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FEMORAL NEUROPATHY FOLLOWING VAGINAL HYSTERECTOMY

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ABSTRACT

We report a case of unilateral femoral neuropathy following vaginal hysterectomy due to lithotomy position given for prolonged duration. An anaesthesiologist should take the responsibility of informing the surgeon of potential nerve injuries from such positions and should prevent the patients from developing this iatrogenic injury.

KEYWORDS: Femoral neuropathy, vaginal hysterectomy, lithotomy

INTRODUCTION: Peripheral nerve injuries often result from patient positioning. Mechanisms of injury include stretching, compression and ischemia. Common peroneal nerve injury is most commonly seen with lithotomy position. Reports of femoral neuropathy have been rare.

CASE REPORT: A 35 year old average built female was diagnosed with III degree utervovaginal prolapse. She had no other co morbidities. All routine investigations were normal. She was posted for Elective Vaginal hysterectomy. She was given Spinal Anaesthesia in left lateral position with 3.6 cc 0.5% bupivacaine and 5 µg dexmeditomedine

using a 23 G spinal needle. She was given lithotomy position in swing stirrups on straight rods when level of anaesthesia reached T6 level and surgery lasted for 2 hours. Intraoperative and immediate post operative course was uneventful. Sensory and motor effect of spinal anaesthesia remained for..... hours. On examination, there was complete sensory recovery. Motor power of right lower limb was 5/5 whereas in the left lower limb, motor power of hip and knee flexors was 3/5. The next day, she complained of tingling sensations over anterior part of the thigh. Paraesthesia was present over the anteromedial part of thigh. She was reassured and physiotherapy was started from second day onwards. She was given Vitamin B12 intramuscular injections on alternate days. Neurophysician reference was sought for and oral pregabalin was initiated. Gradually over a period of 5 days, her neurological deficits completely resolved.

DISCUSSION

Femoral neuropathy was first described by Descartes in 1822 as "anterior crural neuritis.". It is seen with various conditions and procedures, including hip replacement, femoral vessel catheterizations, obstetric and gynecologic procedures, general and urologic surgery explorations and hematologic or neoplastic conditions. Other possibilities are direct spinal cord trauma, cauda equina syndrome, complete extrusion of already protruded intervertebral disc, direct trauma to peripheral nerves, diabetes mellitus, leprosy, and various immunologic disorders. Duration of lithotomy for prolonged hours, a body mass index of 20 or less, history of smoking within 30 days of the procedure and radiation exposure also increase the risk for femoral neuropathy. In our patient, we could rule out all above problems except longer duration of surgical procedure in an unphysiological lithotomy position.

The femoral nerve is formed by the ventral rami of L2-L4, specifically the posterior divisions of the lumbar plexus. It travels posterior to the inguinal ligament within the muscular lacuna which contains iliopsoas muscle. It provides motor innervation to the muscles of the anterior compartment of the thigh being quadriceps femoris, pectineus and Sartorius and sensory innervations to the skin of the anterior thigh and the anteromedial aspect of the leg through saphenous nerve . Injury to the femoral nerve typically produces: weakness of hip flexion, loss of knee extension (no patellar reflex), and sensory loss over the territories described above.

The intense analgesia and profound muscle relaxation obtained by any anasthesia makes it possible to produce extremes of positioning due to reduction in muscle tone. The single

straight rod with swing stirrups helps to avoid sciatic and peroneal nerve palsies, but allows exaggerated abduction of the thighs with marked external rotation at the hip. This causes the femoral nerve to enter the thigh acutely angulated and twisted beneath the tough and inelastic inguinal ligament leading to compression of its vasa nervosa, thus producing local ischaemia of the nerve trunk. Risk increases when this position is maintained for longer duration. One more factor which helps to increase the abduction of thigh and its external rotation, is that surgical assistants often lean against the inner aspect of the thighs.[1,3]

The classic presentation of femoral neuropathy is the patient falling from bed when ambulation is attempted postoperatively. The clinical symptoms of femoral neuropathy are weakness of ipsilateral hip flexion, knee extension, and numbness over the anteromedial aspect of the thigh as well as hyperaesthesia and pain.[2]

Diagnosis is by physical and neurological examination and should be confirmed is by electrodiagnostic studies. These tests are performed 3 weeks after injury and helps in diagnosing, locating the injury, and assessing the severity of the lesion. Nerve Conduction Studies includes sensory studies of the saphenous nerve and motor studies of the femoral nerve. Results on the symptomatic side should be compared with those on the asymptomatic side. On EMG, the quadriceps should show neuropathic changes. Recently, high-resolution sonography has shown high accuracy for localization, extent and the cause of peripheral nerve lesions by direct visualization of the nerve.[5]

Treatment needs aggressive physiotherapy only if there is no substantial nerve injury immediately after diagnosis to prevent muscle atrophy and decrease the risk of thromboembolic complications associated with prolonged bed rest. Among the medications used to address neuropathic pain are the anticonvulsants pregabalin and gabapentin, as well as the antidepressants amitriptyline and duloxetine. Prognosis is generally regarded as good. Almost all patients have neurological full recovery; permanent deficits are very rare.[5]

In order to prevent neuropathy two assistants required for giving position to the patient synchronously. The “candy cane” stirrup should be abandoned and the Llyod-Davies leg support should be used in its place. 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 and if prolonged, intermittently ease out the stretched externally rotated leg.[1,4]

The patient should be followed clinically to evaluate for signs of recovery. Electrodiagnostic evaluation should be performed beginning at 6 weeks and repeated at 3 and 6 months after the event to evaluate recovery.

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