Chiropractic Management of Pregnancy-Related Lumbopelvic Pain: A Case Study

Maria Bernard, BSc, GradDipChiro, GradCertChiroPaediatrics^{a,*},
Peter Tuchin, BSc, GradDipChiro, OHS, PhD^b

^a Chiropractor, Private Practice, Sydney, Australia

^b Associate Professor, Department of Chiropractic Faculty Science, Macquarie University, Sydney, NSW, Australia

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Abstract

Objective: The purpose of this case report is to describe chiropractic management of a patient with pregnancy-related lumbopelvic pain.

Clinical Features: A pregnant 35-year-old woman experienced insidious moderate to severe pregnancy-related lumbopelvic pain and leg pain at 32 weeks' gestation. Pain limited her endurance capacity for walking and sitting. Clinical testing revealed a left sacroiliac joint functional disturbance and myofascial trigger points reproducing back and leg pain.

Intervention and Outcome: A diagnosis of pregnancy-related low back pain and pregnancy-related pelvic girdle pain was made. The patient was treated with chiropractic spinal manipulation, soft tissue therapy, exercises, and ergonomic advice in 13 visits over 6 weeks. She consulted her obstetrician for her weekly obstetric visits. At the end of treatment, her low back pain reduced from 7 to 2 on a 0–10 numeric pain scale rating. Functional activities reported such as walking, sitting, and traveling comfortably in a car had improved.

Conclusion: This patient with pregnancy-related lumbopelvic pain improved in pain and function after chiropractic treatment and usual obstetric management.

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Introduction

There are discrepancies to defining lumbopelvic pain in the pregnant population.^{1,2} Current terminology, pain topography, functional disabilities, and positive correla-

tion of clinical testing have demarcated the classification of pregnancy-related lumbopelvic pain (PR LPP) into subgroups: pregnancy-related low back pain (PR LBP) and pregnancy-related pelvic girdle pain (PR PGP).^{2–4}

Careful observation of the clinical features of PR LPP can help distinguish the seriousness of the potential symptoms and prognosis. Pain has shown to influence pregnant women's daily lives and the challenges they encounter concerning their physical, psychological,

* Corresponding author: Maria Bernard-Giglio, PO Box 8400, Mt Pritchard, 2170.

E-mail address: maria@bernardchiropractic.com.au (M. Bernard).

occupational, and social function.^{1–8} Defining PR LPP is imperative for the early diagnosis and effective management of PR LPP to improve quality of life.⁵ A recent prospective cross-sectional descriptive study⁹ by midwives demonstrated that the majority of pregnant women agreed that “LPP was expected because of the pregnancy.” Only 25% recounted receiving any form of back treatment. In early pregnancy, women classified with combined low back pain and pelvic girdle pain exhibit the highest risk for persistent pain postpartum, functional disability, and recurrence of PR LPP in subsequent pregnancies.^{5,6,10}

There is no “gold standard” for diagnosing PR LPP,^{4,10} and this diagnosis is dependent on assessing clinical features, including etiology and risk factors, symptoms and pain topography, functional disabilities, and positive results to provocation tests.

Etiology continues to be considered as unknown,⁶ but some reported that trigger factors include hormones,¹¹ biomechanics, trauma, metabolic factors, inadequate motor control, and stress of the ligament structures.^{2,12,13} Symptoms of PR LPP can begin as early as the first trimester or at any stage during the pregnancy. Risk factors for developing PR LPP are strongly related to a history of previous low back pain, previous trauma to the pelvis, multiparity, and a high work load.⁵ *Pregnancy-related low back pain* has been defined² as pain between the 12th rib and the gluteal fold throughout the course of the pregnancy. Pregnancy-related back pain shares clinical symptoms to nonpregnancy nonspecific low back pain,^{2–4} including dull pain exacerbated by forward flexion, associated erector spinae pain upon palpation, and associated restriction in lower spinal movement.

Pregnancy-related pelvic girdle pain is defined as pain located from the level of the posterior iliac crest, the gluteal fold, and over the anterior and posterior elements of the pelvis during the course of the pregnancy. Pregnancy-related pelvic girdle pain also includes symphysis pubis pain syndrome and leg disturbances. The pain may radiate across the hip joint and femur,⁷ lacking a typical nerve root distribution.⁴ In PR PGP, functional abilities are compromised including endurance capacity for standing, walking, and sitting.

Pain provocation and palpation tests increase the sensitivity and specificity to the diagnosis of PR LBP and PGP if 3 or more give a positive test response.² These tests include posterior thigh test, Patrick’s FABER, Gaenslen’s test, modified Trendelenburg, distraction of the sacroiliac joint, active straight leg raise, responses to pain palpation of the dorsal longitudinal sacroiliac ligament, and palpation of the symphysis.

