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Key Words

I-TAP Block; Cesarean Delivery; Postoperative Analgesia; Ultrasound-Guided Nerve Block; Opioid-Sparing

Abbreviations

TAP: Transversus Abdominis Plane; IL/IH: Ilioinguinal-Iliohypogastric; NRS: Numeric Rating Scale; AI: Artificial Intelligence; ISSN: International Standard Serial Number; A.O.R.N.: Azienda Ospedaliera Rilievo Nazionale

Case Report

I-TAP Block for Analgesia After Emergency Cesarean Delivery: A Case Report

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Introduction

Optimal postoperative analgesia after cesarean delivery is essential to facilitate early mobilization, maternal-neonatal bonding, breastfeeding, and overall maternal recovery. Intrathecal morphine remains the gold standard for post-cesarean analgesia; however, interest in opioid-sparing strategies and peripheral nerve blocks has increased substantially in recent years [1]. Among abdominal wall blocks, the Transversus Abdominis Plane (TAP) block and the Ilioinguinal-Iliohypogastric (IL/IH) nerve block have demonstrated efficacy in reducing postoperative pain and opioid consumption, particularly when incorporated into multimodal analgesic protocols [1,2]. Recent evidence suggests that combining these techniques (I-TAP block) may provide broader dermatomal coverage by integrating the analgesic territories of thoracoabdominal nerves and the terminal branches of L1, potentially improving postoperative pain control compared with either technique alone [3,4]. We report a case of emergency cesarean delivery in which bilateral ultrasound-guided I-TAP block was associated with excellent postoperative analgesia.

Case Presentation

A 26-year-old woman was admitted for urgent cesarean delivery because of fetal macrosomia in active labour, with an estimated fetal weight greater than 5.5 kg and signs of suffering. The procedure was performed at the Department of Obstetrics and Gynecology of A.O.R.N. Antonio Cardarelli, Naples, Italy. After standard monitoring and aseptic preparation, spinal anesthesia was performed at the L1-L2 interspace using a 27G Whitacre spinal needle. Correct intrathecal placement was confirmed by free flow of clear cerebrospinal fluid. Hyperbaric bupivacaine 0.5% (10 mg) and preservative-free morphine 100 mcg were administered intrathecally. Adequate sensory and motor block was achieved, and surgery proceeded uneventfully. A healthy newborn was delivered with an APGAR score of 10. No intraoperative complications occurred, and maternal hemodynamic stability was maintained throughout the procedure. The procedure ends in 2 hours and when it ends the patient has abdominal pain. At the end of surgery, because of an NRS 6 that increases during movements, a bilateral ultrasound-guided combined Ilioinguinal-Iliohypogastric and Transversus Abdominis Plane block (I-TAP) was performed for postoperative analgesia. The TAP component was performed first using a subcostal in-plane ultrasound-guided approach. A 22G, 80-mm needle was advanced into the fascial plane between the internal oblique and transversus abdominis muscles. A solution consisting of ropivacaine 0.375% combined with dexamethasone 0.02% was injected, with a total volume of 20 mL per side (Figure. 1). Subsequently, bilateral ilioinguinal-iliohypogastric nerve blocks were performed using an ultrasound-guided in-plane technique. The needle was positioned within the fascial plane between the internal oblique and transversus abdominis muscles, and ropivacaine 0.375% combined with dexamethasone 0.02% was injected, with a total volume of 10 mL per side (Figure. 1). Correct spread of local anesthetic within the target fascial planes was confirmed sonographically.

