Case Report:

Physical therapy plan of care for pregnancy-related pelvic girdle pain: a case report

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Abstract:

Pregnancy-related pelvic girdle pain (PPGP) is a common musculoskeletal condition affecting about one in five pregnant women, often impairing daily function and quality of life. This case report describes a 32-year-old pregnant woman presenting with sacroiliac joint dysfunction, pubic symphysis pain, and radiating discomfort to the thigh. Clinical examination confirmed right sacroiliac malalignment and myofascial trigger points. A multimodal physical therapy program consisting of manual therapy, mobility and stability exercises, kinesio taping, and a tailored home exercise plan was delivered over six sessions. The patient reported substantial improvements, with her Numeric Pain Rating Scale decreasing from 9 to 2, and enhanced functional performance, as reflected by an improvement in the Oswestry Disability Index by 56%. She also noted reduced anxiety, better sleep, and improved participation in daily and social activities. Minor skin irritation was the only adverse effect. This case highlights the positive role of individualized physiotherapy in alleviating pain and functional limitations associated with PPGP, and supports conservative, non-pharmacological management during pregnancy.

Keywords:

Low back pain, Pregnancy; Sacroiliac joint pain; Pelvic gridle pain; Case report

Introduction:

Pregnancy-related pelvic girdle pain (PPGP) is one of the most prevalent musculoskeletal (MSK) disorders affecting women during pregnancy[1], impacting approximately 20% of mothers during both pregnancy and postpartum[2]. Although many women recover from pelvic girdle pain (PGP) within three months of delivery, around 30% continue to experience symptoms beyond this period[1]. A significant percentage of women continue to experience pain up to two years following childbirth [3]. During pregnancy, women often encounter pelvic-related discomfort, which may manifest as lower back pain (LBP), PGP, and pregnancy-related LBP. These conditions are jointly identified as lumbopelvic pain. Various studies define PGP as pain experienced in different areas, including the lower back, buttocks, groin, pubic symphysis, and one or both sacroiliac joints [1]. definitions of postpartum PGP vary; some research includes LBP, others do not [1]. The latest definition categorizes PGP as burning or stabbing sensations in the sacral region or pubic symphysis, with potential radiation to the groin, buttocks, or posterior thigh [4]. This pain typically begins around the 18th week of pregnancy, peaking in intensity by the 36th week [5]. PGP presents a unique clinical profile, demanding precise management strategies[6].

PGP has a meaningful influence on women's overall quality of life (QOL), obstructing their involvement in daily activities. Simple actions, such as standing, sitting, lifting, and walking, can become painful challenges[1]. Consequently, many women may experience diminished physical capabilities, leading to frustration and a lower sense of well-being. Psychosocial factors, such as disrupted sleep, anxiety, depression, low self-efficacy, and pain catastrophizing, are closely linked to impaired functioning[7]. Research shows that depression and anxiety greatly increase the risk of pelvic pain during pregnancy. Specifically, women with depression have a significant risk of such pain, and those with anxiety exhibit a notable risk. Furthermore, women with higher daily stress levels are more likely to develop pelvic girdle syndrome (PGS) and one-sided sacroiliac syndrome. A higher level of emotional distress is linked to a greater risk of PGS [8]. Risk factors for PGP throughout pregnancy include carrying heavy loads, a history of LBP, a previous history of pelvic girdle or low back pain in previous pregnancies, and injuries to the pelvis. Moreover, PGP has emerged as a primary reason for work absenteeism during pregnancy[2]. Consequently, it is important to raise awareness among healthcare professionals about the various treatment options

available, as PPGP is often mistakenly viewed as a normal part of the pregnancy experience[6].

Treatment options for PPGP typically include physiotherapy, pharmacological intervention, and complementary therapies, such as acupuncture and massage [6]. The most effective treatment approaches for this condition remain debatable. Existing research highlights a significant gap in comprehensive guidelines for the physical therapy management of MSK conditions related to pregnancy, including PPGP [3].

Given the wide range of potential treatments, this case study aims to explore combined physical therapy approaches for managing PPGP in patients, focusing on interventions that address both the physical and psychosocial aspects of the condition. Despite growing awareness of PPGP, few case reports have detailed the use of a comprehensive multimodal physical therapy program including manual therapy, kinesio taping, and targeted home exercises—alongside psychological considerations such as anxiety reduction. This case adds to the limited literature by demonstrating the effectiveness of an individualized approach in reducing pain and improving functional outcomes during pregnancy.

