

## **BILATERAL TRANSVERSUS ABDOMINIS PLANE (TAP) BLOCK FOR TREATMENT OF CHRONIC ABDOMINAL WALL PAIN: A CASE REPORT**

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### **Abstract**

Transversus abdominis plane (TAP) block is a regional anesthesia technique where the local anesthetic is injected into the interfascial plane between the internal oblique and transversus abdominis muscle. This block is mainly used for treatment of acute pain following abdominal surgery. Persistent postsurgical pain (PPSP) or chronic postsurgical pain (CPSP) is pain that persists at least three months after surgery, which was not present before surgery, or which had different characteristics or increased intensity from preoperative pain. It is localized near the surgical site or a referred area, and other possible causes for the pain had been excluded (cancer recurrence or infection). This pain can lead to functional limitation and psychological trauma in patients. By presenting our case report we would like to describe the effect of TAP block on CPSP in a female patient who had previously undergone many abdominal surgeries.

**Keywords:** TAP block, chronic pain, abdominal wall

### **Case report**

We present a case report of a 58-year-old female patient, who was admitted to the Department of Digestive Surgery complaining of everyday severe diffuse abdominal pain, which was graded 7-9/10 on the Visual Analogue Scale (VAS) Score. She has a history of hypertension, which has been adequately treated with ACE inhibitors. The patient complained that she could not do all daily activities due to the persistent pain. In the past three years, she underwent two surgeries, both for open ventral hernia repair (open surgeries - appendectomy and cholecystectomy). After the operations, she had pain and could not find relief although she took many analgesics such as doreta, tramadol, gabapentin, NSAIDs, metamizole and paracetamol and she was also treated with other medications by a neuropsychologist. Thorax and abdomen computed tomography with contrast and MRI on thoracic, lumbar and sacral part of the spine were made. It was concluded that an operation was not an option, and the patient was explained that a better option for her was to receive TAP block from both sides. In case this block did not work well and if the Visual Analogue Scale (VAS) scores were not smaller, then we suggested the patient another neuropsychologist treatment. The next day the patient was in the Post-Anesthesia Care Unit (PACU). Bilateral

ultrasound-guided TAP block was performed under aseptic conditions with 20 ml of 0.25% bupivacaine on both sides and after 1 hour the patient was discharged from hospital. After 2 days she came to our department with lesser pain on the VAS scores 1-2/10. At 2 and 6 months there was no persistent pain (0/10 on VAS score).

### Discussion

Chronic postsurgical pain (CPSP) is very difficult to be treated, especially after many open abdominal operations and when the taken medications have limited efficacy and do not help in reducing the VAS scores. Some of the risk factors that have been attributed to CPSP are: female gender, young adults, genetic predisposition, psychological factors, pain present preoperatively, any pre-existing painful conditions in other parts of the body, duration and type of surgery, extent of nerve damage intraoperatively, and severity and duration of acute postoperative pain<sup>[3]</sup>. In TAP block, the local anesthetic is administered into the interfascial plane where nerves are supplying the anterolateral abdominal wall. It has been shown as a good alternative not only for treatment of acute surgical pain, but also for treatment of chronic somatosensory pain<sup>[4]</sup>. In our case report, the patient received bilateral TAP block with 20 ml of 0.25% bupivacaine without steroid. After this treatment, we explained to the patient that maybe we would repeat the same technique after a while to see if this block was going to function in treatment of a chronic abdominal pain. We also had a similar case of a patient who underwent open inguinal hernia repair surgery and after surgery complained of chronic pain. She was successfully treated with erector spinae plane block together with multimodal analgesia<sup>[5]</sup>.

Baciarello *et al.* presented case series of patients with chronic abdominal wall pain (CAWP) treated with TAP block with local anesthetic and steroid<sup>[6]</sup>. In the study by Abd-Elseyed *et al.*, 92 patients received TAP block with 0.25% of bupivacaine and steroid for management of chronic abdominal pain<sup>[7]</sup>. It has been shown that perioperative management of pain has a significant effect on prevention of CPSP, such as regional anesthesia, peripheral nerve blocks, usage of multimodal analgesia, gabapentin and pregabalin, NMDA antagonists, antidepressants, alpha-2 agonists, lidocaine, NSAIDs, acetaminophen, steroids, and opioids<sup>[3]</sup>.

### Conclusion

Bilateral TAP block can be considered effective in treatment of chronic abdominal wall pain after ventral hernia repair that is refractory on other medications.

*Conflict of interest statement.* None declared.

### References

1. Pisharoty AP. The TAP block: Rapidly evolving from managing acute post-op pain to treating chronic abdominal pain. *PAIN MEDICINE NEWS interventional* 2018; 4: 1-8. <https://www.painmedicineneeds.com/Interventional/Article/04-18/The-TAP-Block-Rapidly-Evolving-From-Managing-Acute-Post-Op-Pain-to-Treating-Chronic-Abdominal-Pain/48422?sub=DAA99158319816C26F486663C11843C20BB3A8BAA2C491CAC0A4F52B50945&enl=true>.
2. Werner MU, Kongsgaard UE. I. Defining persistent post-surgical pain: is an update required? *Br J Anaesth* 2014; 113(1): 1-4. doi: 10.1093/bja/aeu012.
3. Thapa P, Euasobhon P. Chronic postsurgical pain: current evidence for prevention and management. *Korean J Pain* 2018; 31(3): 155-173. doi: 10.3344/kjp.2018.31.3.155.
4. Fisher M, Guirguis M, Abd-Elseyed A. Review of Transversus Abdominis Plane Blocks and their application to chronic abdominal pain. *ASRA Pain Medicine Newsletter* 2019. [www.asra.com/news-publications/asra-newsletter/newsletter-item/asra-](http://www.asra.com/news-publications/asra-newsletter/newsletter-item/asra-)

news/2019/08/07/review-of-transversus-abdominis-plane-blocks-and-their-application-to-chronic-abdominal-pain.

5. Toleska M, Naumovski F, Dimitrovski A, Trposka A, Nedelkova I, Lleshi A. Unilateral erector spinae plane block combined with multimodal analgesia for treatment of chronic pain after open inguinal hernia repair: a case report. *Eur J Anaesthesiol* 2020; 37(58): 110.
6. Baciarello M, Migliavacca G, Marchesini M, Valente A, Allegri M, Fanelli G. Transversus abdominis plane block for the diagnosis and treatment of chronic abdominal wall pain following surgery: a case series. *Pain Pract* 2018; 18(1): 109-117. doi: 10.1111/papr.12570.
7. Abd-Elsayed A, Luo S, Falls C. Transversus abdominis plane block as a treatment modality for chronic abdominal pain. *Pain Physician* 2020; 23(4): 405-412. PMID: 32709175.