Pelvic girdle pain syndrome in the postpartum period

Síndrome da dor cintura pélvica no puerpério

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Abstract

Introduction: Pelvic girdle pain (PGP) is common during pregnancy and the postpartum period, although only a minority of patients experience severe, function-limiting pain. **Objective:** To analyze the factors contributing to PGP in the puerperium and summarize the main therapeutic approaches for its management. **Methods:** We describe a case of PGP in the immediate postpartum period following vaginal delivery in a primiparous woman. Shortly after delivery, the patient developed severe pelvic pain that prevented ambulation. The potential contribution of labor and prolonged upright positions, which increase pressure on the pelvic girdle, was examined. The presence of symptoms suggestive of neurologic involvement prompted additional diagnostic testing and multidisciplinary assessment for differential diagnosis. Pain management required a multimodal strategy combining pharmacological treatment and physiotherapy. The case's complexity and difficulty achieving adequate pain control resulted in prolonged hospitalization during the puerperium. **Conclusion:** This case underscores the importance of considering PGP syndrome in the differential diagnosis of other osteopathies. Given the multifactorial nature of PGP, effective management requires a coordinated multidisciplinary approach.

Keywords: Pelvic girdle pain. Postpartum. Low back pain.

Resumo

Introdução: *A dor da cintura pélvica (DCP) é comum durante o ciclo gravídico-puerperal, porém apenas uma pequena parcela das pacientes pode cursar com dor intensa e incapacitante.* ***Objetivo:*** *Analisar os fatores relacionados à DCP no puerpério e as principais abordagens terapêuticas para essa condição.* ***Métodos:*** *Relata-se um caso de síndrome da DCP no puerpério imediato de parto vaginal em uma primípara. No período pós-parto, a puérpera evoluiu com dor pélvica incapacitante, impossibilitando a deambulação. Questionou-se se o trabalho de parto e o tempo de exposição às posições verticalizadas, que aumentam a pressão sobre a cintura pélvica, podem ter influenciado o quadro de dor intensa. A paciente apresentava sintomas que sugerem lesão neurológica e o diagnóstico diferencial exigiu exames complementares e avaliação multidisciplinar. Para o diagnóstico diferencial da DCP, foram realizados vários exames complementares e avaliação multidisciplinar. No manejo da dor, adotou-se uma abordagem combinada, incluindo o uso de múltiplos fármacos e intervenções fisioterapêuticas. A complexidade do caso e a dificuldade no manejo da dor levou a uma internação puerperal prolongada.* ***Conclusão:*** *Esse caso demonstra a importância de considerar a síndrome da DCP no diagnóstico diferencial com relação às demais osteopatias. O tratamento necessita de um manejo multidisciplinar devido à complexidade dos fatores correlacionados.*

Palavras-chave: *Dor da cintura pélvica. Pós-parto. Dor lombar.*

Introduction

Lumbopelvic pain (LPP) and pelvic girdle pain (PGP) are highly prevalent, affecting nearly half of women during the pregnancy-puerperal cycle.[1,2] These conditions are major contributors to functional limitation and can significantly impair daily activities and quality of life in pregnant and postpartum women.[1] Despite their prevalence, inconsistencies in the classification, diagnosis, and management of LPP remain. While many women recover spontaneously during the puerperium, a substantial number continue to report symptoms three months after delivery.[2]

Physiological musculoskeletal adaptations throughout the pregnancy-puerperal cycle predispose women to painful symptoms. Pregnancy itself is a well-recognized risk factor for both LPP onset and persistence after childbirth.[3] Hormonal fluctuations, fluid retention, and increased pelvic girdle mobility contribute to symptom development during pregnancy and the postpartum. Increased ligamentous laxity in the spinal longitudinal ligaments and enhanced mobility of the pubic symphysis and sacroiliac joints alter the biomechanical mechanisms responsible for lumbopelvic stabilization. When these systems fail to act synergistically, pain and discomfort may occur.[1]

Symptoms often intensity near term due to further increases in pubic symphysis and sacroiliac joint mobility, which facilitate fetal passage. In addition, labor places considerable mechanical stress on the pelvis, including compression by fetal parts, which can trigger or exacerbate pelvic PGP. Although most women with LPP recover spontaneously, severe and persistent pain can affect up to 8% of patients two years postpartum.[3]

This case report describes a severe presentation of postpartum pelvic girdle pain in a patient with multiple risk factors, underscoring the importance of multidisciplinary management.

