Epidural catheter kinking over the scapular margins

Sir,

Continuous epidural analgesia is an effective modality for peri-operative pain management. However, epidural analgesia may fail due to kinking or knotting of the epidural catheter.\textsuperscript{[1,2]} We are reporting the inadvertent blockade of the epidural catheter secondary to its routing from over the scapula.

A patient was posted for exploratory laparotomy and an epidural catheter was placed in sitting position at T11-12 space. The epidural catheter was secured at the puncture point using an epidural fixation device. Test dose was injected easily using a 5-ml syringe and subsequently, the catheter was fixed using transparent sterile adhesive dressing to the patient’s back. The patient was laid supine, and standard monitoring was attached. The epidural catheter was connected for continuous infusion of local anaesthetic at 7 ml/hour with a syringe pump. General anaesthesia was induced and invasive arterial and central venous lines were inserted. The patient was positioned with the arms by his side. Approximately 1 hour since induction of the anaesthesia, when the surgery had just started, infusion pump started giving occlusion alarm. Manual injection using the 5-ml syringe confirmed the alarm. Surgery was interrupted and the patient was turned to one side to allow inspection of the epidural catheter. Manual palpation of the epidural catheter did not reveal kinking. The adhesive dressing on the epidural catheter was removed and the catheter was inspected and palpated. No kink could still be appreciated. However, when the catheter was palpated firmly against the back of the patient with the arms of the patient by his side, the kinks became obvious at the margins of the scapula. Rerouting the catheter away from the scapular margins resolved the obstruction. Such corrective measure may not always be possible especially if the surgery has progressed to an advanced stage.

An epidural catheter warmed to the body temperature is softened and may kink under the surface of the skin.\textsuperscript{[3]} We used a warming mattress besides other temperature maintaining strategy. This could have softened the catheter and made it prone to kink under the weight of the patient against the scapular margins which become prominent when the arms were positioned by the side of the patient. We suggest that caution should be exercised when warming mattress is used in patients with an epidural catheter and an epidural catheter should be secured away from scapular margins to prevent any potential blockade due to kinking.

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Sir,

Shoulder arthroscopy enjoys a popular status compared to an open shoulder technique due to its minimally invasive approach. However, what usually is considered as a relatively safe ambulatory surgery may pose vital airway related risks.

A 44-year-old male patient, 174 cm tall weighing 60 kg, with no known comorbid illnesses was posted for left shoulder arthroscopy and Bankart's repair for rotator cuff injury. His base line heart rate was 76 beats/min, noninvasive blood pressure was 116/76 mmHg and room air saturation was 99%. General anaesthesia was induced with IV propofol 200 mg, fentanyl 100 μg.

His trachea was intubated after establishing muscle relaxation with IV vecuronium 6 mg and repeat doses of 1 mg were administered to maintain a train-of-four count of 0-1. General anaesthesia was maintained on IPPV with nitrous oxide (60%) and isoflurane (1-1.5%) in oxygen (40%) and a systolic blood pressure of 90-100 mmHg was targeted using the propofol infusion titrated between 50 μg/kg/min and 75 μg/kg/min through an infusion pump. Patient was positioned for surgery in right lateral decubitus with left upper limb in balanced suspension. Analgesia was supplemented with bolus doses of 50 μg of fentanyl every hour until the completion of surgery, which lasted for 3 h.

Arthroscopic repair of the rotator cuff was performed using conventional four portal approach. Intra-articular pressure was maintained between 35 mmHg and 40 mmHg with transient increase to 40-60 mmHg using Stryker infusion system. Normal saline was used as the irrigation fluid totalling up to 20 L.

At the end of an uneventful surgery, a diffuse swelling was noticed over left shoulder, obliterating the supraclavicular and infraclavicular fossae on either side of neck encroaching upwards and anteriorly to involve thyromental region [Figures 1a and b]. Direct laryngoscopy revealed a distinct pharyngeal wall bulge and none of the laryngeal structures could be identified except a swollen tip of epiglottis. Considering these as premonitory signs of a possible airway compromise we conducted a leak test around the occluded tube by deflating the cuff after complete recovery from residual neuromuscular blockade. As expected, patient was unable to breathe spontaneously around the tube.

References

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