

## Case Report

# PELVIC DYSFUNCTION IN PREGNANCY: A CASE REPORT

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## ABSTRACT

Low back pain is one of the commonest musculoskeletal complaints during and after pregnancy. The pelvic/sacroiliac joints and the lumbar spine have been identified as its most common sources. This case report describes the treatment of post partum women who had symptoms and signs suggestive of a pelvic dysfunction and its physio therapeutic management. The results concluded that the pelvic dysfunction is a significant contributor to low back pain and activity limitation during and after pregnancy. The patient history and clinical examination provide clues to identify the type of dysfunction. Back pain started early in the pregnancy and increased with time. Pelvic dysfunction has been found to be associated with apparent functional leg length discrepancy and restriction of hip internal rotation. The application of physiotherapeutic modalities, manual correction of the dysfunction, patient education, pelvic stabilization exercises and gait re education can be successfully used to manage back pain associated with pregnancy.

**Keywords:** *Pelvic Dysfunction, Pregnancy, Physiotherapeutic Management*

## INTRODUCTION

Low back pain (LBP) is one of the most common complaints related to the pregnancy, with its prevalence ranges from 25% to 90%, being lowest in the population surveys that ask about back pain retrospectively and highest in those that follow women through pregnancy asking about any level of pain. An estimated 50-90% of women will experience some type of back pain during pregnancy making this experience so ubiquitous that treatment will often consist of counseling women to be patient and wait for post partum recovery (Perkins *et al.*, 1998). Recent research has documented the severity of back pain and shown that the back pain of pregnancy may impact the entirety of some women's lives. The problem not only persists well beyond pregnancy in a number of women but many women with chronic pain link its onset to a pregnancy. Thus preventing LBP becomes an issue of importance for all concerned with women's health and needs to be catered (Perkins *et al.*, 1998).

The pelvic/sacroiliac joints and the lumbar spine have been identified as the two most common areas of pain associated with pregnancy. Nilsson *et al.*, 2003 compared frequency of pain in these different areas among post partum women and found that 27% had pain in posterior pelvic and sacroiliac joints, 18% in area of lumbar spine, 39% both in areas of lumbar and posterior pelvic/sacroiliac joints, whereas 16% did not experience any pain at all.

Berg *et al.*, 1988 in their study on low back pain during pregnancy reported that out of 862 women who answered the questionnaires, about half developed some degree of low back pain. The most common reason for severe low back pain was dysfunction of the sacroiliac joints. Physically strenuous work and previous low back pain were factors associated with an increased risk of developing low back pain and sacroiliac dysfunction during pregnancy.

Owing to the physical disability and impact of pregnancy associated LBP on women's life, reporting, prevention and management of the same becomes indispensable. This paper describes the case report of a patient who developed LBP in pregnancy and its successful physio therapeutic management.

## CASES

A 23 year old female, 144 cm in height and 38 kg weight, 1.5 month post partum, presented to the physiotherapy OPD with pain in antero medial region of right thigh and difficulty walking. The pain started with the third month of conception and had progressed after that. She complained that the onset of pain was gradual and increased with the gain in weight with the pregnancy. The pain was nagging in

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nature at onset but it has changed to a feeling of cramp/spasm. She also complained of pain in the posterior superior iliac spine (PSIS) region and lumbosacral area on right side. The pain was moderate (Visual analogue scale (VAS) score 7.1cm), started especially on rising after sleep; moving from seated to standing position and walking. Coughing and sneezing did not increase the pain.

When asked for activity limitation due to LBP as per SF 36 Physical functioning scale (Ware and Sherbourne, 1992) (5 point likert scale “not at all, a little bit, moderate, quite a bit, extreme”) the patient revealed (Table 1) that she had extreme difficulty in carrying out vigorous to moderate activities such as running, moving a table; quite a bit difficulty in lifting or carrying groceries, climbing one or several flight of stairs and walking 100 meters or more. However bathing and dressing herself did not pose any difficulty.

**Table 1: Activity limitation as per SF 36 Physical Functioning scale**

Activity	Level of difficulty	
	Pre treatment (Day 1)	Post treatment (Day 10)
Vigorous activities such as running	Extreme	A little bit
Moderate activities such as moving a table	Extreme	A little bit
Lifting or carrying groceries	Quite a bit	Not at all
Climbing several flight of stairs	Quite a bit	Not at all
Climbing one flight of stairs	Quite a bit	Not at all
Bending, kneeling or stooping	Moderate	A little bit
Walking more than a kilometer	Quite a bit	A little bit
Walking half a kilometer	Quite a bit	Not at all
Walking 100 metres	Quite a bit	Not at all
Bathing or dressing self	Not at all	Not at all

### Examination

Visual inspection of the patient on Day 1 revealed an antalgic gait. Active spinal motion was visually assessed. Active spinal flexion was found to be limited with pain in PSIS region in end range. Palpation of the bony landmarks while the patient stood with the knees extended and feet a shoulder width apart showed a high PSIS and a low ASIS (Anterior superior iliac spine) on right side. The PSIS on the right side appeared to move superior as compared to left yielding a positive standing flexion test and standing hip flexion test (Gillet's test).

