



# Is Erector Spinae Plane Block Useful in Preventing the Transition from Acute to Chronic Pain After Multiple Rib Fractures?

Emanuele Piraccini<sup>1</sup> , Helen Byrne<sup>2</sup> 

<sup>1</sup>Department of Surgery, Anesthesia and Intensive Care Section “G.B. Morgagni-Pierantoni” Hospital, Forlì, Italy

<sup>2</sup>Medical Diagnostic Department, Kingsbridge Private Hospital, Belfast, Northern Ireland

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Dear Editor,

We read with interest the excellent case report by Kulmar et al. (1) on the use of continuous erector spinae plane (ESP) block in a patient with multiple rib fractures, and we applaud the authors for the case management and presentation.

We would like to contribute to the discussion by suggesting a potential role of ESP block, which has not been investigated to date, in rib fractures, i.e. the prevention of acute to chronic pain transition (ATCPT). In post-traumatic patients, ATCPT is a well-known issue, particularly in patients of orthopaedic trauma, burn, central nerve injuries and chest trauma. With chest trauma, the prevalence of chronic pain can range from 22% to 59% (2, 3).

Chronic pain after chest trauma is strongly linked to permanent disability, and it has a substantial financial and social burden (2, 3). The principal risk factor for ATCPT is the presence of severe acute pain; therefore, prompt treatment of this acute pain is the cornerstone in ATCPT prevention. Many strategies have been studied to reduce acute pain scores, and these strategies include epidural analgesia and paravertebral nerve block (3). Moreover, over the past few years, the use of fascial plane blocks in this area has gained attention. Indeed, some authors used serratus anterior plane (SAP) and ESP blocks to reduce acute pain in rib fractures, and these blocks have a better safety profile with a reduction in possible side effects than epidural or paravertebral analgesia (3).

In particular, ESP block provides analgesia to anterior and posterior hemithoraces; thus, it is particularly suitable for patients with rib fractures compared with other fascial plane blocks such as SAP block (1, 3, 4). The effect of ESP block is due to the action of the local anaesthetic on the spinal nerves, and this could be particularly useful for ATPCT because through the same pathway, ESP block may prevent central sensitisation or revert it when established (4).

The study by Kulmar et al. (1) underlines how continuous ESP block can safely and markedly reduce acute pain in multiple rib fractures; therefore, this is a good starting point to prevent ATPCT. However, other studies on ESP block in different settings show that its neuromodulatory effect on the spinal nerves could play a further role in this area (4). So far, the potential role of ESP block in preventing ATPCT has not been studied, but we have several reasons to study it, and we are eager to perform studies on this topic in the near future.

## References

1. Kumar R, Sharma A, Bansal R, Kamal M, Sharma L. Ultrasound-guided continuous erector spinae plane block in a patient with multiple rib fractures. Turk J Anaesthesiol Reanim 2019; 47: 235-7. [\[CrossRef\]](#)
2. Gordy S, Fabricant L, Ham B, Mullins R, Mayberry J. The contribution of rib fractures to chronic pain and disability. Am J Surg 2014; 207: 659-62. [\[CrossRef\]](#)

3. Thiruvankatarajan V, Cruz Eng H, Adhikary SD. An update on regional analgesia for rib fractures. *Curr Opin Anaesthesiol* 2018; 31: 601-7. [\[CrossRef\]](#)
4. Forero M, Rajarathinam M, Adhikary S, Chin KJ. Erector spinae plane (ESP) block in the management of post thoracotomy pain syndrome: A case series. *Scand J Pain* 2017; 17: 325-9. [\[CrossRef\]](#)

## Author's Reply

### Re: Is Erector Spinae Plane Block Useful in Preventing the Transition from Acute to Chronic Pain After Multiple Rib Fractures?

Thanks for comment on our article on erector spinae plane (ESP) block for multiple rib fracture. It's role in management of acute and postoperative pain is already established. Forero et al. (1) recently showed that ESP block is a promising alternative to other interventional procedures in the management of chronic shoulder pain. As already highlighted by the authors, it needs further studies to see its effect on preventing acute to chronic pain transition.

## Reference

1. Forero M, Rajarathinam M, Adhikary SD, Chin KJ. Erector spinae plane block for the management of chronic shoulder pain: a case report. *Can J Anaesth* 2018; 65: 288-93. [\[CrossRef\]](#)

Rakesh Kumar<sup>1</sup> , Ankur Sharma<sup>1</sup> , Rakhi Bansal<sup>2</sup> , Manoj Kamal<sup>2</sup> , Lovepriya Sharma<sup>2</sup> 

<sup>1</sup>Department of Trauma and Emergency (Anaesthesiology), All India Institute of Medical Sciences, Jodhpur, Rajasthan, India

<sup>2</sup>Department of Anaesthesiology, All India Institute of Medical Sciences, Jodhpur, Rajasthan, India

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Corresponding Author: Ankur Sharma

E-mail: [ankuranaesthesia@gmail.com](mailto:ankuranaesthesia@gmail.com)

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