Femoral Neuropathy following Vaginal Hysterectomy

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Introduction

Vaginal hysterectomy is one of the common surgeries performed by the gynaecologist. Standard textbooks of gynaecology mention about stretch injury of the sciatic nerve and its peroneal branch as complications following vaginal hysterectomy, but not about femoral neuropathy. Hopper et al [1], described this rare entity by stating that this condition is not mentioned in reviews cataloguing complications of more than 1800 vaginal hysterectomies. Three cases of femoral neuropathy following vaginal hysterectomy are presented.

Case 1

A 36 year old patient of abnormal uterine bleeding with first degree uterovaginal prolapse was taken up for vaginal hysterectomy under epidural anaesthesia and the surgery lasted for 2 hours 15 minutes. She was kept on bed rest and continuous bladder catheter for 48 hours. On second postoperative day catheter was removed and the patient collapsed to the ground the moment she got up from the bed. Her vitals were within normal limits. Neurological examination revealed gross weakness of the quadriceps femoris muscles (more on right side), absent knee jerks and blunted sensation over anterior aspect of both thighs. The neurophysician opinion was "Postoperative bilateral femoral neuropathy". She was managed with graded physiotherapy. The patient responded to treatment and by third week she was walking with support and sensations had completely recovered. She was advised to continue physiotherapy at discharge and she was symptom free by six weeks.

Case 2

A 60 year old patient underwent vaginal hysterectomy and repair for uterovaginal prolapse. The surgery lasted for 1 hour 50 minutes. On the second post operative day the patient complained of tingling and numbness over her left thigh. On examination she had loss of light touch and pin prick over the anteromedial aspect of thigh and medial side of calf on the

left side. There was no other neurological deficit. Clinical diagnosis was femoral neuropathy and she was managed with injection neurobion and physiotherapy. By seventh postoperative day she had recovered completely.

Case 3

A 42 year old patient underwent vaginal hysterectomy and the operation lasted for 2 hours 30 minutes. Once again on second postoperative day she developed features of sensorimotor femoral nerve palsy. Conservative management was started. Sensory impairment recovered by second week. However she could barely walk with support at the end of the fourth week. She was discharged on request with advice to continue physiotherapy. She was lost to follow up.

Discussion

Three cases of genital prolapse without any other major preoperative ailments, underwent vaginal hysterectomy. They were operated under regional anaesthesia and swing stirrups on single straight rods were used for lithotomy position. The duration of surgery was 1 hour 50 minutes to 2 hour 30 minutes. All three cases developed femoral neuropathy which was managed with physiotherapy.

Abdominal hysterectomy is said to be the most frequent cause of iatrogenic femoral nerve injury [2] and the offending factor is the self-retaining retractor, which entraps the nerve between its metal blade and the bony lateral pelvic wall. However uncommon, lithotomy position during vaginal hysterectomy can also be the culprit. The femoral nerve after being formed from the posterior branches of L2, L3 and L4 roots descends between the psoas major and iliacus muscle and exits from the abdominal cavity posterior to the inguinal ligament and gives motor branches to the anteromedial compartment of the thigh and sensory supply to the anteromedial aspect of the thigh and medial aspect of the leg.

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Fig. 1 : Stirrups leading to excessive flexion of thigh with abduction and external rotation

The most likely cause of femoral nerve palsy following vaginal hysterectomy in our cases is the entrapment of the nerve at the inguinal ligament for a prolonged duration. The swing stirrups on single straight rods or “candy cane” stirrups are notorious for causing this entrapment. These stirrups lead to excessive flexion of the thigh with abduction and external rotation of the hip (Fig.1). In this position the nerve can become acutely angulated and twisted beneath the unyielding inguinal ligament leading to injury [3]. Postural nerve entrapment has also been reported following vaginal delivery in lithotomy position occasionally. Winkelman [4], reported transient femoral neuropathy in 84 women following childbirth. Shroff PP et al [5], reported femoral neuropathy following haemorrhoidectomy performed in lithotomy position.

Some of the risk factors reported are BMI of 20 kg/meter square or less, prolonged duration of surgery in lithotomy position, excessive pressure on patient's thigh during surgery [6], diabetes mellitus with its propensity for neuropathy [1] and history of smoking [3].

The nerve injury is either neurapraxia or axonotmesis and the prognosis is excellent. The recovery of femoral neuropathy following vaginal hysterectomy is nearly complete. The sensory deficit usually resolves within five days and motor dysfunction takes upto ten weeks. However, complete recovery time of two years has also been reported [7]. Management of post operative femoral neuropathy involves galvanic muscle stimulation, stretching and passive exercises. Once the patient regains quadriceps function, isometric and isotonic exercises are advised.

Fig. 2 : Llyod – Davies leg support

The most important preventive aspect is proper positioning of the patient during surgery. The “candy cane” stirrup should be abandoned and the Llyod-Davies leg support should be used in its place (Fig. 2). Hip flexion and abduction angles should not exceed 45 degrees (height of the lithotomy pole should also be optimum for this) and a check is to be kept on the operating time. In prolonged surgery, the femoral artery should be palpated below the inguinal ligament and if the pulsation is diminished, the patient's position should be readjusted. Finally other risk factors like diabetes, should be managed appropriately.

Conflicts of Interest

None identified

References

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