Case Presentation:

A 32-year-old female medical field worker, currently 31 weeks pregnant with her second child, sought help at the physical therapy clinic due to discomfort characterized by moderate-to-severe LBP and pubic symphysis pain. Her main concern was focused on the right SIJ, particularly around the posterior superior iliac spine (PSIS). The pain radiated to the gluteal area and extended down the posterior right thigh and calf, highlighting the need for targeted intervention. In addition to her pain, the patient experienced stress incontinence during coughing due to her asthma condition. Using the Numeric Pain Rating Scale (NPRS) [9], she rated her pain at rest as seven, which escalated to a nine during activities such as transitioning from sitting to standing and walking. The onset of her pain began around the 20th week of her pregnancy, progressively radiating into her right buttock and posterior thigh. During her first pregnancy, which was 2½ years ago, she had a healthy vaginal delivery and experienced similar lower back and pubic symphysis discomfort; however, it did not have a significant impact on her overall QOL. This time, the persistent and intense pain led her to stop working earlier than she had planned, which underscores the importance of a tailored treatment approach. She reported increased emotional distress and anxiety due to her reduced function and inability to continue working. She receives moderate support

at home from her husband and extended family, which has helped manage childcare and daily responsibilities. According to the Oswestry Disability Index [10], the patient reported notable limitations in her daily activities, stating that she could only sit or stand for less than 30 minutes and walk about 500 meters before needing a break due to moderate pain. In addition, her sleep had been disrupted, as she wakes after about four hours because of pain, especially when changing positions. Nevertheless, she noted that she can carry her two-year-old child with minimal discomfort, indicating some difficulty with her capability.

Interestingly, the patient decided not to take analgesics suggested by her obstetrician to manage her pain, which opens up a discussion about alternative pain management strategies. During the physical examination, postural abnormalities were observed, including a forward head position and rounded shoulders, coupled with an exaggerated lordosis in her lumbopelvic region. Active range of motion in her lumbar spine was moderately restricted in all directions, especially in lumbar extension, with pronounced difficulty during right lateral flexion, which aggravated her right back pain. Further evaluation through the straight leg raise test showed no neurological signs, but tenderness was noted over the SIJ at the PSIS, along with significant discomfort at the pubic symphysis. The physical therapist identified myofascial trigger points in both the patient's gluteus maximus and piriformis muscles, which may contribute to her symptoms. Provocation tests, including the Patrick, or FABER (Flexion, ABduction and External Rotation), test and the thigh thrust test [11] reproduced moderate-to-severe pain in the right SIJ, whereas compression and distraction tests did not elicit a pain response. A Gillet test [12] was positive, indicating malalignment of the right PSIS during the stance phase.

Taking into consideration the patient's symptoms and the findings of the detailed physical examination, a diagnosis of PPGP was established. This diagnosis provides a clear path for developing a targeted treatment plan aimed at alleviating her symptoms and improving her QOL through physical therapy interventions.

Management:

The primary goals of this treatment program were to reduce pain intensity, improve lumbopelvic stability, restore functional mobility, and address anxiety-related symptoms affecting her quality of life. The patient began physical therapy shortly after her initial evaluation and attended six sessions scheduled twice a week, each lasting 30 minutes. A variety of manual therapy techniques were employed

during these sessions. The treatment began with mobilization of the sacrum, aimed at improving overall pelvic alignment. This was complemented by myofascial release, focusing on the gluteus and piriformis muscles, which are crucial for pelvic function and stability. After the manual therapy, the patient engaged in supervised mobility exercises while in a supine position, targeting the hips, lumbar spine, and lumbopelvic region. This combination of hands-on techniques and exercises was designed to enhance her range of motion and reduce discomfort.

After each session, Kinesio tape (KT) was intentionally applied for four consecutive sessions to provide the patient with immediate pain relief. The taping technique utilized an X-shaped configuration, applying 80% tension. The tape originated from the anterior superior iliac spine (ASIS). It crossed over the greater trochanter, while a second application started at the PSIS and intersected over the greater trochanter (as illustrated in Figure 1). She was advised to keep the tape on for up to two days to maximize its effects. However, after the fourth session, the patient reported experiencing rashes at the site of the KT application.