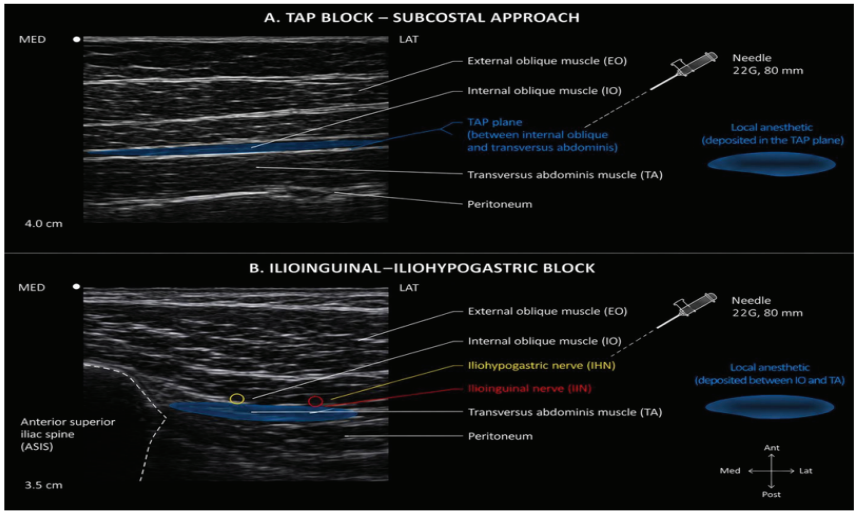

Figure 1: Ultrasound-guided I-TAP block technique.

Representative ultrasound images of the Transversus Abdominis Plane (TAP) block (A) and ilioinguinal-iliohypogastric (IL/IH) block (B). In both techniques, the needle tip is positioned in the fascial plane between the internal oblique and transversus abdominis muscles, allowing deposition of local anesthetic for blockade of the thoracoabdominal nerves and terminal branches of L1. Thefigures shown are schematic illustrations generated with the assistance of Artificial Intelligence (AI) tools and do not represent real patients, clinical photographs, or original research data.

Outcome

Postoperative analgesia was excellent. Numeric Rating Scale (NRS) scores remained 0 at 12, 18, and 24 hours after surgery. The patient did not require any rescue analgesia during the first postoperative day and received neither paracetamol nor systemic opioids. No adverse events, including nausea, vomiting, excessive sedation, respiratory depression, local anesthetic systemic toxicity, or neurological complications, were observed. The patient was able to mobilize early and reported a high degree of satisfaction with postoperative pain management.

Discussion

Although intrathecal morphine remains the cornerstone of post-cesarean analgesia and continues to be regarded as the reference standard in contemporary obstetric anesthesia, concerns regarding opioid-related adverse effects have stimulated growing interest in opioid-sparing regional anesthesia strategies [1,5]. TAP block provides reliable analgesia of the anterior abdominal wall, but coverage of the L1 dermatome may be inconsistent. Conversely, IL/IH block specifically targets the terminal branches of L1 responsible for innervation of the suprapubic region and Pfannenstiel incision area [2]. The rationale behind the I-TAP approach is therefore anatomically sound, combining the strengths of both techniques to achieve broader dermatomal coverage. Emerging evidence suggests that I-TAP may improve postoperative pain control and reduce opioid requirements compared with TAP block alone. In a randomized controlled trial, Staker et al. demonstrated reduced pain scores and opioid consumption with I-TAP block after cesarean delivery [3]. More recently, El-Amrawy et al. reported superior analgesic outcomes, reduced opioid requirements, and greater maternal satisfaction with I-TAP compared with conventional TAP block [4]. The present case supports these findings. Despite undergoing emergency cesarean delivery, the patient experienced complete absence of pain during the first 24 postoperative hours and required no rescue analgesia. Although the contribution of intrathecal morphine cannot be excluded, the excellent analgesic profile observed suggests a possible synergistic interaction between neuraxial opioid administration and combined abdominal wall blockade. Furthermore, the absence of postoperative opioid requirements aligns with current efforts to implement opioid-sparing analgesic pathways in obstetric anesthesia [1,3,4]. Further prospective studies are required to determine whether I-TAP should be incorporated into standard multimodal analgesic protocols following cesarean delivery.

Patient Consent

Written informed consent for publication of this case report was obtained from the patient prior to manuscript preparation.

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