

Vulval Injury Due To Perineal Post On Fracture Table: Concern For Anaesthesiologist

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Abstract

Purpose: An operating table with the capacity for traction against a perineal post is commonly employed in various lower limb surgeries during closed reduction and internal fixation under anaesthesia. The perineal region is particularly vulnerable to injuries following prolonged traction against improperly placed perineal post. There is little information in the literature that addresses this issue.

Clinical features: We report here a case in which prolonged traction against a perineal post during operative fixation of fracture shaft femur resulted in vulval injury.

Conclusion: This report should heighten the anaesthetists' concern of the correct positioning of the perineal post during operative procedure to prevent such complications.

INTRODUCTION

The aim of optimal positioning for surgery is to provide the best surgical access while minimizing potential risk to the patient. Each position carries some degree of risk and this is magnified in the anaesthetized patient who cannot make others aware of compromised positions.

Management of lower extremity fractures commonly involves use of the orthopedic fracture table for lower limb traction and countertraction provided by the perineal post. The prolonged duration in many of these surgical procedures coupled with the over-all orthopaedic surgical volume makes the genito-perineal region vulnerable to iatrogenic injuries.

We report a case of vulval injury induced by the perineal post of the orthopaedic fracture table.

CASE REPORT

An 18 year old girl weighing 52 kg sustained a fracture neck femur on the left side following fall. She was planned for closed reduction and internal fixation under fluoroscopic guidance.

During pre-anaesthetic evaluation, the patient revealed history of generalized tonic clonic seizure five years back for which she was prescribed sodium valproate 500 mg twice

daily. She never had a relapse and never defaulted. She also had osteomalacia for which she was treated with vitamin D and calcium gluconate tablets. She did not have any other systemic diseases.

On laboratory examination her hemoglobin was 10 gm% and other biochemical parameters were within normal limit.

After discussion of the potential risks and benefits of general anaesthesia compared with regional anaesthesia, it was decided to perform the operation under combined spinal epidural anaesthesia (CSE).

After premedication with diazepam 5 mg and Ranitidine 150 mg orally on the night before surgery, she was shifted to the operating room.

An 18 gauge I.V. cannula was placed and 500 ml of compound sodium lactate solution was administered. Pulse oximeter, ECG electrodes and NIBP were connected.

The patient was placed in the sitting position and the epidural space was located at the L₃-L₄ interspace using an 18 gauge Tuohy needle and the loss of resistance to air technique. The epidural space was located at a depth of 5 cm. A 27 G spinal needle was inserted through the epidural

needle and 2 ml of hyperbaric bupivacaine (10 mg) was administered in the subarachnoid space after free flow of CSF. Spinal needle was removed and 4 cm of epidural catheter was threaded. The height of the block achieved after 10 minutes was T₈.

The patient was placed supine on a radiolucent fracture table against a perineal post. The post was wrapped with foam and covered with cotton cast padding. Both lower extremities were placed in boot traction.

Surgery was performed with good muscle relaxation and analgesia was observed throughout the procedure. The vital parameters were monitored throughout the procedure which lasted for 140 minutes. After 100 minutes, an incremental dose of 7 ml of 0.25% bupivacaine was injected through the epidural catheter on complaint of patient discomfort. There was no episode of hypotension. Post operative analgesia was maintained by wound infiltration with 0.25% bupivacaine and systemic analgesics.

About 2 hours after shifting the patient to recovery room, significant vulval haematoma with bluish discoloration of the skin was seen. No perineal, vulval or vaginal hypoesthesia or dysesthesia was noted. No voiding dysfunction was described or documented. There were no rashes that could be attributed to any form of allergic reaction to the antiseptic solutions used during cleaning the operative site. An expert opinion from gynaecologist was sought and conservative management with ice cold compression and oral anti-inflammatory drugs were advised.

The swelling increased in size on day 1 and mild pin-prick dysesthesia was noticed. Since there was no major neurological sign no active intervention was sought. On advice by the gynaecologist, more intense conservative treatment was pursued. The swelling started reducing in size from day 3 and skin discoloration started subsiding from day 4. The haematoma resolved completely on day 7.

DISCUSSION

The previous reports of genitoperineal sequelae following intraoperative fracture table reduction and fixation procedures include cutaneous laceration, transitory sensory deficit, temporary erectile dysfunctions and permanent sexual dysfunctions^{1,2,3}. Supine and lateral positioning has been involved. The operative times were lengthy and prolonged (108,³ 120,³ and 195 minutes²).¹

Inspite of extensive literature search we could not come

across any report of vulval haematoma induced by fracture table.

Callan et al⁴ reported one case of perineal sloughing due to skeletal traction against a traction post during prolonged bilateral femoral nailing.

Several investigations have validated sustained pressure as the specific mode of nerve injury^{5,6}. Lesser pressures applied during a longer interval have also been proved capable of producing significant injury⁶.

Karpos et al⁷ pointed the use of manual traction during femoral nailing to avoid a pudendal post altogether.

In reviewing our patients' case, we realized that the position of the perineal post was in the midline against the vulva and prolonged traction during closed reduction was the most probable cause of vulval haematoma and certain precautions during intraoperative positioning might have avoided this injury.

France and Aurori⁸ have made the following recommendation for positioning the perineal post during traction to prevent pressure injury. a) The post should be placed between the genitalia and the uninjured limb; b) the post should be the widest available with adequate cotton padding; c) complete anaesthetic relaxation should be attained; d) intraoperative traction should be only used for the reduction and preliminary fixation.

Our experience indicates that extra caution should be taken in patients with fracture neck femur during closed reduction and internal fixation under fluoroscopic guidance. These may include decreasing the amount of time against a perineal post, decreasing total operative time, using forceful traction judiciously, intermittently checking the status of the perineum, padding the post thoroughly, and intermittently releasing traction.

General awareness of these dangers on the part of the anesthesiologist, surgeons, nurses and all who care for the anaesthetized patients is the best safeguard against their occurrence and special precautions must be taken in particular instances where the risk of a certain posture must be accepted in general interest of the patient.

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