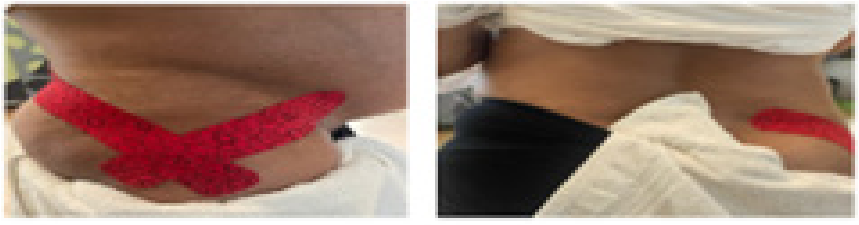


Figure 1: The Taping Technique.

A comprehensive home exercise program was provided to support her recovery outside the clinic, as detailed in Table 1. Education on how to perform these exercises correctly was also delivered. A video tutorial was recorded and saved on her phone for easy reference (as shown in Figure 2). This approach aimed to equip the patient with the knowledge and tools necessary for her ongoing rehabilitation. The patient also received thorough home-care advice, which emphasized ergonomic practices, including guidance on how to carry items, bend properly, and maintain good posture during her daily activities.

Table 1: Home Exercise Program.

Exercise	Sets and repetitions	Modification	Picture
Wall bridging	10 reps x 3 sets	Wall bridging with ball squeeze	Figure 2.a
Cat and Cow	10 reps x 2 sets	--	Figure 2.b
Bird and Cog	15 reps x 2 sets	Hold 10 sec	Figure 2.c
Side laying leg abduction (hip and knee flexion)	15 reps x 2 sets	Side laying (straight) leg abduction	Figure 2.d
Single leg raises	10 reps x 3 sets	Hold 10 sec	Figure 2.e
Pelvic floor exercises (Kegel exercise)	10 reps x 5 sets	Hold 10 sec	--

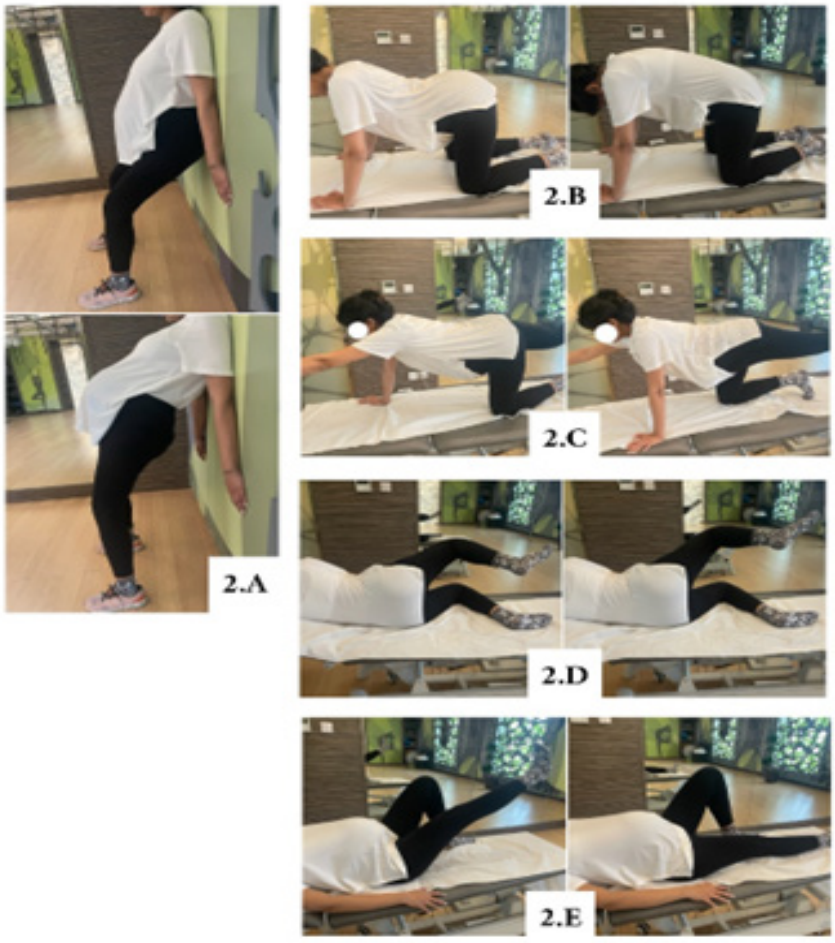


Figure 2: A comprehensive home exercise program.

