



Effective Physical Therapy Treatment of Post-Cesarean Section Low Back Pain – Case Report

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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Case Study

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ABSTRACT

Introduction: Treatment of low back pain after cesarean section has been studied with exercise programs, but there has been little with a full physical therapy treatment plan involving manual therapy and therapeutic exercise.

Case: 38 year old female 2.5 years after cesarean section. Presenting with a previous history of low back pain treated by laminectomy. Patient reported marked difficulty lifting her child due to low back pain.

Interventions: Manual therapy was performed, involving soft tissue manipulation, to abdominal muscles, gluteal muscles, and SI joints. Therapeutic exercise involved strengthening the abdominals and gluteus medius muscles. Patient was treated 7 times over 5 weeks.

Outcomes: Pain on Verbal Numeric rating scale (VNRS) decreased from 6-7/10 to 0/10. Objective measure by Focus on Therapeutic Outcomes (FOTO) lumbar scale showed improvement from 59 to 82, with an increase of 8 points being a clinically significant improvement. Patient was able to lift her child pain-free.

Conclusions: A physical therapy treatment plan combining manual therapy and therapeutic exercise was very effective in treating a patient with low back pain after a cesarean section.

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1. INTRODUCTION

Low back pain is one of the most common medical complaints worldwide, and has an increased prevalence amongst women [1]. Some of this may be due to the prevalence of low back pain in pregnancy and postpartum, with a Swedish study showing 72% experiencing pain during pregnancy and 43% postpartum [2]. Other studies did not find as high of a percentage, with another showing 25%, still a substantial number [3]. Postpartum numbers were lower, at 16%, with increased prevalence among those with a history of back pain, and increased disability associated with weak hip abductors, back extensors, and subjects both low back and pelvic girdle pain, that is pain near the SI joints and pelvic girdle [3,4,2]. Those with moderate pain or worse, 68% in one study, continued to have pain, thus reducing health [5]. Muscle weaknesses in the back and hips have been postulated as a cause for this, and physical therapy showed some benefit [2,5].

Although most studies focus on overall pregnancy and childbirth statistics, studies have been done on patients giving birth by cesarean section. Studies found slightly higher prevalence of pain after cesarean section, at 6-18% versus 4-10%, [6] and persistent pain more common a year later with cesarean [7]. It is postulated that this could be due to increased pain during labor, but another study found little difference with anesthesia [6,8]. However, findings were mixed, with another study finding less persistent pain after cesarean section [9].

Studies have been done on treatment of pregnancy related low back pain, with pelvic stabilization exercises reducing back pain over a course of treatment [10]. A proposed mechanism for this is that the transversus abdominis muscle is under-activated with back pain, and that the superficial muscles are over activated [11,12]. However, other studies in postpartum low back pain subjects found that exercises reduced pain with no change in transversus abdominis activation, or that exercise and kinesiotape resulted in better outcomes than just exercise [13,14]. For low back pain in general, there is evidence that supervised exercises are beneficial, with some debate as to the specific exercises [15-19].

This case study details a patient who experiences low back pain several years after a

cesarean section. She also had a history of previous low back pain. Her condition was evaluated and treated successfully and conservatively with Physical Therapy.

Although previous studies have used exercise for pain after cesarean section, this case details a comprehensive physical therapy treatment plan, with both exercise and manual therapy, for a patient with chronic low back pain after cesarean section.

2. CASE

Informed consent was signed by the patient for the examination, treatment, and the publication of her case.

This case involved a 38 year old female with low back pain. She had a long history of low back pain, and a long treatment history including laminectomy 9 years prior with physical therapy postsurgical care. Her back recovered after that surgery and therapy, but she experienced what she termed, "A Resurgence of Back Pain." Three years prior, she became pregnant and experienced some back pain. Then she gave birth via cesarean section. She experienced back pain from that point.

At the time of evaluation, she was waking up with significant deep back pain, 6-7/10 on the verbal numerical rating scale (VNRS). After getting up and moving around, the pain would drop to 2/10. However, every morning, she would wake with significant pain. The pain was localized in her low back, with no numbness or tingling in either lower extremity. It would become painful again with prolonged sitting, and became achy and tired with prolonged standing. Although it would improve during the day, she could not lift her daughter without experiencing significant pain, around 7/10. She did not regularly exercise. Also, her work required frequent driving and travelling, thus prolonged sitting. Her goals were to be free from this pain, and to be able to lift her daughter.

Objective functional measures were taken using Focus on Therapeutic Outcomes (FOTO), which is used by thousands of Physical Therapy offices, [20]. The lumbar test gave a score of 59 – stage 4, little difficulty with tasks. Her lumbar range of motion was slightly decreased, flexion 45, extension 15, R/L lateral flexion 30, with

some stiffness but no substantial pain. On manual muscle testing, bilateral glute medius and lower abdominals graded 4-/5 with poor eccentric control. Ober's test was positive for TFL decreased muscle length bilaterally. Bilateral gluteus medius and gluteus maximus also demonstrated decreased muscle length, as well as hypertonicity and tenderness. The tissue around her cesarean section scar on her lower abdominal was hypertonic. Finally, her SI joints bilaterally were tender and had thickened tissue.

