

Comparison of Analgesic Effect Between Erector Spinae Plane Block and Transversus Abdominis Plane Block After Elective Cesarean Section: A Prospective Randomized Single-Blind Controlled Study

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Maged Labib Boules
Abeer Shaban Goda
Mahdy Ahmed Abdelhady
Shimaa Adel Abu El-
Nour Abd El-Azeem
Mohamed Ahmed Hamed

Department of Anesthesiology, Faculty of
Medicine, Fayoum University, Cairo,
Egypt

Background: This study compared the analgesic efficacy of a bilateral erector spinae plane (ESP) block with that of a bilateral transversus abdominis plane (TAP) block after elective cesarean delivery.

Methods: Sixty mothers scheduled for elective cesarean delivery under spinal anesthesia were randomly allocated to receive either ESP block or TAP block. The ESP group received ESP block at the level of the ninth thoracic transverse process with 20 mL of 0.25% bupivacaine at the end of surgery. The TAP group received an ultrasound-guided TAP block with 20 mL of 0.25% bupivacaine on completion of delivery. The primary outcome was the duration of analgesia achieved by each block. Secondary outcome measures were the postoperative pain severity, total tramadol consumption, patient satisfaction.

Results: The median (interquartile range) duration of block was longer in the ESP group than in the TAP group (12 hours [10, 14] vs 8 hours [8, 8], $p=0.0001$). In the first 24 hours, the mean visual analog pain score at rest was lower by 0.32 units in the ESP group. The median tramadol consumption in the first 24 hours was significantly higher in the TAP group than in the ESP group (125 mg [100, 150] vs 100 mg [75, 100], $p=0.003$).

Conclusions: Compared with the TAP block, the ESP block provides more effective pain relief, has a longer duration of analgesic action, prolongs time to first analgesic requirement, is associated with less tramadol consumption, and can be used in multimodal analgesia and opioid-sparing regimens after cesarean section.

Keywords: erector spinae plane block, transversus abdominis plane block, cesarean, analgesia, tramadol