWT.

Case Report

A 26-year-old female patient, who accepted to have her case information published, presented at Pain Management and Rehabilitation clinic with a complaint of a persistent groin pain often asymmetrical to the left side. The patient had a spontaneous uncomplicated vaginal delivery at 39 weeks of gestation with a live baby girl weighing 3,540 g three months ago. Six weeks postpartum,

the patient developed pain in lower abdominal area radiating to the groin. She described her symptoms as pain over the pubic region, shooting over the medial aspect of thigh and lumbar spine, morning stiffness was reported. The pain was sometimes felt on the bilateral groin area (L>R) and the perineal region. It was often dull and ache during rest but became sharp and shooting with walking, bending, getting up from sitting positions, walking up and down the stairs and other motion related activities. The pain prevented her from performing most of the required daily activities. She also reported a moderate to severe discomfort and pain in the pubic symphysis area during and after intercourse. The patient noticed that her pain subsided if she assumed a fetal position, lying on her right side with the pillow between her knees. She did not report any leg pain, numbness, tingling or weakness in the lower extremity, but stated that this pain was often accompanied by the pain in the lower part of the lower back (Sacroiliac joint) - always on the left side. The pain started gradually without any history of acute onset or trauma. The patient denied having pain or discomfort during pregnancy or labor.

The patient had insignificant past medical history and no history of previous surgery was reported. On observation, the patient stood with an antalgic forward lean with a slight right flexion. When comparing the right to the left side, the left foot and leg showed external rotation compared to the right. When observing posture, the patient stood with a pronounced anterior pelvic tilt with an exaggerated lumbar lordosis and a slight bilateral knee flexion. The spine showed a slight kyphosis at the mid and upper back, slouching and internal rotation at bilateral shoulders. Gait was observed and it indicated a minor left limp, an externally rotated left foot observed at a stance phase, and a Trendelenburg's sign noted during a mid-swing of the left lower extremity. As seen in Table 1, hip ranges of motion were within normal limits on the right side and limited on the left side. Orthopedic examination revealed groin pain with active adductor contraction against resistance. Active straight leg raise was negative on both sides and Thomas test indicated a painful tight right iliopsoas muscle. The Gillet test on the right side revealed ilial anterior rotation

hypermobility. Gaenslen’s test was positive on the left side with left leg appearing shorter on prone exam. Anvil, Ober’s, and Patrick’s/Fabere orthopedic tests listed in Table 1, were negative on the right side and positive on the left with a groin pain. The patient had noticeable difficulty with chair transfers as well as getting up on the examination

table due to pain. The patient was asked to rate her pain on the visual analog scale (VAS) and rated it a 7-8/10. Her total score on Oswestry Disability Index (ODI) was positive for 29/50 questions and equaled 58%, indicating moderate to severe disability and decrease in ADL functions.

Orthopedic tests	Initial Assessment		Post treatment	
	Right	Left	Right	Left
Active straight leg raise	Negative	Negative	Negative	Negative
Gillet test	Negative	Positive	Negative	Negative
Gaenslen’s test	Negative	Positive	Negative	Negative
Thomas test	Positive	Negative	Negative	Negative
Anvil test	Negative	Positive	Negative	Negative
Ober’s test	Negative	Positive	Negative	Negative
Patrick’s/Fabere test	Negative	Positive	Negative	Negative
HIP RANGE OF MOTION				
Flexion (Normal >120)	120°	100°	120°	120°
Extension (Normal 30)	30°	20°	30°	30°
Abduction (Normal >25)	25°	20°	25°	25°
Adduction (Normal >20)	25°	10°	25°	25°
Internal Rotation (Normal >25)	25°	20°	25°	25°
External Rotation (Normal >40)	40°	30°	40°	40°

Table 1: Range of motion (ROM) and Orthopedic tests

Results of the gynecological examination and laboratory studies were normal. A plain X-Ray of the pelvis revealed an 8 mm-widening gap at the symphysis pubis joint. The patient was therefore diagnosed with osteitis pubis. She subsequently began a therapeutic regimen of NSAIDs, rest, physical therapy exercise for four weeks and received intra-articular steroid injection. However, there was no improvement in the patient’s condition and she was not able to complete the rehabilitation program.

Treatment

ESWT was subsequently initiated as a therapy for the patient’s groin and pubic pain due to osteitis pubis. The patient received six sessions (two sessions per week for two weeks and one session per week for two weeks) of ESWT delivering 2,000 shockwaves per session of 0.2 mJ/mm² directed to the symphysis pubis. A comprehensive physical therapy regimen and exercises were implemented to augment the effect of shockwave treatment. The patient attended PT treatment sessions for a span of six weeks, twice per week. The following exercise protocol was setup to increase strength, endurance, stability and pain free mobility and improve functional mobility. All exercises were performed in a progressive manner, beginning with stretching and working toward more advanced exercises during the period of care. Exercise goals were to be accomplished for two sets of ten repetitions by the end of the six-week treatment period. During the period of treatment, the patient was closely monitored, form observed and

exercises adjusted and advanced depending on the progress and ability.

The initial acute pain that was rated 7-8/10 on VAS during the first evaluation began to decrease to a 5/10 on VAS after two weeks. Functional movement began to improve after the third week of care. Upon discharge after the sixth week of care, all functional tests remained at a score of two as muscle strength and endurance continued to be worked on but the patient was now able to perform all exercises independently and with good form, working toward performing functional movements without compensation. After the discharge, the orthopedic tests were re-evaluated and the results were all negative. Upon discharge after six weeks, the patient rated her pain a 1-0/10 on VAS and 1/50 or 2% on ODI and ambulation, transfers, stair negotiations and ADLs were no longer compromised.

