

Erector Spinae Plane Blocks for Rib Fracture Analgesia: A Service Evaluation

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Introduction

Rib fractures are associated with significant morbidity and mortality¹. Erector spinae plane blocks provide excellent analgesia², which is known to prevent pulmonary complications and reduce mortality³. The Belfast Trust Rib Fracture Analgesia Service was implemented in 2019. This service evaluation analysed the timeliness and reliability of the electronic referral system and the effect of erector spinae plane block (ESPB) placement on post-procedure pain indices.

Method

The clinical notes for all referrals between June 2019 and November 2020 were reviewed. Referral-to-block time, average pre- and post-block numerical rating scale pain scores, 24-hour opioid consumption and adverse events were recorded.

Results

Of the 69 patients included, 64% had an ESPB sited. Mean (SD) time from referral to ESPB placement was 10.4 (8.1) hours. Fifty percent of referrals received an ESPB within 6 hours and 93% were placed within 24 hours of electronic referral (**Figure 2**). The median (95% CI) 24-hour pain score was observed to be 8 (± 0.5) pre-block and 4 (± 0.7) post-block (**Figure 3**). Following ESPB placement, 95% of patients reported a reduced 24-hour median pain score and 65% of patients had a reduced 24-hour opioid consumption. There were no reports of haemodynamic instability or local anaesthetic toxicity, however 26% of ESP blocks were prematurely dislodged.

Discussion

The use of ESPB seems to be effective for improving pain indices to positively impact the care of trauma patients with rib fractures. Analysis of functional respiratory outcomes would be valuable to further assess the benefit of ESP blocks.

The electronic referral system is reliable and facilitates timely placement of regional anaesthesia. The data from this service evaluation will be used to support the service development for a dedicated trauma block room on the major trauma ward.

References

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- 2) El-Boghdady K, Pawa A. The erector spinae plane block: plane and simple. *Anaesthesia* 2017; **72**: 434–8.
- 3) Galvagno SM, Smith CE, Varon AJ, et al. Pain management for blunt thoracic trauma: a joint practice management guideline from the Eastern Association for the Surgery of Trauma and Trauma Anesthesiology Society. *Journal of Trauma and Acute Care Surgery* 2016; **81**: 936-51

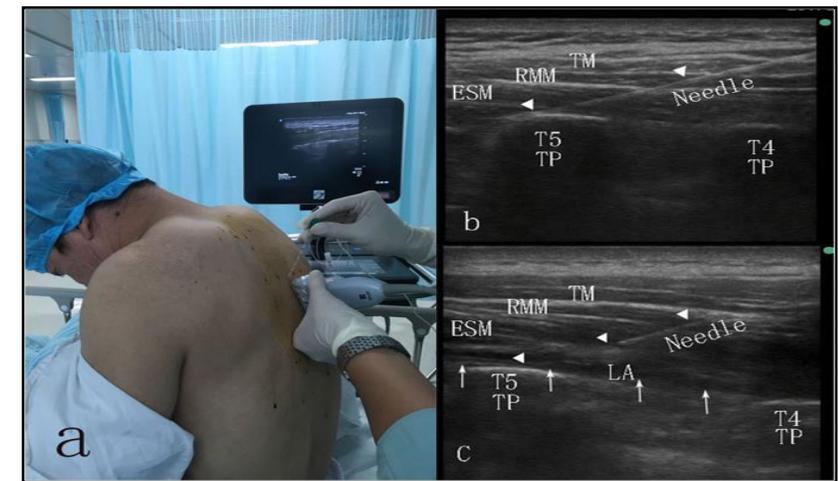


Figure 1: Erector spinae plane block (ESPB)

Time from referral until ESP block sited

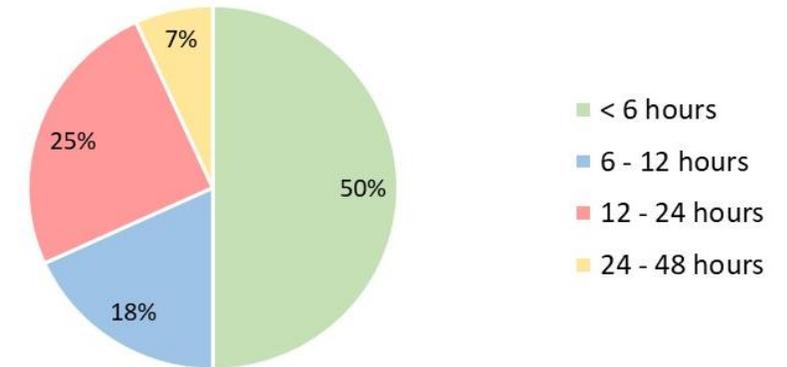


Figure 2: Time from referral until ESPB sited

Median 24 hour pain score

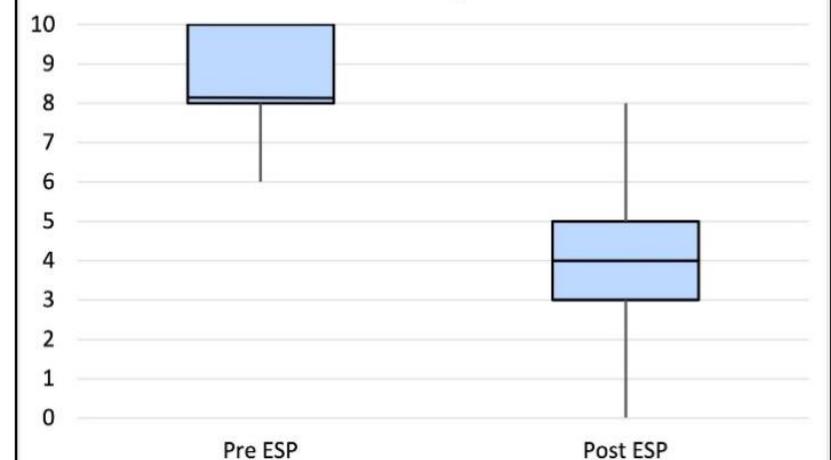


Figure 3: 24 hour pain score pre and post ESPB