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Editorial

Transversus Thoracis Muscle Plane Block for Pain Relief of Patients Suffering from Post-thoracotomy Internal Mammary Pain Syndrome

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The transversus thoracis muscle plane block (TTP) block is a regional anesthesia method for acute and chronic pain management of the anterior chest wall. This block was first described by Ueshima., *et al.* in 2015 [1]. He performed TTP block by a single-shot injection of local anesthetic between the internal intercostal and transversus thoracis muscles and found that TTP block covered the T2-T6 intercostal nerves [2]. It was identified that TTP block had potential to provide analgesia for anterior chest wall surgery because the anterior branches of intercostal nerves that mainly innervates the internal mammary region blocked with this technique [3]. Patients who underwent cardiac surgery often experience significant acute and chronic pain postoperatively. Mueller., *et al.* Identified the patients who underwent cardiac surgery suffered postoperative pain from day 1 to 7 at the sternal region [4]. It was shown that uncontrolled postoperative pain is associated with serious events such as hemodynamic instability, sympathetic activation, pulmonary complications, and delirium [5-7]. Another complication that cardiac surgery patients suffered is persistent pain after surgery. Guimarães-Pereira., *et al.* In a systematic review found that chronic postoperative pain was identified in 37% of subjects who underwent cardiac surgery in the first 6 months and continued to affect 17% for more than 2 years after surgery [8]. Other strategies that may be helpful in postoperative pain management in these cases such as neuraxial and paravertebral techniques are not routinely utilized because we are worried about complications in these patients after heparinization and coagulopathy [9]. Due to the more superficial anatomy of the TTP block, the risk of bleeding complications is reduced. Piraccini., *et al.* Showed pain relief of a patient who underwent cardiac surgery and suffered from post-thoracotomy internal mammary pain syndrome ten months after surgery [10]. Older methods such as pecs blocks do not provide effective analgesia to the internal mammary region [3]. However, TTP block and parasternal block can control the post-thoracotomy internal mammary pain syndrome in patients who underwent cardiac surgery [3]. In a review of literature, it was shown that TTP block was applied successfully in breast resection surgery, subcutaneous internal cardiac defibrillator placement, pericardiocentesis without general anesthesia, and chronic pain treatment for post-thoracotomy internal mammary pain syndrome [10-12]. Recently published feasibility study by Fujii et al. Identifies the potential benefit and feasibility of TTP block in chronic pain management for post-thoracotomy internal mammary pain syndrome [13]. TTP block when performed with ultrasound guidance appears very effective, promising, and safe in patients who underwent cardiac surgery and suffered from post-thoracotomy internal mammary pain syndrome. More randomized controlled trials are necessary to demonstrate the utility of this technique for treating the pain of these patients.

Bibliography

1. Ueshima H and Kitamura A. "Clinical experiences of ultrasound-guided transversus thoracic muscle plane block: a clinical experience". *Journal of Clinical Anesthesia* 27.5 (2015): 428-429.

2. Ueshima H., *et al.* "Ultrasound-guided transversus thoracic muscle plane block: a cadaveric study of the spread of injectate". *Journal of Clinical Anesthesia* 27.8 (2015): 696.

3. Fujii S., *et al.* "Transversus Thoracis Muscle Plane Block". *BioMed Research International* 2019 (2019): 1716365.

4. Mueller XM., *et al.* "Pain location, distribution, and intensity after cardiac surgery". *Chest* 118.2 (2000): 391-396.

5. Huang AP and Sakata RK. "Pain after sternotomy-review". *Brazilian Journal of Anesthesiology* 66.4 (2016): 395-401.

6. Pöpping DM., *et al.* "Protective effects of epidural analgesia on pulmonary complications after abdominal and thoracic surgery: a meta-analysis". *Archives of Surgery* 143.10 (2008): 990-999.

7. Peyton PJ., *et al.* "Perioperative epidural analgesia and outcome after major abdominal surgery in high-risk patients". *Anesthesia and Analgesia* 96.2 (2003): 548.

8. Guimarães-Pereira L., *et al.* "Persistent postoperative pain after cardiac surgery: a systematic review with meta-analysis regarding incidence and pain intensity". *Pain* 158.10 (2007): 1869-1885.

9. Bignami E., *et al.* "Perioperative pain management in cardiac surgery: a systematic review". *Minerva Anestesiologica* 84.4 (2018): 488-503.

10. Piraccini E., *et al.* "Ultrasound Guided Transversus Thoracic Plane block, Parasternal block and fascial planes hydro dissection for internal mammary post thoracotomy pain syndrome". *European Journal of Pain* 22.9 (2018): 1673-1677.

11. Bhatt HV., *et al.* "Successful Use of Serratus and Transversus Thoracic Plane Blocks for Subcutaneous Implantable Cardioverter-Defibrillator Placement". *The Journal of Cardiothoracic and Vascular Anesthesia* 32.1 (2018): e22-e23.

12. Ueshima H and Otake H. "The lateral transversus thoracic muscle plane block is effective for the pericardial drainage". *Journal of Clinical Anesthesia* 42 (2017): 12.

13. Fujii S., *et al.* "Transversus thoracis muscle plane block in cardiac surgery: a pilot feasibility study". *Regional Anesthesia and Pain Medicine Journal* 44.5 (2019): 556-560.