Obturator Nerve Palsy in a Patient with Fascio Scapulo Humeral Dystrophy Undergoing Scapulopexy in Prone Position: A Rare Occurrence

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Received: 19 Dec. 2006; Received in revised form: 30 May 2007; Accepted: 26 Aug. 2007

Abstract- All surgical positions carry some degree of position-related risks. The most common serious positional injuries are peripheral nerve injuries. We present a case of 23 years old man with obturator nerve injury with clinically evident sequelae following a scapulopexy of the right shoulder in prone position. Basis on our knowledge, no similar cases have been described in the literature. The purpose of this report is to increase awareness of this unreported potential complication in the prone position.

Acta Medica Iranica 2009; 47(3): 241-243.

Key words: Obturator nerve, injury, prone position

Introduction

Numerous positions related nerve injuries during surgery have been mentioned so far (1-3), but we could hardly find any report of obturator nerve damage in prone position in the literature. The rare occurrence of obturator nerve injury in this particular case in the prone position unveils another complication and stresses the importance of extra vigilance in such positions and such cases.

Case Reports

A 23 year-old man who presented for winging of the scapula was scheduled for scapulopexy of the right shoulder. His medical history included facioscapulohumeral muscular dystrophy (FSHD) of three years duration. On physical examination, shoulder abduction was restricted to 60 degrees, due to weakness of the Serratus anterior and Trapezius muscles. There was obvious winging of the scapula during active abduction of the shoulder. Pelvic girdle muscles, however, were normal. Laboratory investigations revealed no abnormal findings. Standard monitoring was applied. Premeditation included fentanyl 100 micrograms and midazolam 2mg.

Anesthesia was induced with thiopental 5 mg/kg and orotracheal intubation performed after injecting 0.1mg/kg of pancuronium bromide. Maintenance of anesthesia was accomplished with a 50:50 mixture of oxygen- nitrous oxide, halothane 0.7%and incremental doses of fentanyl as needed.

The patient was then turned on to the prone position and two rolls (one, under the chest and the other under the iliac crest) were placed to ensure adequate ventilation and protection at the pressure points. The operation took three hours. Having regained consciousness, the patient complained of paresthesia in the medial side of his right thigh. A neurologic consultation failed to reveal any abnormal findings. The patient was discharged three days later but was advised to refer for follow-up. On the 9th week, an apparent atrophy was noted in the same region (Figure 1).

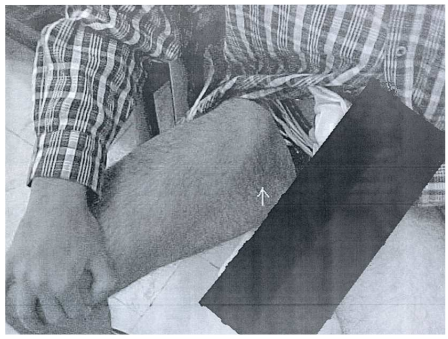

Figure 1. Anteromedial aspect of the right thigh. Note prominent muscular atrophy (arrow) in the adductor muscle group.

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In electromyographic study all findings were compatible with moderate incomplete right obturator nerve irritation and axonal degeneration (adductor longus and adductor magnus muscles' atrophy).

Discussion

A 1990 analysis of the American Society of Anesthesiologists Closed Claims Project database showed that 15 percent of the claims were for nerve injuries (4). In most cases, the injury seems to have occurred despite apparently adequate positioning (5, 6). Thus, many postoperative neuropathies occur without an identifiable cause (1, 7). Nerves adjacent to bony structures are subject to compression eventually resulting in nerve ischemia due to reduction of blood flow through the intraneural vasanervorum.

Ischemia that persists for over 30 minutes can result in nerve palsy. The obturator nerve emerges from the medial side of the psoas muscle just above the pelvic rim and runs downward between the muscle and lateral side of vertebral column. In the pelvis, it passes along the pelvic wall, lateral to internal iliac vessels and the ureter, eventually traversing a course along the obturator internus muscle to the obturator canal.

The obturator nerve supplies motor fibers to the adductors of the thigh and carries sensory fibers to a small area of the medial aspect of the thigh. Compression or irritation of the obturator nerve within the obturator canal has been reported in association with different conditions including:obturator hernia, urologic, gynecological and orthopedic procedures (1, 2, 8-16).

Obturator nerve injury occurring in prolonged hip flexion is because of stretching at the bony obturator foramen (17). An accessory obturator nerve is present in 8.4-30 % of cases. It arises from L3-L4 nerves and passes out of the pelvis by crossing over the superior ramus of the pelvis, as does the femoral nerve (18, 19). In this particular case there seem some possibilities which could possibly be incriminated for post-operative loss of nerve conduction in the obturator nerve as documented in EMG and an obvious atrophy of adductor muscles. The foremost possibility is that the nerve instead of running its normal course traversed over the superior ramus of pubis and thus got impinged within the hip rolls and the bone. Secondly, it could be postulated that owing to the underlying pathology of the patient, the obturator nerve, although traversing its normal course, got impinged within the vicinity of the groin region. Rolls displacement inadvertently occurs during surgical manipulations, but the presence of normal basal muscle tone present in normal patients prevents nerve compression and thus nerve injury is obviated; however, in vulnerable patients with muscular dystrophy, this protective role of the muscles on the nerve gets nullified with the result that inadvertent rolls displacement would cause an axonal injury leading to adductor group of muscles' atrophy.

Patients with FSHD have an obvious muscle dystrophy and in our opinion could well be the harbingers of position related nerve injuries. The patient presently lives a normal life and attends to his daily activities with no inability in the motor activity.

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