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Transversus Abdominis Plane Block for Postoperative Analgesia after Laparoscopic Colorectal Surgery

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Abstract
Introduction: Laparoscopic resection has become the standard surgical technique in treating colorectal cancer. This approach has many advantages over open surgery such as: faster recovery, lower postoperative pain with reduced postoperative pain scores and opioid requirements and shorter hospital-stay. Improving postoperative pain management by performing transversus abdominis plane block enhances some of the benefits of laparoscopic colorecat surgery. The aim of our study was to emphasize the role and the benefits of transversus abdominis plane block after laparoscopic colorectal resection.
Material and Methods: This prospective observational cohort study was conducted at the Fundeni Clinical Institute in Bucharest, Romania, and received ethical approval from the institutional Ethics Committee. We included adult patients aged 18 to 85 years, classified as ASA physical status I-III, undergoing elective laparoscopic colorectal surgery. Exclusion criteria comprised contraindications to TAP block, the necessity for additional analgesic interventions, and specific medical conditions. The TAP block was performed under ultrasound guidance, utilizing 0.25% ropivacaine administered bilaterally. Postoperative pain was evaluated through the Visual Analog Scale (VAS) at intervals of 1, 2, 4, 8, 12, and 48 hours. Analgesic consumption was meticulously recorded, focusing on opioids, paracetamol, tramadol, and Neodolpasse.
Results: The findings indicated a significant reduction in paracetamol consumption within the TAP block group, evidenced by a p-value of 0.011, which suggests lower analgesic requirements compared to the control group. Furthermore, the median time to the first analgesic request was significantly prolonged in the TAP block group, recorded at 8 hours (IQR: 0.00) versus 5 hours (IQR: 1.00) in the control group, with a p-value of <0.001. These results imply that the TAP block not only enhances analgesia but also extends the interval before additional analgesics are necessary.
Conclusions: The TAP block demonstrates substantial efficacy in multimodal analgesia, significantly reducing both opioid and non-opioid analgesic consumption while improving patient comfort and satisfaction. These findings emphasize the TAP block's effectiveness in addressing somatic pain in the abdominal region. Integrating regional anesthesia techniques into standard surgical protocols is essential for optimizing patient outcomes. Future randomized controlled trials are warranted to further validate these findings and elucidate the underlying mechanisms involved.
Keywords: TAP block, opioid consumption, time to first analgesic, laparoscopic colorectal surgery