Microcurrent injury detection was also used, where a substantial decrease in conductance is correlated with soft tissue injury [21-26]. Decreased conductance was detected in bilateral gluteus medius and lower abdominal muscles, and bilateral SI joints.

The first treatment consisted of soft tissue work to the SI joints and the muscles listed above, and strengthening and neuromuscular education to the lower abdominals and gluteus medius muscles such as clamshells and supine hook-lying marching. The specific soft tissue technique was soft tissue manipulation, which palpates the different tissue layers and increases their mobility along restricted vectors [25-26]. Patient education was given to continue exercises for the gluteal muscles and abdominals with proper form, and to avoid lifting and twisting activities. Further treatments added other exercises, such as bridges, sidesteps, and mini-squats on a lateral balance board.

The patient progressed well, with her pain decreasing to 3/10 by the third treatment, a week later. A week later, on her fifth visit, pain was down to 1/10. Eccentric control of her hips and abdominals improved to fair-. During this time, the patient continued her travel filled work schedule, but was able to come twice a week for treatments.

On her seventh visit, five weeks after her initial visit and two weeks after her last visit, her back was pain-free and she could pick up her daughter without discomfort. She was not lifting too many heavy objects, but she felt good overall and was very pleased by her progress. She had also been doing her HEP exercises a few times a week, though not every day. At this point, she was discharged from back treatments. At the 7th visit, FOTO lumbar score improved from 59 to 82 – Stage 5, back to normal life. Clinically significant change was 8 per previous research [27], and the FOTO predicted score was 67 at the 10th visit.

A related but separate condition arose at her 5th visit when she also complained of 4/10 pain in her L piriformis. However, she could distinguish this pain from her back complaints, and that they were in different areas and affected by different activities. This was treated with stretching and soft tissue manipulation. This improved to 2/10 by her 7th visit, and she acknowledged her need to stretch more and sit less. She expressed that this resolved in later communications.

3. DISCUSSION

This case describes the treatment of a patient with low back pain with prior Cesarean section and a history of low back pain. These factors appear to increase low back pain risk [4,6]. The patient also demonstrated other typical characteristics of patients with low back pain, including core and hip strength deficits, sedentary lifestyle, and history of low back pain. In the author's practice, patients such as this are common.

With seven Physical Therapy treatments, pain decreased from 6-7/10 to 0/10 in five weeks. This was even with a work schedule involving frequent travel and a home exercise routine that was not perfectly followed. In the author's practice, results such as this are common for this condition. Therapeutic exercises and neuromuscular re-education focused on her abdominal muscles and glutes. Eccentric control of these areas improved from poor to fair- over this treatment plan. This is consistent with previous studies [2,10,13]. Also, soft tissue manipulation may have had a factor in this, as in previous cases [25,26].

Logically, it is not surprising that patients demonstrate core weakness after a cesarean section. The incision of the surgery cuts completely through the abdominal muscles. Although healing occurs, abdominal muscles have been shown to be weaker post-surgery for breast reconstruction [28]. Also, it is possible that with the new mother focused on their child, they may not engage in core strengthening activities, leaving them with a weakened core. This may lead to the higher risk of low back pain [6]. It is possible that manual therapy also assisted by loosening aberrant tissue in the surgical scar.

Overall, these physical therapy treatments demonstrate advantages such as focus on a specific deficit, minimal side effects, efficacy, and

low cost and cost of equipment. However, the disadvantage is that patients must attend physical therapy sessions, which may be difficult due to transportation and scheduling concerns. Still, these are small disadvantages compared to the recovery demonstrated.

Objective measures also showed improvement. FOTO lumbar score improved 23 points, more than the 8 points for significance. These result may be due to the comprehensive physical therapy treatment plan, with manual therapy, therapeutic exercise, and a home exercise plan. Also, soft tissue work focused on areas detected by microcurrent injury detection, which may have also resulted in a more focused treatment. It is also worthy of note that tissue injury was detected in muscles that demonstrated poor eccentric control, yet another agreement between multiple measures. A treatment of note was the soft tissue manipulation performed on the abdominals, as this area is not a common focus for manual therapy, and thus treatment here may have greatly aided the recovery time. Also of note is that pain measured 6-7/10 when the FOTO lumbar score was 59 – little difficulty. This is a good example of how pain and function may not be necessarily proportional.

This case also demonstrates that conditions in the same vicinity may not be directly related to the patient's chief complaint. That patient had tight TFLs bilaterally, and appeared to develop a piriformis syndrome over her treatment plan. However, her chief complaint of back pain resolved despite the existence of the piriformis pain.

As this case demonstrates a simple detection and a quick recovery after 7 treatments, it may be beneficial to evaluate mothers for this weakness after a cesarean section. It would give the benefits of decreased pain and increased function to new mothers for a minimal cost. One possible clinical prediction rule may be mothers post cesarean with a combination of history of low back pain, poor abdominal or hip eccentric control, or SI joint pain. For clinical practice, performing manual therapy on the lower abdominals in patient post cesarean may also provide a significant benefit. However, as this was a case study, further research is required.

4. CONCLUSION

Physical therapy was fast and effective in conservatively treating a patient with low back pain post cesarean section.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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