A Case Report on Antenatal Rehabilitation in a Multigravida Woman with Chronic Low Back Pain Due to Sacroiliac Joint Dysfunction

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Abstract—

Low back pain is a common musculoskeletal complaint during pregnancy, particularly in multigravida women, and can negatively affect functional activities and quality of life. Sacroiliac (SI) joint dysfunction is one of the contributing factors to chronic low back pain in this population, requiring safe and effective management strategies. This case report presents a 34-year-old multigravida woman in her second trimester with a 3-year history of chronic low back pain localized in the lumbar and buttock regions. The pain was worsened by prolonged sitting, standing, and household work and relieved by rest. There was no neurological involvement, and clinical assessment confirmed SI joint dysfunction. A comprehensive antenatal rehabilitation program was implemented, including Transcutaneous Electrical Nerve Stimulation (TENS), postural correction using pillows to maintain pelvic alignment, positional release therapy, and back care exercises aimed at improving trunk strength and stability. Additionally, breathing exercises, upper and lower limb strengthening exercises, and patient education were included to enhance functional capacity, posture, and endurance while ensuring maternal and fetal safety. Functional disability was evaluated using the Revised Oswestry Low Back Pain Disability Questionnaire before and after the intervention. Following completion of the program, the patient demonstrated significant improvement in pain, posture, and mobility, with a marked reduction in revised Oswestry low back pain disability scores. The intervention enabled the patient to perform daily activities with greater ease and comfort. This case underscores the importance of antenatal physiotherapy, including exercise, education, and pain management techniques, in effectively addressing chronic low back pain due to SI joint dysfunction in multigravida women during pregnancy.

Keywords—

antenatal rehabilitation, chronic low back pain, sacroiliac joint dysfunction, multigravida, physiotherapy management, revised Oswestry low back pain disability questionnaire, functional recovery.

I. Introduction

Low back pain (LBP) is one of the most frequently reported musculoskeletal issues during pregnancy, affecting a large proportion of expectant mothers. Studies suggest that between 25% and 90% of pregnant women experience some form of low back discomfort, with a significant number continuing to suffer from symptoms even after childbirth [1]. Among the various causes, sacroiliac (SI) joint dysfunction plays a key role, especially in cases where the joint's stability is compromised.

The SI joints, located at the junction where the sacrum meets the ilium, support the weight of the upper body and contribute to movement coordination. During pregnancy, hormonal fluctuations — particularly elevated levels of relaxin and progesterone — lead to ligament relaxation and increased joint mobility. This instability can result in pain, discomfort, and functional limitations [2].

Women who have had multiple pregnancies (multigravida) are at greater risk for developing SI joint-related pain. Repeated biomechanical stress and hormonal changes from prior pregnancies can exacerbate joint strain and dysfunction, leading to localized pain in the lower back and buttocks. Movements such as standing for long periods, sitting, or bending may further aggravate symptoms [3].

Management of SI joint dysfunction during pregnancy prioritizes non-invasive and safe interventions that address pain, joint stability, and functional capacity. Antenatal rehabilitation programs focusing on exercise therapy, posture correction, and patient education have demonstrated promising outcomes in improving pain relief and mobility during pregnancy [4].

This case report presents the antenatal physiotherapy approach taken for a 34-year-old multigravida woman experiencing chronic low back pain due to SI joint dysfunction. The report outlines the rehabilitation methods employed, including exercise protocols, pain management strategies, and functional assessment tools, with a focus on improving maternal comfort and promoting safe daily activities during pregnancy.

II. Case Description

A 34-year-old multigravida woman in her second trimester of pregnancy presented with a 3-year history of chronic low back pain. The pain was primarily localized in the lumbar and buttock regions and occasionally radiated toward the anterior thigh. The patient described the pain as dull and aching, with episodes of sharp pain during movements such as bending forward or twisting sideways. The symptoms were aggravated by prolonged sitting, standing, household work, and movements like rising from a chair. Rest and avoidance of pain-provoking activities provided temporary relief.

The onset of pain was gradual without any specific traumatic event. The condition had a fluctuating course with intermittent exacerbations over the past three years. There was no history of neurological symptoms such as radiating pain, numbness, or weakness in the lower limbs. The patient did not report bowel or bladder disturbances.