Case report

We describe the case of a 21-year-old Caucasian woman with two previous miscarriages and a history of pelvic pain before pregnancy, who was admitted at 39 weeks after premature rupture of membranes, without contractions and with a closed cervix. Labor induction with oral misoprostol resulted in adequate uterine activity after 12 hours, and the patient progressed through eight hours of active labor to reach full cervical dilation.

For most of the active phase, the patient preferred the dorsal or lateral supine position and did not receive epidural analgesia. During the second stage, she experienced intense pain, prompting frequent positional changes between sitting and squatting. In the last 30 minutes of the expulsive phase, she adopted the all-fours position at her own request. Vaginal delivery occurred after 90 minutes of expulsive effort, without episiotomy, resulting in a second-degree posterior perineal laceration. The newborn weighed 2,970 g, with an Apgar score of 7 at five minutes.

On postpartum day one, the patient reported severe lower back pain, rated 8/10 on the Visual Analogue Scale (VAS), radiating to the right lower limb and requiring continuous analgesia with only partial relief.

Given the persistent pain, neurological and orthopedic evaluation were conducted on postpartum day four. Neurological examination revealed lumbar muscle contracture and suspected radicular syndrome or hip dislocation, prompting a lumbosacral MRI and initiation of gabapentin (300 mg/day). Orthopedic examination identified pain with hip motion, inability to bear weight on the right leg, restricted abduction, and reduced muscle strength (2/5 on the Oxford Scale). Palpation elicited pain in the greater trochanter, posterior gluteal region, sacroiliac joint, and pubic symphysis. No edema or signs of deep vein thrombosis were detected.

Lumbar MRI demonstrated mild degenerative changes in the L3–L4 interapophyseal joints, consistent with mild bilateral facet arthrosis, with no evidence of necrosis, pubic symphysis rupture, disc protrusion, or other abnormalities. By postpartum day ten, the patient continued to experience gait impairment and pain despite treatment with paracetamol, dipyrone, tramadol, ketoprofen, and gabapentin. Additional imaging of the thoracic spine and hip was therefore obtained for further diagnostic clarification. The thoracic MRI showed no abnormalities, while the hip MRI revealed an area of bone marrow edema with contrast enhancement in the right sacroiliac joint, suggesting acute inflammatory changes, along with injury to the right quadratus femoris muscle and narrowing of the ipsilateral ischiofemoral space. Electroneuromyography revealed no evidence of polyneuropathy, myopathy, or radiculopathy.

On the fifteenth postpartum day, the patient continued to experience severe pain (VAS 10/10), mainly affecting the posterior aspect of the right lower limb and worsening with ambulation, even when assisted. Mobility was assessed using the Johns Hopkins Mobility Scale, a validated clinical tool for monitoring functional mobility during hospitalization, yielding a mobility score of 5/8. Clinical evaluation revealed muscle weakness, decreased sensation, impaired coordination, and limited range of motion, which compromised activities of daily living, including newborn care.

During hospitalization, the patient and her family received psychological and social work support due to family conflict and initial resistance to hospital discharge and outpatient pain management. She remained hospitalized until the 28th postpartum day, during which she experienced gradual improvement in pain and lower limb mobility with physiotherapy and tapering of analgesics. Upon discharge, she was advised to continue physiotherapy and outpatient follow-up.

Discussion

Low back pain (LBP) is highly prevalent during pregnancy, affecting more than two-thirds of pregnant women, while approximately one in five experience pelvic pain,[1-2] with symptoms tending to worsen as pregnancy progresses.[3] Physiotherapy plays a crucial role in both preventing and managing pregnancy-related LBP through interventions such as core stabilization, postural training, manual therapy, and pelvic support belts.[4]

Recent studies have demonstrated that supervised exercise programs, including clinical Pilates and deep muscle strengthening, can significantly reduce pain intensity and improve functional capacity during pregnancy.[5]

In addition to these physical benefits, physiotherapy has been associated with positive effects on mental health, an important consideration given that persistent pain is a known risk factor for postpartum anxiety and depression.[6] Therefore, physiotherapy is a safe, effective, and evidence-based approach that should be integrated into multidisciplinary care for pregnant and postpartum women.

Significant musculoskeletal adaptations occur throughout the pregnancy-puerperal cycle, placing women at increased risk of developing LBP and PGP.[7] Although the terminology surrounding pregnancy-related LBP and PGP remains inconsistent, several authors recommend distinguishing between these two conditions.[8]

PGP is defined as pain located between the posterior iliac crest and the gluteal fold, particularly around the sacroiliac joints, and may radiate to the posterior thigh. By contrast, LBP is characterized by pain below the rib margin and above the gluteal folds, with or without radiation to the lower limbs.[9] The symptoms observed in the present case are consistent with PGP, given the marked LBP radiating into the right thigh and significantly impairing walking and daily activities, including newborn care.

