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Letter to the Editor

POSTOPERATIVE ANALGESIC EFFICACY OF TRANSVERSUS ABDOMINIS PLANE BLOCK WITH CLONIDINE AFTER LAPAROSCOPIC CHOLECYSTECTOMY

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ABSTRACT

Laparoscopic cholecystectomy (LC) is the gold standard for the treatment of symptomatic gallbladder diseases such as cholecystitis and cholelithiasis and it is the most performed procedure in general surgery with more than 1.5 million cholecystectomies performed annually in the United States. The reasons behind the increasing number of laparoscopic surgeries are improved postoperative pain and improved healing time as compared to open cholecystectomy resulting in earlier recovery and discharge from the hospitals. However, even if it is considered a minimally invasive technique, the intensity of pain on the first postoperative day is significant. Appropriate pain control is essential for optimizing the clinical outcomes and to ensure the patient can walk as early as possible after surgery.

1. To the Editor

Laparoscopic cholecystectomy (LC) is the gold standard for the treatment of symptomatic gallbladder diseases such as cholecystitis and cholelithiasis and it is the most performed procedure in general surgery with more than 1.5 million cholecystectomies performed annually in the United States [1]. The reasons behind the increasing number of laparoscopic surgeries are improved postoperative pain and improved healing time as compared to open cholecystectomy resulting in earlier recovery and discharge from the hospitals [2]. However, even if it is considered a minimally invasive technique, the intensity of pain on the first postoperative day is significant [3,4,5]. Appropriate pain control is essential for optimizing the clinical outcomes and to ensure the patient can walk as early as possible after surgery. The traditional approach with intravenous patient-controlled analgesia with opioids and non-steroidal anti-inflammatory drugs has several limitations, such as postoperative nausea and vomiting, dizziness, pruritus, and respiratory depression affecting the recovery process and delaying the discharge from the postanesthesia care unit [6,7]. Multimodal analgesia strategies with different classes of analgesics or local anesthetics may enhance pain relief and reduce side effects after surgery. The transversus abdominis plane (TAP) block is a regional technique for anaesthesia and analgesia of the anterolateral abdominal wall and consists of an injection of the local anaesthetic in the fascial plane between the internal oblique and transverse abdominis muscles. TAP block is now considered a milestone of multimodal pain management in abdominal surgery. A recent meta-analysis4 confirms its safety and effectiveness compared to other analgesic techniques. However, the typical duration of sensory blockade after a single-shot TAP block is 6 to 12 h, with a mean analgesic effect of 9.5 (interquartile range 8.5 to 11.9) hours [8], and hence, early analgesic intervention is needed in the post- operative period. An option with very limited literature is the use of continuously infused local anesthetics through indwelling catheters, however, doubts about the possible toxicity and costs are an obstacle to their adoption. A very cost effective approach is the addition of local anesthetic adjuvants, such as clonidine, epinephrine, dexmedetomidine, and dexamethasone, to enhance the analgesic effect and duration of the regional blocks. Among them, clonidine, an α2-adrenergic agonist, produces analgesia via a nonopioid mechanism and also exerts antihyperalgesic effects when administered spinally [9]. We tested the analgesic efficacy of the clonidine, administered peripherally as an adjunct to a single-shot TAP block with bupivacaine, in 20 consecutive patients undergoing laparoscopic cholecystectomy [10]. As our center

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routinely offers TAP block to suitable patients, a research ethics committee review was formally waived for this case series. Twenty patients with the American Society of Anesthesiologists, physical status I-II, mean age 52.4+/-14.7 years (range 27–83), undergoing laparoscopic cholecystectomy were prospectively enrolled in this study in the period from September 2016 to September 2017. The ultrasound TAP block was performed after endotracheal intubation using a 5–10 MHz broadband linear ultrasound probe and a 120mm, 20G Locoplex needle using a lateral approach. 15 ml of bupivacaine 0.5% and 3 mg/kg of lidocaine 2% were injected gradually, bilaterally for a total of 30 mL per patient. The primary outcome evaluated was analgesic efficacy using the visual analogue scale (VAS). The severity of postoperative pain was evaluated at 30 min (2.9+/-2.02) and 6 (3+/-2.12), 12 (2.85+/-1.9) and 24 (3.4+/-2.3) hours postoperatively. When the VAS was higher than 5 (2 cases group 30'; 2 cases group 6 hrs; 1 case group 12 hrs; 6 cases group 24 hrs) the patient was given ketorolac (30 mg) i.v. as a recourse. If the pain was not relieved, morphine (3–5 mg) was injected (1 case). Additional analgesic requirements within 24 h of surgery were documented and only one case of vomiting was observed in the first 24 hours after surgery. No cases of hypotension or other side effects were recorded. In our experience, use of clonidine as adjuvant for TAP block after LC resulted in effective pain control, with no cases of clonidine-related side effects and minimal use of rescue analgesics, with potential pharmaco-economic implications regarding use of medications and length of stay. Further studies, conducted in double-blind, randomized fashion and on a higher number of patients, are needed to confirm these preliminary results.

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