The straight leg raising test was found to be negative bilaterally. Faber's test for sacroiliac joint dysfunction was found to be positive on both sides. Compression and distraction tests for sacroiliac joint dysfunction did not elicit any pain bilaterally. Manual muscle tests for hip flexors, quadriceps, ankle dorsi flexors and plantar flexors and extensor hallucis longus showed normal muscle grades. Patellar tendon and ankle reflexes were bilaterally symmetrical. The patient's leg lengths were examined in supine by comparing the level of inferior aspect of medial malleoli (Weber Barstow maneuver). The left leg appeared shorter as compared to the right (Apparent leg length discrepancy of 2.3 cm). While holding the thumbs distal to both medial malleoli the patient was asked to sit up. The apparently short left leg appeared to lengthen, demonstrating a positive supine to sitting test. This finding was also confirmed by prone knee flexion test. Palpation of PSIS's height in sitting revealed high PSIS on right side. Cluster of positive 3 out of 4 tests (the standing flexion test, the prone knee flexion test, the supine long sitting test, and palpation of PSIS heights in sitting position) given by Cibulka and Koldehoff have reported high intertester agreement ( $k=.88$ ) for SIJD.

In addition the patient was found to have an iliac inflare dysfunction on R<sup>side</sup> (Umbilicus to ASIS distance being short (2.5 cm) on right side). Hip internal rotation ranges were found to be restricted bilaterally with greater restriction on right side. The patient had difficulty bearing weight on right lower limb in one leg standing position. The palpation of the pubic symphysis did not elicit any tenderness. The patient was assessed to have an anterior innominate dysfunction along with an iliac inflare on right side.

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### Intervention

The initial goal of the treatment was to relieve patient's low back pain and correct the suspected dysfunction. This was to be followed by patient education, strengthening exercises, gait reeducation and restoration of function. The treatment pattern followed is described in Table 2.

**Table 2: The treatment pattern followed for the patient**

Days	Treatment given
Day 1	Shortwave Diathermy (SWD) on back for 8 minutes, Transcutaneous electrical nerve stimulation (TENS) for 20 minutes on antero medial aspect of thigh, Muscle Energy Technique (MET) for adductors (pubic symphysis stabilization) (10 repetitions thrice daily) Patient Education: Avoidance of cross legged sitting, squatting, sitting unsupported and prolonged static postures along with back care ergonomics.
Day 2	SWD and TENS followed by mobilization for hip internal rotation on Right side with MWM technique (Mobilization with Movement) for hip rotation (6 repetitions); MET for iliac inflare Right side (6 repetitions).
Day 3 and 4	Continue with same treatment
Day 5	Added Pelvic rotation stretching ex for both sides. Isometric contractions for hip abductors and gluteal muscles (10 repetitions thrice daily).
Day 6 and 7	Continue with same treatment
Day 8	Gait re education and balance training in terms of lateral walking, self stretching exercises for piriformis, Iliotibial band and iliopsoas muscles bilaterally (6 repetitions twice daily)
Day 10	Repeat examination, manual mobilization for hip internal rotation and iliac inflare was discontinued. Gait reeducation, isometric exercises and self stretching was continued
Day 11	Continue with same exercises
Day 12	Tandem walking, one leg standing and abdominal exercises started

## RESULTS AND DISCUSSION

The patient was re assessed for pain and physical functioning on Day 10. The pain had reduced from being moderate to mild (VAS score, 2 cm). She was able to bear partial weight in one leg standing. She no longer complained of pain in antero medial thigh and experienced mild pain in back. Faber's test was positive in end range on right side. The apparent leg length discrepancy had reduced to 1.6 cm and iliac inflare to 0.5 cm. The PSIS on right side still moved superior (though not as much as before) on standing flexion and gillet's test. The hip internal rotation range of motion had improved bilaterally.

The patient had no difficulty in lifting or carrying groceries, climbing several flight of stairs, walking half a kilometer and bathing or dressing self. She experienced a little bit difficulty in carrying out vigorous and moderate activities, bending, kneeling or stooping and walking more than a kilometer.