Outcome:

Remarkably, within just one week, the patient began to experience a significant reduction in both the intensity and duration of her lower back and gluteal pain. This new state of comfort allowed her to sit for extended periods and walk with greater ease, significantly enhancing her overall QOL. After six therapy visits, her progress became increasingly evident. The Oswestry Disability Index showed improvement, with her score decreasing from 25 to 11. She could stand and walk for over 30 minutes without discomfort and sitting in the car for more than an hour was no longer a challenging task. As her physical activity increased and her pain lessened, she noticed a considerable decrease in her anxiety levels, which had previously affected her daily life. While not formally assessed using a standardized scale, her reported anxiety reduction was evident through improved sleep, social participation, and confidence in managing daily tasks. The improvements in her condition contributed to a sense of well-being that permeated various aspects of her routine.

In addition to her physical improvements, the patient expressed a growing sense of confidence and relaxation in social settings, which her pain had impacted. Her NPRS score dropped to two, indicating significant relief. In addition to the reduction in NPRS, her Oswestry Disability Index score improved, indicating enhanced functional capacity in daily tasks. The patient's outcome measures are summarized and presented in Table 2. Apart from experiencing minor rashes from the KT, she reported no adverse reactions to her treatment. Satisfied with the improvement in her PGP, she decided to conclude her physical therapy visits after three weeks and graciously agreed to share her health information in this article while ensuring her private details remain confidential.

Table 2: Pateint's Outcome Measures.

Outcome Measure	Pre-Treatment	Post-Treatment	Change / Improvement
NPRS	5/10 at rest; 7/10 with activity	2/10 with activity only	Decreased by 3–5 points
ODI	25	11	Decreased by 14 points (≈56% improvement in functional disability)
NPRS: Numeric Pain Rating Scale; ODI: Oswestry Disability Index			

Discussion:

This case study focuses on the physical therapy management provided to a patient experiencing PPGP. Previous studies, conducted in Sweden, have shown that women who report experiencing PPGP often have a greater number of relatives who have undergone pregnancies and

may also have a personal history of PGP. Specifically, women suffering from PGP are more likely to be younger, have a higher body mass index, and have experienced multiple pregnancies [13], similar to our study. In contrast, women who have completed pregnancies without reporting this type of pain tend to have different backgrounds [13]. This case study also showcases the effective integration of various physical therapy approaches and concepts in treating PPGP cases.

The physical examination provided clear confirmation of PGP, pinpointing malalignment in the SIJ. During the assessment, we identified several key factors: myofascial trigger points and tenderness specifically located over the SIJ and pubic symphysis. The outcomes from a series of provocation tests further solidified this diagnosis. As a previous study [14] has been confirmed that when these individual tests for SIJ dysfunction are utilised on their own, they tend to lack sensitivity and specificity. However, if three or more tests yield pain, it becomes reasonable for the clinician to conclude that SIJ dysfunction is indeed present [14]. Consequently, it is crucial to have the right training and experience with these provocation tests for an accurate diagnosis.

The treatment consisted of six comprehensive sessions of physical therapy. Each session incorporated a variety of manual techniques aimed at realigning the pelvis, addressing the myofascial trigger points, and alleviating pain. In addition, supervised mobility exercises were included to improve the patient's overall range of motion and functional mobility. Education on proper ergonomics and posture was also integral to the treatment plan, as these factors play a crucial role in the long-term management of PGP [15].

As a result of this multidimensional approach to care, the patient reported a significant reduction in the severity of pain, leading not only to enhanced physical functionality but also to an increased sense of confidence in social settings. The patient's ability to engage in daily activities improved markedly, greatly reducing the limitations previously imposed by discomfort.

Limitations:

One key limitation of this case study is the short follow-up period, making it challenging to assess the long-term effects of physical therapy management on PPGP. Future studies could aim to explore longer-term outcomes to understand the sustained benefits of physical therapy better. In addition, more research is needed to develop strategies to enhance the QOL for pregnant women experiencing PGP and reduce the risk of long-term postpartum disability.

Conclusion:

In conclusion, this case highlights the

substantial positive impacts of a personalized physical therapy program in alleviating PGP symptoms during pregnancy. The comprehensive strategy employed not only focused on immediate pain relief but also fostered a holistic enhancement of the patient's overall well-being and daily functioning. Ongoing collaboration with the healthcare professional also ensured a coordinated and patient-centered management approach, paving the way for better outcomes in the patient's overall experience.

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Disclosure statement:

There is no conflict of interest.

Ethics:

Consent was obtained from the participant and her information will be kept confidential.

Declaration of funding:

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