CASE REPORT: Modified Cox flexion-distraction spinal decompression therapy assists in the management of low back and pelvic pain in a pregnant patient.

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Submitted on 29/10/2014

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Introduction: **Low back pain is highly prevalent in pregnant women, up to 90% will experience some form of back and pelvic pain during the course of their pregnancy (3). Of significant note are the biomechanical changes a pregnant woman's pelvis undergoes during this time with the "loosening" of the sacroiliac joint and pelvis being a possible mechanism of pain throughout pregnancy (1). In this case we see the successful treatment of a pregnant patient experiencing low back and anterior pelvic pain using modified Cox flexion distraction spinal therapy.**

History: This case outlines the treatment of a 30 year old female who at 34 weeks pregnant with her first child presented with progressive low back pain and anterior pelvic pain. The pain had been increasing in duration and intensity over the previous 4 weeks and had led to difficulty when walking or standing for greater than 10minutes. Initial visual analogue scale (VAS) pain rating was 7/10 at worst and 3/10 at best. General practitioner advice had been sought and a differential diagnosis of urinary tract infection or pubic symphasis inflammation/separation were suspected and later ruled out through ultrasound imaging.
The pain was described at the lumbosacral junction with an occasional sharp "knife like" sensation in the region of the pubic symphasis. Pain was aggravated by walking, standing, occasional with urination and relieved by resting and wearing a compression belt.

Examination:
Blood pressure was within normal limits at 129/80. Neurological examination of reflexes, dermatomes and muscle strength were unremarkable. On postural examination a significant increase in lumbar lordosis and right side pelvic distortion pattern noted. Orthopedic examinations were +ve on the right side with Menells test and Fabere Patrick test. No +ve straight leg raise or slump test were noted. Hypertonic and tender gluteal, psoas and piriformis muscles were found.

Imaging: Ultrasound examination at 34 weeks + 3 days gestation ruled out inflammation/separation of pubic symphasis.

Treatment:
The patient was treated with supine SOT pelvic blocking techniques in conjunction with modified, sidelying Cox flexion-distraction therapy protocol 2 (3) and short duration supine Y-axis decompression therapy. To perform modified flexion- distraction therapy, patient is placed in a sidelying position and flexion motion achieved through the lateral flexion mechanism, a lateral flexion decompression is achieved using the flexion motion of the table and circumduction by unlocking both lateral flexion and flexion mechanisms on the table. Each range of motion is repeated as per

normal Cox flexion-distraction protocol 2 outlines (2). A home exercise program was also prescribed including pelvic tilts, psoas muscle stretches and pelvic floor contraction exercises.

Case outcome:
After 2 treatments the patient reported significantly decreased pain both in frequency and duration. The patient was now able to walk/stand for >10minutes without onset of pain and no painful urination had been experienced since. After 4 treatments over a 4 week period the patient stated that her low back pain had reduced to a VAS rating of 1/10 and she had not experienced any pain at the pubic symphasis since her third treatment. 3 days after her 4th treatment the patient had an uncomplicated labor and birth and treatment ceased at this time. Upon antenatal follow-up consultation 6 weeks after birth the patient reported a complete resolution of symptoms and no ongoing complications.

Discussion:

Low back pain and pelvic pain are particularly prevalent during pregnancy with a reported incidence of 61%(4). This pain has been associated with the increased mechanical strain on the low back and sacroiliac joints due to the change in the centre of gravity experienced by the pregnant patient (6). Conservative management of these conditions is often sought however very little actual research has been published. Chiropractic therapy is considered a safe and effective means of treating the mechanical pain of pregnancy, a retrospective case series reports 94.1% of cases improving post chiropractic therapy (4).
In this case Cox flexion-distraction therapy was used rather than manual joint manipulation due to its wide variety of range of motion applications and decompressive forces. Protocol 2 was chosen as no radicular symptoms were present (2) and orthopedic testing had indicated involvement of the facet joints.
Using the hypothesis that pain was generated in part by the stress of the increased lumbar lordosis and increased mechanical pressure through sacroiliac and pelvic structures, a decompressive and mobilizing treatment protocol was applied yielding a particularly successful result in not only the low back and sacroiliac pain but also in the pain experienced at pubic symphasis. A possible mechanism of this relief is that easing the strain and compression in the posterior compartment and sacroiliac region reflexly reduced the strain on, and improved the articulation of the pubic symphasis. A relationship has also been noted between secondary impairment of lower sacral nerve root function due to mechanical disorder of the low back which can account for pelvic pain relieved by flexion-distraction therapy (2).
Axial distraction adjusting is thought to stimulate the firing of normo-excitatory spinal reflexes which inhibits hyper-excitatory impulses which generate pain (2). Supine long axis decompression was a particularly useful modification of Cox therapy used for this patient, providing enormous relief to the postural stress and pressure accumulation

throughout the lower lumbar facet joints experienced during pregnancy and attributed to the increased lordotic curve.
The pattern of low back and pelvic pain is commonly experienced in the latter months of pregnancy and the application of Cox flexion distraction spinal therapy in this case provided a helpful and gentle solution to these symptoms.

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 modified Cox flexion-distraction therapy adjusting for the pregnant patient, particularly with the implementation of a strong home active care program. With the high prevalence of back pain experienced by pregnant women, this case highlights the benefit of the use of low force mechanical therapy in managing low back and pelvic pain during pregnancy.

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