Discussion

Osteitis pubis is a non-infectious inflammatory condition depicted by pain in the pelvis, radiating to the groin and abdomen. It is frequently a self-limiting condition [9-11]. The symptoms could arise between the first eight weeks after the onset of the condition. Symptoms of this condition could include a painful walk, a waddling gait and a painful hip movement. The imbalance between the adductor and abdominal muscles has been noted to cause Osteitis pubis [2]. This condition is linked to recurring traumas in the abdomen and adductor muscles. People engaged in sporty activities involving abrupt

change of movement are at more risk of getting Osteitis pubis. The weight imbalance on the pubic symphysis and insertional tendons can cause Osteitis pubis [4]. Research studies indicate that both internal and external factors could contribute to development of Osteitis pubis. Examples of internal factors are flaws of plantar support, irregularity in the lower limbs, and decreased mobility of ilio-psoas muscle. External factors include poor training in sports, wrong footwear and harsh playing conditions. This condition can also occur in pregnancy and postpartum due to extreme ligament laxity. The ligaments of the sacroiliac joint and symphysis pubis become loose during pregnancy due to the hormone relaxin, to allow for widening of the pelvic joints during the birthing process [12]. Conventional treatments for osteitis pubis include conservative treatments such as rest, exercise, physical therapy, medication therapy (NSAIDs, corticosteroids injections, anticoagulant therapy) as well as surgical approaches [13]. In the present case, the patient received conservative treatments and steroids injection at the symphysis pubis, but without significant relief of symptoms. The patient was not open to surgical approaches in this case due to invasive nature and possible complications. Therefore, an alternative treatment such as ESWT was utilized.

Extracorporeal Shock Wave Therapy (ESWT)

Extracorporeal shockwave therapy (ESWT) is one of the new treatment methods being utilized today to treat a wide range of musculoskeletal disorders. In 1996, German researchers suggested using ESWT for several conditions such as calcific tendinitis, lateral epicondylitis, plantar fasciitis and pseudo arthrosis [14]. Since then, ESWT has been successfully used to treat other conditions such as non-unions of long bones, ischemic heart disease, chronic diabetic ulcers, Peyronie's disease, osteoarthritis of the knee and spine fusion among others [6]. Mechanisms of action of ESWT are not clearly understood. However, several studies suggested that ESWT affects tissues at the cellular level. The study by Wang et al. states that ESWT accelerates perfusion to the ischemic tissues and stimulates regeneration of new blood vessels [6]. According to Zimmerman et al., ESWT reduces stiffness and tension of the muscles and decreases pain because of the reduction in the nonmyelinated fibers in myofascial pain syndrome [15]. A study conducted by Davis et al., states that ESWT improves blood supply to the tissues, which repairs and regenerates chronically inflamed tissues [15,16]. Although the present patient was diagnosed with postpartum osteitis pubis and present case is different from previously conducted clinical studies, we surmised that ESWT has anti-inflammatory and analgesic effect. Thus, we used ESWT to decrease inflammation, relieve pubic pain and promote rehabilitation for patient. A comprehensive exercise regimen in conjunction with ESWT was implemented to improve endurance, core and lower extremity strength and allow for a return to an active, pain free lifestyle that includes regular exercise in it.

The most important concentration of care for osteitis pubis is a comprehensive exercise plan after the initial elimination of acute pain. This particular patient responded extremely well to a conservative rehabilitation treatment. Specific biomechanical manipulations were performed for the restoration of optimum function. The patient received the following components of treatment: chiropractic manipulative therapy to cervical, thoracic, thoracolumbar, lumbar, left lumbosacral, left sacroiliac Joint, left ilio-lumbar regions. Additional treatments included manual therapy, myofascial release, joint mobilization, and soft tissue mobilization to the left hip, left TFL, left

piriformis, and bilateral hamstrings. Electrical stimulation to Lower back and left Hip was applied on IFC with heat for 15 minute.

Therapeutic exercise regimen was targeted to improve ROM of the left hip, and lumbar musculature, strength and flexibility of bilateral lower extremities, abdominals, and paraspinals, and trunk stability. The rehabilitation program focused on three key areas: Trunk Control, Activation of The Postural Muscles, and Accurate Proprioceptive Responses as well as continued improvement to areas exhibiting deficient ranges of motion. Neuromuscular reeducation consisted of both rocker board and wobble board along with exercises to develop balance, stability and endurance in the muscular structures of the affected joint(s). The outcome of this phase of treatment was focused on restoration of the biomechanical integrity of the injured connective tissues so that the stability of the joint is restored.

After six weeks of care, the patient was able to achieve these goals and was discharged with a comprehensive exercise program, a nutritional consultation and an active plan of care as a weekly routine.

Conclusion

In conclusion, six numbers of treatments with ESWT and a comprehensive exercise protocol improved groin pain from osteitis pubis. The beneficial role of ESWT in treatment of osteitis pubis has not previously been mentioned and warrants further investigations. Although it is difficult to draw significant conclusions from this case report, further studies would help determine whether ESWT is a suitable adjunctive therapy for the treatment of osteitis pubis.

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