

Transversus Abdominis Plane Block under US Guidance: Regional Anaesthesia for Lower Abdominal Surgery

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Introduction. Poorly controlled acute pain during the postoperative setting after lower abdominal surgery may produce a range of detrimental acute effects (i.e., adverse physiological responses) and chronic effects (i.e., delayed long-term recovery and chronic pain). Unfortunately, current pain management relies heavily on opioids and traditional analgesia for the postoperative lower abdominal surgery, which are associated with many unwanted side effects. Nowadays, the interest surrounding regional anaesthesia has been growing owing to its demonstrated efficacy and safety outcomes.

The transversus abdominis plane (TAP) block is a relatively new regional anesthesia technique that provides analgesia to the parietal peritoneum as well as the skin and muscles of the anterior abdominal wall. It has a high margin of safety, is technically simple to perform, and with a rare complications especially under ultrasound guidance.

Nevertheless, the majority of the studies published have demonstrated the successful reduction in pain in many patients who have undergone lower abdominal surgery with TAP block; yet, widespread adoption of this analgesic adjunct has been slow.

Aim. The aim of the study is to evaluate the efficacy of our first hospital experience in using TAP block in pain management for lower abdominal surgery and to assess any unwanted complications.

Material and methods. Ethical committee approval obtained, 45 adult patients (females - 20%, males - 80%; ASA I-III), who had their surgical incision innervated by the anterior rami of spinal nerves Th10-L1, were recruited for this prospective study. The TAP blocks were performed under US guidance unilateral and/or bilateral with Levobupivacaine 0.25% 2mg/kg (Max 150mg) after the induction of GA. Pain scores were assessed two times using the visual analogue scale (VAS): VAS1 - when patients consciousness levels recovered from GA; VAS2 - when patients requested the rescue analgesia. The PONV and any other concerns were recorded as well.

Results. The age cohorts were: 18-40 (31.1%), 41-70 (53.3%), and ≥ 71 (15.6%). The TAP blocks were performed on the following surgical procedures: Open Inguinal Hernia Repair (n = 24), Open Appendectomy (n = 11), Open Prostate Adenoidectomy (n = 8), Laparoscopic Ovarian Cystectomy (n = 1), and Hysterectomy-Pfannensteil Incision (n = 1).

The VAS1 and VAS2 for all the patients were ranged between 0-4 and 5-8, respectively. The arithmetic mean for all the patients who required rescue analgesia after the TAP block was 8.3 hours (ranged between 2-20 hours). The PONV were recorded in only 3 female patients (1 emergency appendectomy and 2 gynaecological cases). There were no recorded complications attributable to the TAP block.

Conclusions. The TAP block is a safe method to provide an effective postoperative analgesia in the lower abdominal surgery with no unwanted complications and to reduce the side effects of conventional analgesia (i.e., opioids and NSAIDS).

TAP block should be considered as part of a multimodal enhanced recovery approach to patients undergoing lower abdominal surgery.