Arch Gynecol Obstet (2010) 282:349–350
DOI 10.1007/s00404-010-1436-y

LETTER TO THE EDITOR

# Intrapartum obturator neuropathy diagnosed after cesarean delivery

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Received: 29 December 2009 / Accepted: 9 March 2010 / Published online: 20 March 2010


**Abstract** Several postpartum neurologic injuries have been described in detail, while obturator nerve injuries are rarely reported. We report a woman who had weakness of the right leg and groin pain after cesarean delivery under general anesthesia. Obturator neuropathy was confirmed by electromyography and no compressive lesion of the nerve was seen on magnetic resonance imaging. The patient was treated conservatively and followed until she recovered fully.

**Keywords** Obturator nerve · Postpartum · Electromyography · Treatment outcome · Magnetic resonance imaging

Several postpartum neurologic injuries have been described in detail, while obturator nerve injuries are rarely reported [1–3]. Given its rarity, the prognosis and treatment of postpartum obturator neuropathy are not well known. We report a patient who had a unilateral obturator neuropathy during pregnancy, which was diagnosed after a cesarean delivery under general anesthesia.

A 33-year-old woman presented with right leg weakness and groin and posterior thigh pain. She had undergone an elective cesarean section 2 months previously, because cephalopelvic disproportion had been suggested. She remained at near bed rest for 8 weeks before the delivery due to preterm labor, so she did not know exactly when her weakness began. The neurological examination revealed weakness of right hip adduction [grade 2 on the Medical Research Council (MRC) scale] and hip flexion (grade 3 on the MRC scale). The deep tendon reflexes and sensation were normal. She had a wide-based slow gait with dragging of the externally rotated right leg. Nerve conduction studies including the saphenous and femoral motor nerves showed no abnormality. However, needle electromyography (EMG) revealed fibrillation potentials and positive sharp waves in the right adductor muscles with reduced recruitment patterns of the motor unit action potentials (MUAPs). The findings were normal in the other muscles sampled, including the iliopsoas and vastus medialis muscles. Pelvic magnetic resonance imaging showed no lesion compressing the nerve, but showed a signal change in the right adductor muscles that was consistent with denervation (Fig. 1) [2].

No medication was given because she was breastfeeding. She received physical therapy, including electrical stimulation and strengthening exercises for about 2 months. Subsequently, her motor power improved to grade 4. The follow-up EMG still showed abnormal spontaneous activities; however, the recruitment pattern of the MUAPs was improved. Gait speed and functional mobility were also improved, although a tendency to hip external rotation remained. After another 4 months, her symptoms had resolved completely.

Wong et al. [3] reported that the incidence of postpartum nerve injury was 0.92%. Among postpartum neuropathies, lateral femoral cutaneous neuropathies and femoral neuropathies are the most common [3, 4]. Postpartum sciatic neuropathies associated with positioning and spinal anesthesia have also been reported [3, 5–7]. Nulliparity, prolonged second stage of labor, assisted vaginal deliveries, short maternal stature, and a large infant are related to

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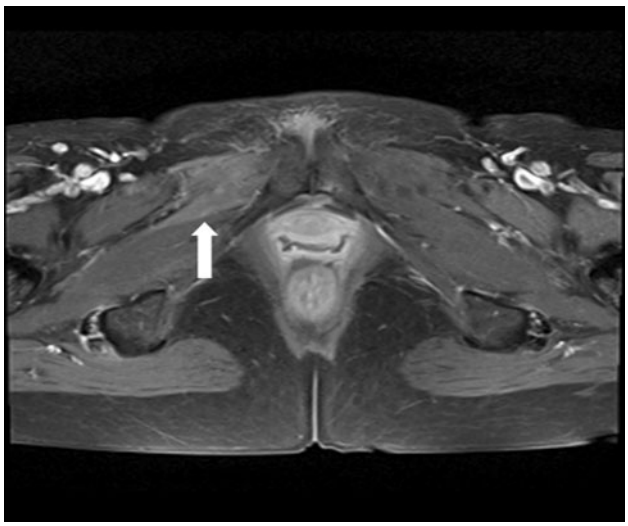

**Fig. 1** The partially visualized right adductor muscles show high signal intensities (*white arrow*) on postcontrast fat-suppressed T1-weighted magnetic resonance images

postpartum neuropathies [1, 3, 8, 9]. Since neural compression develops when the fetus descends into the pelvis, the symptoms of intrapartum lumbosacral plexopathies usually occur during labor [1, 8, 10]. Suggested mechanisms for obturator nerve injury following surgery are stretching, compression by a retractor, and hematoma [7, 11–13]. Given its deep location, it is difficult to retract or stretch the obturator nerve during cesarean operation and our patient had no hematoma in the imaging study. Neuropathies caused by compression during pregnancy are reported infrequently [1, 3, 10]. Our patient was a 152-cm-tall primipara and her baby weighed 3.9 kg, which could have contributed to nerve injury during pregnancy, though there was no fetal descent. The exact onset of her weakness was unknown and so the precise onset of the neuropathy is also difficult to determine, and it is not clear whether it occurred during pregnancy or surgery. However, the full recovery 8 months after the delivery suggests that she had demyelination pathology, primarily. This supports the possibility of compression by the fetal head during pregnancy, rather than direct injury during surgery.

There is no standard treatment for neuropathy in obstetric patients, although conventional therapy, as in other obturator neuropathies, could be helpful [7, 11, 12]. Based on ours and another case, obturator nerve injury during pregnancy seems to have a good functional outcome [14].

**Conflict of interest statement** None.

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