In addition to gestational contributors, the patient exhibited risk factors for PGP, including young age, parity, a history of stress, and family conflicts. A 2020 meta-analysis identified several risk factors associated with postpartum PGP,[10] such as a previous history of LBP and a body mass index greater than 25. Obstetric factors including PGP during pregnancy, depression, and heavy workload also increased risk, although obstetric and delivery-related factors were not statistically significant. The authors underscored the need for further studies to clarify these associations.[8]

A large cohort study of more than two thousand women found that pelvic trauma and high emotional stress may elevate PGP risk.[11] In the present case, the combination of primiparity and ongoing family conflict likely contributed to symptom severity and persistence.

Given the disabling musculoskeletal symptoms, a comprehensive differential diagnosis was essential, including conditions such as PGP, pubic symphysis diastasis, osteonecrosis, and nerve root compression.

Even after establishing a presumptive diagnosis of PGP, it is important to classify the condition within the broader LPP subgroups, distinguishing sacroiliac joint involvement from pubic symphysis dysfunction.[7] This is crucial for selecting a targeted treatment. In the present case, several complementary examinations were performed to rule out other causes, since the patient presented with refractory pain and significant lower-limb weakness that impaired ambulation.

Lumbar and hip MRI findings showed degenerative changes at L3 and L4 and evidence of injury to the right quadratus femoris muscle, supporting the diagnosis of PGP and aligning with the patient´s clinical presentation. The L3 and L4 alterations may have arisen or worsened during pregnancy due to the forward shift in the center of gravity caused by fetal weight, increased axial load leading to disc compression, and estrogen-mediated joint laxity.[12] However, these factors may have been exacerbated by the duration of labor, particularly prolonged periods in decubitus positions that place sustained pressure on the pelvic girdle. Additionally, the quadratus femoris muscle injury could have occurred during labor, since the patient had no prior symptoms suggestive of such an injury.

Current recommendations emphasize varying maternal positions throughout labor to support maternal comfort and labor progression.[13] Upright positions (sitting, semi-sitting, and squatting) and the all-fours position are frequently used. However, the musculoskeletal consequences of these positions are poorly understood, and prolonged maintenance may contribute to the development or worsening of postpartum LPP.

In this case, multidisciplinary management was essential. Musculoskeletal complications frequently require careful differential diagnosis and multifactorial treatment. The patient received care from a multidisciplinary medical team (obstetrics, neurology, and traumatology), as well as physiotherapists and psychologists.

Notably,physiotherapy proved fundamental in managing the condition, and earlier initiation might have shortened the hospitalization period. During the clinical course, muscle weakness and sensory loss symptoms raised suspicion of neurological injury, reinforcing the need for ongoing physiotherapy care during gestation and the postpartum period. This not only optimizes childbirth outcomes but also supports more efficient recovery by addressing pregnancy-related musculoskeletal adaptations.

The prolonged hospitalization also created challenges for family dynamics, newborn care, and healthcare resource allocation. In this case, the patient's limited financial capacity to continue outpatient physiotherapy hindered timely hospital discharge.

Conclusion

This case report describes a a severe presentation of PGP during the puerperium. Although most women with pregnancy-related LBP or PGP recover spontaneously after delivery, up to 8% experience persistent or debilitating symptoms. The patient exhibited multiple risk factors that might have been addressed during prenatal care and childbirth. Given the high prevalence of PGP throughout the pregnancy-puerperal cycle, early identification of at-risk individuals is critically important.

It remains unclear whether prolonged labor and extended time spent in upright positions contributed to the early postpartum onset of intense pain. Additionally, diagnostic challenges underscore the critical role of clinical suspicion in recognizing PGP. Symptoms indicative of neurological injury warranted a comprehensive differential diagnosis supported by imaging examinations and multidisciplinary assessment.

This case required collaboration among three medical specialties, psychology, and physiotherapy. This coordinated multidisciplinary approach was essential to achieve optimal patient outcomes.

Authors' contributions

All authors contributed to the conception and design of the case report. SBJ, EVS, and CH collected the data. All authors participated in data analysis and interpretation and approved the final version of the manuscript.

Data availability statement

Research data are available from the corresponding author upon reasonable request.

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