



CASE REPORT:

Modified Cox® Flexion-Distraktion Spinal Decompression Therapy Assists In The Management Of Low Back And Pelvic Pain In A Pregnant Patient.

Post-Partum Sacroiliac Joint pain and instability managed with Cox® Flexion Distraction Therapy and a Functional Restoration Program.

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INTRODUCTION:

Sacroiliac joint (SIJ) pain and instability are common in post partum patients particularly in multipartite women. The female SIJ increases its motion and decreases its stability during pregnancy. (1) This hyper mobility or instability in combination with an increase in mechanical load can lead to pain due to ligamentous and joint injury. (1) Various factors such as presence of back pain before pregnancy, the presence of back pain during pregnancy, physically heavy work, and multiple pregnancy can predispose women to post partum back pain. (3) During pregnancy the hormone relaxin causes a “loosening” of the SIJ and symphysis pubis. (1) In biomechanical terms the SIJ is understood to have a “self-bracing” or “self locking” mechanism where the ridge and depression of the joint surfaces are aligned and maintained through support from ligamentous and muscular structures. (1) Altered position of these joint surfaces and failure of this “self locking” mechanism can lead to various sequelae of cascading events including joint in-stability and pain.

In this case we review the passive and active care of a post partum patient who achieved an excellent result using Cox® flexion distraction therapy.

PRESENTATION:

This case outlines the treatment of a 38 year old multipartite female presenting with sacroiliac joint pain and instability after the birth of her second child. She had received Cox® flexion-distraktion therapy throughout both pregnancies for low back pain and went on to have an uncomplicated delivery.

The patient presented again 12 months after the birth of her second child with bilateral pain in the sacroiliac joints (SIJ's). She described the pain as constant and dull in nature with an “unstable” or “give way” sensation both at extreme ranges of unilateral leg movement and at night when trying to turn over in bed. This sensation was also felt into the symphysis pubis at extreme ranges of movement. Initial visual analogue scale (VAS) rating of the pain was a constant 3/10 increasing to 6/10 at extreme range of motion.

The pain was relieved by gentle motion such as walking and stretching and aggravated when lying flat on her back in bed, lifting children out of cots and lunging associated with housework.

EXAMINATION:

Blood pressure was within normal limits at 125/85. Neurological examination of reflexes, dermatomes and nerve tension signs were unremarkable. On postural examination a flattened lumbar lordosis and right sided pelvic distortion pattern were noted. Range of motion assessment was painful and limited in

bilateral rotation, lateral flexion and extension. Orthopedic examination yielded a positive finding for bilateral Mennell's and Fabere Patrick test, right sided Trendellenburg test was also positive. Hypertonic and tender gluteus medius/minimus, psoas, quadratus lumborum and piriformis were noted. Muscle strength resistance testing showed a 4/5 weakness in bilateral hip abduction and internal rotation and 3/5 for psoas muscle testing. The patient also found it difficult to activate pelvic floor muscles when requested. The "unstable" sensation was replicated when the patient was asked to perform a deep unsupported forward lunge.

IMAGING:

Plain film radiograph examination of the thoracic, lumbosacral spine and sacroiliac joints was performed (Fig 1). A minimal S shaped scoliosis in the mid and lower thoracic spine was noted with corresponding mild lumbar scoliosis con-caved to the right centered at L3, Cobb angle approximately 7 degrees. Both hips and sacroiliac joints appear normal in morphology. An apparent enlargement of the obturator foramen on the right side is considered indicative of a right sided posterior innominate. (1)



Figures 1a and 1b: AP & Lateral lumbosacral plain film X-ray of patient.

TREATMENT:

The patient was treated with Cox® flexion distraction therapy protocol 2 at L5/S1 level and bilateral SIJ mobilization. The use of SOT blocking techniques while performing flexion-distraction procedure was targeted at correcting the posterior innominate with a block being placed under the acetabulum on the right side and contacting L5 spinous process in a cephalad direction. A stretching and core stability routine was outlined after her second treatment which involved stretches for gluts, piriformis, quads and hamstrings as well as a decompressive knee-chest stretch to be done in bed both morning and night. A spinal flattening exercise (Figure 2) as well as a stabilizing bridge exercise (Figure 3) which involved increasing levels of challenge applied through the addition of leg movements in order to activate pelvic floor and core muscles and hence stabilize the self-locking mechanism of the SIJ.



Figure 2



Figure 3

Figure 2: Spinal flattening exercise with posterior pelvic tilt and lumbar stretch.

Figure 3: Holding a bridge to develop core control and gluteal strength while progressing to the addition of extremity movements.

CASE OUTCOME:

After 1 treatment the patient reported immediate relief, she was able to lay pain free in bed however still felt quite unstable at extremes of motion. This relief lasted about 48 hours by which time the ache had returned at a VAS rating of 2/10. After 3 treatments the patient was pain free and commenced her function restoration exercise program. After 6 treatments over a period of 6 weeks the patient is pain free and confidently performing all activities of daily living (ADLs). The patient is receiving periodic maintenance treatments as well as continuing with her exercise program at home.

DISCUSSION:

The interruption to the “self locking” mechanism can be related to a decrease in stability of the SIJ and increase vulnerability of ligamentous and cartilaginous structures to shearing forces leading to injury. (1) The increase in mechanical loading during pregnancy combined with physiological increase in SIJ motion can lead to pain due to joint hyper mobility. (3) Perpetuation of this pain beyond pregnancy may be related to a combination of failure of the self locking mechanism and the maintenance of SIJ fixation due to compressive and elastic forces of ligaments and soft tissue. This dysfunctional pattern is unlikely to resolve on its own and responds favorably to biomechanical intervention. By mobilizing the sacroiliac joint and lumbar spine using Cox® flexion distraction therapy we are attempting to restore the “self locking” mechanism of the SIJ and decrease its susceptibility to shearing forces, restoring optimal biomechanical function and decreasing pain.

The addition of a home care exercise program was essential in this case in creating and maintaining a functional soft tissue support system to enhance sacroiliac joint stability and decrease the likelihood of recurrence. Contraction of the transverse abdominis significantly decreases the laxity of the sacroiliac joint. (4) Drawing in the abdominal wall to exercise the transverse abdominis muscle has been demonstrated to reduce the recurrence of low back pain. (4) The prescribed exercises targeted key



stabilizing muscles of the SIJ and lumbar spine including transverse abdominis, gluteals, piriformis, psoas and pelvic floor in order to maintain the biomechanical correction of the “self locking” mechanism.

CONCLUSION:

This patient achieved excellent outcomes from Cox® Technic and is continuing to participate in her active care program. This case highlights the success of Cox® flexion-distraction therapy in mobilizing and restoring SIJ function, particularly with the implementation of a strong active care program. Sacroiliac joint pain and instability is a significant sequelae for post partum women, and this case demonstrates the benefit of the use of low force mechanical therapy in managing this condition and restoring an active lifestyle for these patients.

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