

Femoral Neuropathy in Postpartum: A Case ReportRachid Bzikha^{1*}, Hanae Zniber¹, Moncif El Fdil², Asmae Grine¹, Bachira El Bekkali¹, Najlaa Gribi¹, Najia Zerai¹, Abdelaziz Baidada¹, Aicha Kharbach¹¹Department of Gynecology-Obstetrics M1-M3 Souissi Maternity, Mohamed V University, Ibn Sina Teaching Hospital, Rabat-Morocco²Orangers maternity, Mohamed V University, Ibn Sina Teaching Hospital, Rabat-Morocco***Corresponding author**

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**Abstract:** Various peripheral neuropathies may be seen in post-partum period, frequently the result of birthing injuries (compression) and rarely related to anesthesia complications. The incidence of neurological complications during postpartum period is estimated at 1 to 4 per 10 000 deliveries apart any epidural analgesia, Injury of femoral nerve is now a rare occurrence, however the knowledge of its mechanism will enable early detection allowing obstetricians and midwives a rapid care and total recovery for patients. Here we present a case of unilateral femoral neuropathy diagnosed in our unit that will allow us to understand the phenomenon of postpartum femoral neuropathy.**Keywords:** Neuropathy, femoral nerve, postpartum, physical therapy.**INTRODUCTION**

Femoral nerve is the largest branch of the lumbar plexus; it is the major nerve supplying the anterior area of the thigh. Post-partum femoral neuropathy following vaginal delivery is a rare entity, described first time by Winckel in 1878, the incidence is approximately 2, 8 per 100 000 deliveries, of which 25% are bilateral [1], this rate is falling steadily due to the modern obstetric practice [2].

We describe here a case of a woman who complained in the immediate post-partum of difficulties with standing from a sitting position, and buckling right knee persistent for several weeks for which Electromyographic studies have objectified right femoral neuropathy.

CASE PRESENTATION

A 33 years old woman, multigravida, with a history of 3 vaginal normal deliveries was referred to our department in labor at full term of pregnancy, her body mass index (BMI) 27, 5 kg/m², (weight 75 kg, height 1, 65 m), and vital signs are stable. A gestational diabetes was noticed during follow-up and treated by insulin, she does not smoke or drink, and she had no significant history of trauma or familial peripheral neuropathy.

Examination on admission finds cervical dilation of 2 cm, the first stage of labor took six hours, hypo contractility corrected with oxytocin, and no anesthesia was used at request of the patient. After complete dilatation, 3 hours were needed to begin expulsive efforts.

In Lithotomy position, an assisted vacuum extraction with mediolateral episiotomy, delivered from the occiput posterior position a healthy female child weighing 3700g with good Apgar.

In the immediate post-partum, the patient reported right leg numbness and severe weakness of the right knee, more than that she fell while trying to get up, all this evolving without pain. Pelvic radio was normal, the neurologic examination revealed decreased right patellar tendon reflex while the left reflex was preserved, 4/5 weakness in right hip flexion and knee extension, mild quadriceps weakness and sensory loss in her medial thigh and anteromedial calf.

Electromyographic EMG studies deemed inconclusive at this stage have been scheduled within a 4 weeks in coordination with neurology service, EMG affirm the peripheral neuropathy in femoral nerve, effectively the right lower limb was abnormal, fibrillation increased and recruitment reduced in the quadriceps bundles supplied by femoral nerve, on the other hand studies on tensor fascia lata, gluteus Maximus, gluteus medius and tibialis anterior were normal.

The treatment consisted of a physical therapy to strengthen the muscles, knee brace to maintain leg stability. The patient was discharged 5 days later by

providing home physical therapy; the deficit was resolved over the course of 4 months.

DISCUSSION

The femoral nerve derives from the nerve roots L2-L4; it descends through the fibers of psoas, penetrates the thigh crossing the inguinal ligament, and divides into motor branches to hip flexors muscles and knee extensors in addition to sensory twigs intended for the anteromedial thigh skin and medial side of leg and foot [3].

Injuries of femoral nerve in post-partum can be explained by its pathway through the thigh root and proximity to inguinal ligament, compression is the most common theory[4], in fact the pressure against the inguinal ligament can occur related to extended lithotomy position in second stage of labor cause of hyperflexion and exaggerated abduction, moreover large dimensions of fetal head can compress the lumbosacral plexus mainly at L4 during vaginal delivery, also instrumental extraction stretch the femoral nerve[5]. In case of iliopsoas muscle involvement, it is supposed that the stretching and ischemia of the nerve is produced in psoas groove where the iliac fascia can compress the nerve [4].

Other mechanisms of femoral nerve damage include retroperitoneal hematoma, pelvic pathologies like appendiceal abscess, inguinal ganglions, and aneurysm of iliac artery .we can also mention the impact of self-retaining retractors during cesarean section or other pelvic surgery[6].

Symptoms of motor deficiency associated femoral neuropathy include weakness in hip flexion and knee extension, and abolition of patellar tendon reflex, which reflects supply lack for iliopsoas and quadriceps ,the deficit should be limited to the latter by contrast thigh adductors mobility should be preserved given their dependence on obturator and sciatic nerves. Sensory deficit clinically manifested as numbness of medial thigh and anteromedial calf [5, 7].

In our present case we can explain the involvement of the nerve by prolonged lithotomy posture result of the long second stage of labor probably due to occiput posterior position.

The diagnosis of femoral neuropathy is usually done by clinical evaluation and patient-reported history which may be sufficient in the majority of cases and allows rapid care[4]; otherwise electromyogram remains the fundamental paraclinical examination to objectify the nerve suffering but its disadvantage is that it remains normal for up 3 weeks after nerve involvement [4,8]. The management consists of a physical therapy in order to increase muscle strength and knee bracing to improve leg stability in addition to

assistive neurologic examination [8]. Usually patients have spontaneous recovery after 1 to 6 months [7, 8].

CONCLUSION

Most cases of post-partum femoral neuropathies are self-limited with excellent prognosis, it remains an infrequent event and declining incidence is related to increased cesarean section and modern obstetric practice, despite that all obstetricians should be able to detect this kind of event and predict rapid care with the collaboration of neurologists.

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