Although complementary and alternative medicine (CAM) has gained popularity among pregnant women, efficacy studies are still in the “infancy” days.^{14–16} Studies suggest that spinal manipulation therapy (SMT) may be an effective and safe intervention in PR LPP.^{17–19}

A recent randomized chiropractic clinical trial¹⁸ reported on the combination of multimodal and obstetric management in PR LPP. Obstetric care included usual prenatal consultation. Multimodal care involved chiropractors providing manual therapy, stabilization exercises, and patient education. The combination of management shows a greater improvement in pain and physical function as compared with just usual obstetric care.

In an observational prospective cohort study of 115 patients,²⁰ most pregnant patients undergoing chiropractic treatment reported clinically relevant improvement at every interval of time analyzed.

Evidence-based research in chiropractic care and SMT^{16–19} is beginning to provide alternative back pain management in PR LPP. The purpose of this case study is to describe the chiropractic care of a patient diagnosed with the combination of PR LBP and PR PGP which was managed concurrently with usual medical obstetric care.

Case Report

A healthy 35-year-old female gravida 4 at 32 weeks’ gestation presented for chiropractic care with moderate to severe PR LPP and leg pain. Pain was located bilaterally at the posterior iliac crest, the gluteal fold over the anterior and posterior elements of the bony pelvis, and into the left posterior thigh and calf muscle. The patient also reported constant “uncomfortable” tension in neck and shoulders. The value given to a 0–10 numeric pain rating scale of her back and leg was rated at 7. Insidious pain began from approximately the 20th week and was now traveling into her leg.

This was the patient’s fourth in vitro fertilization pregnancy in a time period of less than 5 years. Her first pregnancy 3½ years previously produced a healthy child. However, 2 subsequent pregnancies were aborted at 20 weeks because of complications and genetic abnormalities. No previous incidences of trauma or injury were reported to the spine, pelvis, hips, or knees. Because of increased intensity and duration of pain, the patient was not able to work and therefore ceased work earlier than anticipated. In a patient-reported outcomes measure questionnaire, she

indicated that she could stand and sit for less than 30 minutes and walk 10 minutes before stopping because of moderate pain. Home duties were limited to minimal bending and light lifting, and her sleeping was disturbed. Her obstetrician had recommended analgesics for the pain, which the patient declined. Medical prenatal blood test results were normal.

The patient's posture revealed a forward head carriage and rounded shoulders that were counter-balanced with an increased lordosis of the lumbopelvic spine. Standing active lumbar spine range of motion was moderately limited by back pain in all directions. Lumbar extension with slight left lateroflexion increased her left leg pain intensity. Valsalva's maneuver did not reproduce any symptoms. Straight leg raise did not reproduce neurological signs. Digital palpation of the left gluteus maximus muscle and piriformis muscle revealed myofascial trigger points which reactivated some of her back and leg pain. Provocation testing of the left long dorsal sacroiliac ligament revealed moderate to severe local pain, and palpation testing revealed edematous swelling. Sacral provocation testing reproduced moderate to severe pain which radiated bilaterally across the sacroiliac joints. Digital palpation of the sacrotuberous ligament on the right reproduced local moderate pain.

The Webster technique²¹ was used to analyze the patient. The patient was assessed laying prone and the spine kept in a neutral position on a specialized table, which has a swing-away section for the abdomen. Both knees were passively flexed in full range of motion toward the buttocks, and a comparison of the distance between the heels of both feet and the pelvis was noted. Reduced knee flexion was observed on the left with mild discomfort reported in the pelvis. Patrick's FABERE test was negative for pain.

Palpation reproduced mild pain in the cervical suboccipital soft tissue region. Active cervical range of motion was pain free and mildly restricted in left rotation. There was mild restriction in passive spinal motion at the level of the left occiput (Occ) and first cervical (C1) vertebra in rotation and lateroflexion. There was mild swelling on the left facet at the cervicothoracic junction, with restricted movement in passive testing in flexion and extension. Passive motion palpation of the thoracic (T) spinal facets revealed tenderness and restriction of movement associated at the left T5-6-7 spinal facet level.

A diagnosis of PR LBP and PR PGP was made because of sacroiliac dysfunction with associated spinal joint dysfunction at Occ-C1, cervicothoracic, and T5-6-7 spinal facet levels. The patient received

chiropractic diversified SMT to spinal dysfunctional levels and mechanical drop piece assisted manipulation to the sacrum. Soft tissue treatment was performed on the active triggers of myofascial referred pain and gentle effleurage massage to the lumbo sacral spine, pelvic area, and anterior lower abdominal region. Daily low back stretches and pelvic floor strengthening exercises were advised for the patient to perform at home. A graduated exercise plan to increase walking was recommended. Home care advice included ergonomic considerations for lifting, carrying, and maintaining good posture.

