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Quadratus Lumborum Block in Caesarean Section: A Case Report

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ABSTRACT

Introduction: Quadratus lumborum (QLB) block is a posterior abdominal wall block (interfascial plane block) with ultrasound guidance. This study describes the administration of quadratus lumborum block as pain management on C-section. **Case presentation:** A woman, 31 years old, G2P1A0 post-C-section 4 years ago, is planning to undergo elective C-Section surgery. Vital sign examination within normal limits. The patient was included in the ASA II category. Prior to surgery, the patient was given premedication in the form of omeprazole 40 mg intravenously, paracetamol 1 gram intravenous drip for 15 minutes, and metoclopramide 10 mg intravenously. Quadratus lumborum block was given postoperatively. Postoperative management consisted of ibuprofen 800 mg/8 hour drip for 30 minutes and paracetamol 750 mg/6 hour drip. **Conclusion:** Pain management with the QLB method reduces postoperative acute pain and recovery. Further studies with a wider population are needed to explore the efficacy and effectiveness of QLB blocks.

Keywords: C-section, nerve block, quadratus lumborum block, pain management.

Introduction

Caesarean section (C-section) is a surgical procedure that causes moderate to severe acute postoperative pain. About 10% of women giving birth experience persistent post-delivery pain that can last for more than 3-6 months after surgery. Postoperative pain can delay the mother's recovery, disrupt the maternal-neonatal bond, increase the risk of baby blues syndrome/postpartum depression and reduce the success of early breastfeeding. Improving the quality of perioperative maternal care has a significant influence on outcomes globally.[1-3]

Truncal nerve blocks as part of perioperative pain management were introduced into clinical practice more than 40 years ago. The quadratus lumborum (QLB) block is an ultrasound-guided posterior abdominal wall block (interfascial plane block). A previous study stated that postoperative persistent pain decreased significantly in the group receiving QLB than in the control group at the first and sixth months of hospital discharge.[4,5] Another study presented quadratus lumborum nerve block providing prolonged and effective analgesia compared to TAP block up to 72 hours after C-section.[6-8] This study describes the administration of quadratus lumborum block for pain management on C-section.

Case Presentation

A woman, 31 years old, G2P1A0 post-C-section 4 years ago, is planning to undergo elective C-Section surgery. There was no previous history of asthma or allergies. Vital sign examination within normal limits. The patient was included in the ASA II category. Prior to surgery, the patient was given premedication in the form of omeprazole 40 mg intravenously, paracetamol 1 gram intravenous drip for 15 minutes, and metoclopramide 10 mg intravenously.

Quadratus lumborum block was given postoperatively. The patient was positioned supine, and the abdomen was disinfected from the umbilicus laterally. Ultrasound with a high-frequency linear probe is placed on the anterior abdominal wall lateral to the umbilicus. Using ultrasound, three muscle layers were identified, namely m. external oblique, m. internal oblique and m. transversus abdominis. Then the probe is shifted laterally until the three muscle layers end and continues laterally in the posterior direction until m. quadratus lumborum. After m. quadratus lumborum was found in the triangle of the petit area, use a 25G spinocan needle inplane from the anterior to the posterior direction of the abdomen. After confirming that there was no blood on the aspirate, 20 ml of 0.25% bupivacaine was administered. This injection is performed on the left and right sides of the abdomen in a similar procedure.

Postoperative management consisted of ibuprofen 800 mg/8 hours drip for 30 minutes and paracetamol 750 mg/6 hours drip. After 3 hours postoperative, the patient was sitting on the bed, and after 8 hours postoperatively, the patient walked into the room. The results of postoperative pain observations based on the numeric rating scale (NRS) and vital signs are presented in Table 1.

Table 1. Results of postoperative pain observations.

Hours	NRS		Vital signs		
	Rest	Move	Blood pressure	Pulse rate	Respiratory rate
0	0/10	0/10	110 /70	76	16
4	0/10	0/10	110/80	80	20
8	1/10	1/10	120/70	84	21
12	1/10	2/10	120/80	72	18
24	2/10	2/10	120/70	80	18

Discussion

The results of this study showed minimal pain response after the administration of a quadratus lumborum (QLB) nerve block. Previous studies have stated that QLB has a remarkable analgesic effect in reducing pain up to 1-2/10 based on the visual analogue scale (VAS) or numerical rating scale (NRS).[9-11] Patients who receive QLB as part of postoperative pain therapy have lower levels of pain both at rest and on movement, which is important for early mobilization. The analgesic effect is as good as that achieved by opioids, and there are no unwanted opioid effects such as nausea and vomiting. Quadratus lumborum block provides a rapid, pain-free effect in most patients and allows early ambulation, which is one of the most important steps in the prevention of deep vein thrombosis and thromboembolic complications.[12]

Another study demonstrated the posterior quadratus lumborum block to have an opioid-sparing effect after cesarean section. Posterior quadratus lumborum block was associated with reduced postoperative pain scores after gynecological laparoscopy and reduced need for rescue analgesia after lower abdominal surgery. The successful use of quadratus lumborum block with all approaches has been published in case reports for the following surgical procedures: proctosigmoidectomy, hip surgery, above-knee amputation, abdominal hernia repair, breast reconstruction, colostomy closure, radical nephrectomy, lower limb vascular surgery, total hip arthroplasty, laparotomy, and colectomy.[13-15] The additional mechanism of action of local

anesthetics is due to the presence of a thick sympathetic nerve network in the thoracolumbar fascia (TLF). In TLF, there are mechanoreceptors that play a role in acute and chronic pain.[16]

In addition to its advantages, QLB has several complications and contraindications. Absolute contraindications to QLB include local infection, allergy to local anesthetics, and bleeding diathesis associated with other nerve blocks. Relative contraindications include anatomic abnormalities, hemodynamic instability, and known neurologic disorders. Complications of QLB include prolonged motor block and lower limb weakness. One study reported the incidence of hypotension following QLB administration.[15-17]

Conclusion

Pain management with the QLB method reduces acute postoperative pain and recovery. Further studies with a wider population are needed to explore the efficacy and effectiveness of QLB blocks.

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