The patient was made to continue with the same treatment with addition of tandem walking, abdominal exercises and one leg standing on Day 12. She was reassessed for pain, spinal range of motion, apparent leg length discrepancy, inflare and physical examination tests after a month. The patient was completely pain free, had full spinal range of motion, gait abnormality restored to near normal and no difficulty in carrying out activities as per SF36 physical functioning scale.

### Discussion

Pelvic dysfunction has been found to be a significant contributor to LBP associated with pregnancy. The subject in the study was very young, back pain had started with the third month of conception and had persisted thereafter. The patient had considerable difficulty carrying out vigorous and moderate activities, lifting or carrying groceries, climbing stairs, bending, kneeling or stooping and walking more than 100 meters. Kristiansson *et al.*, 1996 in their prospective study on back pain during pregnancy have reported that 76% women attending the antenatal clinic reported back pain at some time during pregnancy. 61% percent reported onset during the present pregnancy. 30% women with the highest pain score reported

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great difficulties with normal activities. Back pain started early in pregnancy and increased over time. Young women had more pain than older women.

The back pain experienced by the study subject was moderate in nature. Stapleton *et al.*, 2002 in a study on prevalence of recalled low back pain during and after pregnancy found that 35.5% women recalled having least moderately severe back pain during pregnancy. Women who reported such back pain were younger, were more likely to report ill health and be unemployed. Increasing parity was not associated with current back pain. The most commonly used treatments were bed rest, pain killing medication, physiotherapy, and chiropractic treatment. Half of those with symptoms were untreated. 68% of women who experienced moderate or worse low back pain during pregnancy continued to experience recurring low back pain with a self reported reduction in their health.

Sacroiliac joint/pelvic dysfunction has been found to be a significant source of LBP in the present study and patient history and clinical examination have provided clues to identify the type of dysfunction. The application of physiotherapeutic modalities, manual correction techniques, patient education, pelvic stabilization exercises and gait reeducation have been successfully used in managing the condition. Daly *et al.*, 1991 in their retrospective study on back pain in pregnancy reported that eleven of the 23 women with back pain met diagnostic criteria for sacroiliac subluxation. The criteria included absence of lumbar spine and hip pathology, pain in the sacral region, asymmetrical movement of the posterior superior iliac spines upon forward flexion, a positive pelvic compression test and asymmetry of the anterior superior iliac spines. The cohort of 11 women meeting criteria for sacroiliac subluxation was treated with rotational manipulation of the sacroiliac joints. After manipulative therapy, 10 of the 11 women (91%) had relief of pain and no longer exhibited signs of sacroiliac subluxation.

The association of limited hip internal rotation with SIJD has been supported by previous studies which have reported a correlation between recurrent LBP and limited hip internal rotation (Mellin, 1988) more lateral rotation than medial rotation in patients with LBP (Ellison *et al.*, 1990) and restriction of internal rotation especially on the side of posterior innominate (Cibulka *et al.*, 1998). A hypomobile sacroiliac joint may stress surrounding or intervening tissues of one or both sacroiliac joints and they fail in their presumed function of dissipating force from head and trunk above or from the ground below. Most of the muscles of the pelvis have an attachment to the lumbar spine (iliopsoas, multifidus, quadratus lumborum) which can influence it directly or indirectly and any imbalance in them can lead to a dysfunction (Vleeming *et al.*, 1989).

Weight gain leading to shift in centre of gravity, requiring changes in posture to maintain body balance (Sandler, 1996), the instability of the pelvic girdle due to an increase in reproductive or maternal hormones that produce ligament laxity and muscle weakening (Vleeming *et al.*, 1995; Snijders *et al.*, 1993 and Vleeming *et al.*, 1996) have been suggested as the causes of back pain in linked with pregnancy. At the same time it is noteworthy that back pain often begins well before significant weight and body shape changes and does not directly correlate with weight and posture changes. Peak onset is between fifth and seventh months, before the period of greatest increase in weight, and the prevalence of pain plateaus or decreases towards the end of pregnancy (Fast *et al.*, 1987 and Andersson, 1990). The literature tends to differ as far as the cause of back pain in pregnancy is concerned and calls for further research in the form of case reports and randomized controlled trials.

### **Conclusion**

The results of this report suggest that pelvic dysfunction is a significant contributor to LBP associated with pregnancy. The patient history and clinical examination can provide valuable clues for identification of type of dysfunction and physiotherapeutic techniques can be successfully used to manage the pain and activity limitation posed by it.

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