Within 1 week, the patient reported a reduction in the severity and duration of her low back and leg pain. She reported being able to sit for a longer period of time and walk with greater ease. At the end of 13 visits, she was able to walk for more than half an hour, stand for longer than 30 minutes, and sit and travel for longer than 1 hour in the car. With the reduction of pain and ability to be more active about the house, she reported that her anxiety had reduced and that she was more confident and relaxed in social settings. Her numeric pain rating scale reduced from 7 to 2. She did not report any adverse reactions to care. At the eighth visit, she did report an aggravation of her pain (value of 5) after doing home duties. She was treated with SMT and soft tissue technique and reported at her next visit a reduction of pain (value of 2). The fetus under obstetrician care was reported breech during this period. Satisfied with the improvement in PR LPP, she ended chiropractic care at 39 weeks for a scheduled external cephalic version maneuver with her obstetrician. She gave consent to have her personal health information published in this article without divulging personal information. She returned for chiropractic care after an absence of 12 months for low back pain.

Discussion

The efficacy of chiropractic care urgently requires further validation because of its growing popularity in pregnant women who seek alternative pain relief. In this case study of PR LPP, the patient also presented with a clinical history of infertility and of miscarriages due to fetal abnormalities, and this pregnancy was the result of successful in vitro fertilization intervention. Chiropractic management and monitoring of the patient with usual obstetric care resulted in an improvement in functional movement and pain without any disturbance to her pregnancy.

The prevalence of PR LPP is about 45% for all pregnant women during pregnancy and approximately 25% in the postpartum period.¹ Back pain in pregnancy is a health concern in terms of not just physical pain and disability but also psychological and socioeconomic consequences affecting the health of pregnant women.^{5,8,22–24} In this case study, the patient presented with moderate pain as reported by a high pain numerical value. She reported functional limitations impacting daily living activities in her pregnancy. Continuing on with her usual prenatal care, the therapeutic intervention outcome of chiropractic management was significant pain relief as reflected by the improvement in the pain numerical value and reported improvement in the quality of life in her pregnancy.

Chiropractors are considered CAM practitioners, who commonly treat low back pain.^{14–16} Studies have reported that pregnant women are seeking CAM therapists for relief of PR LPP.^{17,19} This case study uses evidence-based research from the findings of a Cochrane database review (2013) into interventions for PR LPP.²⁵ Results show chiropractic care producing improvements in pregnant women's health.^{18,20}

In addition to clinical tests recommended by the guidelines,² in this case study, myofascial release technique²⁶ and Webster testing²¹ were applied. The results from these tests provided valuable clinical insight that was applied to treat myofascial trigger points and in manipulation of the pelvis. Although widely used among chiropractors, the Webster technique test has limited evidence^{21,27–29} and has not undergone specificity or sensitivity testing. Further research with the Webster technique is required to assess interreliability, sensitivity, and specificity of the technique against standard tests.

Although much debate is centered on the safety concerns of SMT during pregnancy, there were no adverse reactions to SMT reported in this case. Both Stuber et al³⁰ and Khorsan et al³¹ looked at adverse reactions in SMT during pregnancy and the postpartum period identified in the literature. Both concluded that these are rare events and SMT may be considered as a treatment option.³¹ Larger-scale observational or randomized control studies are required to monitor these rare events in future.

Limitations

Although this case study offers a context-dependent observation of chiropractic management in PR LPP, positive results could possibly represent spontaneous resolution or natural course of back pain. We could also observe and offer hypothesis that the combination

of chiropractic and obstetric care contributed to the resultant pain and functional movement relief. We cannot say that it was only chiropractic management offering this improvement. This case study offers insight into the improvement in PR LPP with a patient who has a clinical history of infertility and miscarriage. Postpartum information from the patient may have been useful for further defining PR LPP and chiropractic management. Questions arising include the following: Did spontaneous turn of breech baby occur? If performed, was the external cephalic version successful? Was labor spontaneous? Was there any medical intervention? Was a cesarean delivery performed? Did she experience postpartum PR LPP? Consulting patients postcare may assist in further contributing to research knowledge.

Conclusion

The purpose of this case was to describe chiropractic management of a patient with PR LPP. Successful results were recorded using patient-reported outcomes to monitor changes. This patient reported improvement of pain and functional movement during a combination of chiropractic musculoskeletal management along with usual obstetric care.

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No funding sources or conflicts of interest were reported for this study.

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