Humble ECG electrode - A novel technique for epidural fixation

Sir,

Epidural catheter placements are quite common in routine anaesthesia practice. They provide intraoperative anaesthesia/analgesia as well as long-term postoperative analgesia and are well accepted by the patients. Catheter migration is a well-known complication causing failure of epidurals sited for perioperative pain relief.[1-3] This has led to the evolution of various methods for epidural fixation such as conventional transparent dressing, tunnelling of catheters and use of epidural fixator devices. These techniques though being used regularly have their own set of side effects like transparent dressing causing skin site erythema, peeling of skin, infections, and rashes.

Tunnelling of catheter is invasive and can cause bleeding, infections, and increased chances of needle stick injury to the anaesthesiologist. In a previous study, 77% of postoperative patients disliked the tunnelling when enquired specifically.[4]

Epidural fixator devices are expensive, not available easily, can cause adhesive-related skin reactions and once clamped improperly are difficult to reaffix.

The ideal epidural catheter fixation device should be easy to apply, resistant to the effects of perspiration and bleeding from the insertion site, cause no localised skin reactions and be comfortable for the patient.

Keeping all this in context, we tried a novel technique of using adult electrocardiogram (ECG) electrodes as fixator for epidural catheter. The ECG electrodes are easily available in all hospitals, have good adhesiveness and are skin-friendly. We removed the metal button part and passed the catheter through the hole created by epidural Tuohy needle and then looped it on the back part of the electrode and applied a second ECG electrode with the metal part removed on top of it so that it stays firmly fixed without kinking [Figure-1]. The remaining part of the catheter was then fixed till the shoulder using the hypoallergenic non-woven (micropore) tape till the filter area, thereby preventing it from being contaminated. We sterilised the ECG electrodes with ethylene oxide after removing metal button

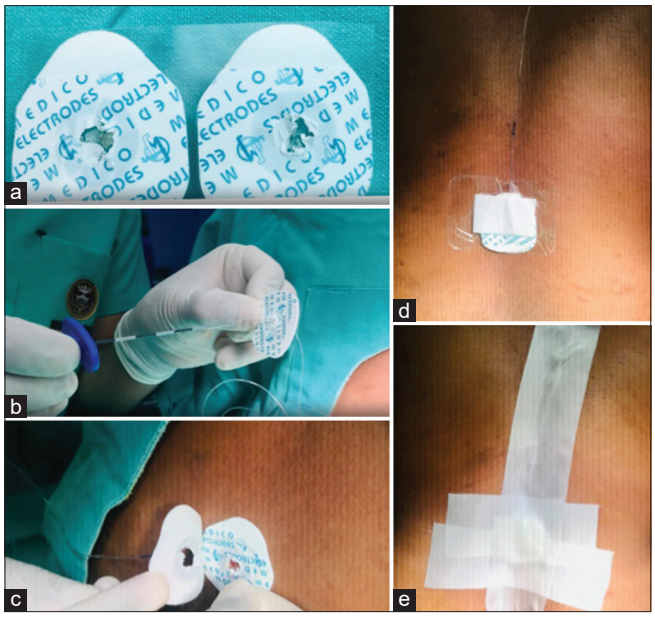

Figure 1: Epidural catheter fixation with ECG electrode

part. We did this for 15 adult patients and followed them up postoperatively for any catheter migration, kinking or obstruction for 3 days. There were no catheter dislodgement or skin changes at the site of application and the patients had satisfactory analgesia.

We conclude that use of ECG electrodes for fixing epidural catheters is non-invasive, safe, easily available and economical without any undue pain for the patient and can be sterilised prior to use by ethylene oxide. ECG electrodes are easily available even in resource-poor locations where commercially available epidural fixator device use may be precluded by non-availability and/or cost.

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Conflicts of interest
There are no conflicts of interest.

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