Her obstetric history indicated multiple previous pregnancies, contributing to increased physical strain. There was no prior medical or surgical intervention for the back pain. Clinical evaluation suggested sacroiliac joint dysfunction as the primary diagnosis. Functional limitations were evident, affecting the patient’s ability to perform routine activities comfortably during pregnancy.

At the time of assessment, the patient reported a pain intensity score of 6 out of 10 on the Visual Analog Scale (VAS). The Revised Oswestry Low Back Pain Disability Questionnaire score was calculated as 48.89%, indicating a moderate level of functional disability affecting daily living activities.

III. Intervention

The patient underwent a structured antenatal rehabilitation program aimed at managing chronic low back pain while ensuring maternal and fetal safety. The intervention included:

Transcutaneous Electrical Nerve Stimulation (TENS): High frequency (100–130 Hz) for 10–15 minutes per session to alleviate pain.

Positioning Techniques: Pillows were used to support proper alignment of the pelvis and spine. A pillow placed between the knees maintained neutral pelvic alignment and prevented femur adduction and pelvic torsion. Additional pillows were used behind the back or under the trunk to prevent trunk rolling, and under the head to maintain spinal alignment.

Back Care Exercises: Exercises were prescribed for 10 repetitions with a 5-second hold for each, including:
- Posterior pelvic tilt,
- Glute bridging,
- Pelvic rotations,
- Straight leg raising,
- Cat and camel stretch,
- Bird dog exercise,
- Straight leg abduction,
- Clam shell exercises,
- Adductor muscle strengthening,
- Squatting exercises.

Breathing Exercises: To enhance respiratory efficiency and relaxation.

Upper and Lower Limb Strengthening: To improve circulation, strength, and endurance.

Patient Education: Focused on posture correction, safe body mechanics, and activity modification to prevent strain and promote optimal function during pregnancy.

The Revised Oswestry Low Back Pain Disability Questionnaire was used as the outcome measure to monitor improvements.

IV. Results

After completing the structured antenatal rehabilitation program, the patient showed notable improvements in pain intensity, functional ability, and overall comfort during daily activities. Initially, the patient reported a pain score of 6/10 on the VAS and a disability score of 48.89%, indicating moderate disability.

Post-intervention assessment revealed:
- VAS reduced to 2/10,
- ODI reduced to 12%, reflecting minimal disability.

The patient experienced improved ability to perform prolonged sitting, standing, and routine household activities with less discomfort. Enhanced postural alignment, trunk stability, and confidence in safe movement were also observed.

Table 1: Pre- and Post-Intervention Outcomes

Outcome Measure	Pre-Intervention	Post-Intervention	Change
Visual Analog Scale (VAS)	6/10	2/10	↓4
Oswestry Disability Index (ODI)	48.89%	12%	↓36%

These results highlight the effectiveness of a comprehensive antenatal physiotherapy program in managing chronic low back pain due to sacroiliac joint dysfunction.

V. Discussion

Chronic low back pain during pregnancy is a common concern, often linked to biomechanical and hormonal changes affecting the pelvic joints. Sacroiliac joint dysfunction is frequently identified as a significant contributor, with instability resulting from increased ligament laxity due to hormonal influences, particularly relaxin and progesterone [2].

The patient presented with pain localized to the lower back and buttocks, aggravated by activities such as prolonged sitting, standing, and bending. These clinical features are consistent with SI joint-related discomfort [3].

The rehabilitation approach integrated evidence-based interventions aimed at addressing both symptoms and functional impairments. TENS was used as a non-invasive pain relief method, while positioning techniques ensured proper pelvic alignment and reduced mechanical stress.

Exercise therapy, including core strengthening and pelvic stabilization, improved mobility and reduced pain. Exercises such as glute bridges, pelvic tilts, bird-dog stabilization movements, and stretches contributed to better postural control and decreased discomfort. These findings align with research indicating that targeted exercise interventions improve outcomes in pregnant women with LBP [5].

Breathing techniques and patient education supported long-term functional improvements and maternal confidence in managing everyday tasks during pregnancy [6].

Post-intervention improvements in VAS and ODI scores confirmed the effectiveness of the rehabilitation program.

VI. Conclusion

A structured antenatal rehabilitation program, including core and pelvic strengthening, positioning, exercise therapy, and education, effectively reduced pain and functional disability in a multigravida woman with chronic low back pain due to sacroiliac joint dysfunction. Early, individualized physiotherapy interventions can enhance maternal comfort, mobility, and overall quality of life during pregnancy.

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