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## Bilateral Quadratus Lumborum block in a neonate having undergone laparoscopic ovarian cyst removal

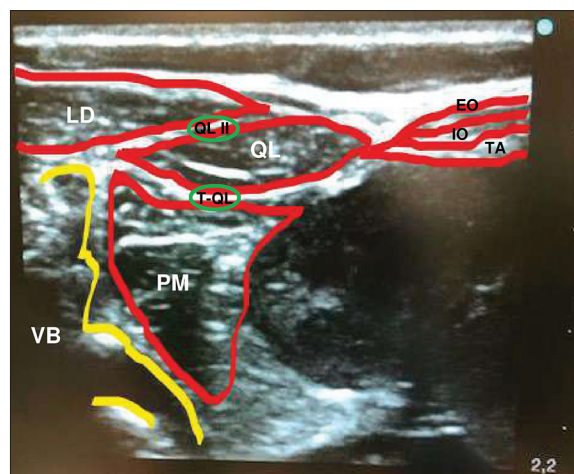
Sir,

A cautious approach in the use of opioids during anaesthesia in neonates is required.<sup>[1,2]</sup> Multimodal anaesthesia/analgesia, including the utilisation of a regional approach, is pivotal in reducing perioperative opioids use.<sup>[3]</sup> The Quadratus Lumborum (QL) block is a fascial plane block of recent introduction, and four different approaches are described: QL1, QL2, transmuscular (T-QL) and intramuscular (QL4). The QL block's anaesthetic and analgesic properties have been reported in adult and paediatric patients, but evidence in neonates is lacking.<sup>[4,5]</sup>

A term female neonate of 28 days (3800 g) with prenatal diagnosis of right-torted ovarian cyst was proposed for laparoscopic surgery. Written informed consent for publication was obtained from the parents. The baseline parameters were: heart rate 135 bpm and blood pressure 75/40 mmHg. Anaesthetic induction was administered with sevoflurane 3.5-5% in O<sub>2</sub>/N<sub>2</sub>O and the patient was intubated after 4 mg·kg<sup>-1</sup> intravenous bolus of propofol 1%. No muscle relaxants were used. Mechanical ventilation was started (6 mL·kg<sup>-1</sup>, 30 breaths per minute, positive end expiratory pressure (PEEP) = 4 cmH<sub>2</sub>O, FiO<sub>2</sub> = 0.4). The bilateral ultrasound-guided QL block was performed in lateral position via the approach described by Blanco.<sup>[5]</sup> A 2.5 cm linear ultrasound probe (SonoSite SII®, FUJIFILM) and a 50 mm, 22 gauge, echogenic needle (Braun, Stimuplex® Ultra360®) were used. Aseptic precautions were adopted. The technique includes the sonoanatomical visualisation of the quadratus lumborum muscle and deposition of local anaesthetic into the lumbar interfascial

triangle along the dorsal side of the thoracolumbar fascia (QL2), with spreading of the local anaesthetic in ventral direction toward the QL1 and dorsally to the paravertebral space [Figure 1]. Subsequently, the needle is moved deeper and in ventro-dorsal direction, passing through the muscle, to reach the T-QL site. The same approach was used on the contralateral side, for a total of 4 deposition sites (QL2 and T-QL, bilaterally). Ropivacaine 0.2%, 1 ml in each deposition site with a total dosage of 2 mg·kg<sup>-1</sup>, was used.<sup>[3]</sup> General anaesthesia was maintained with of O<sub>2</sub>/air and sevoflurane 2.5%. Intraoperative monitoring included: heart rate, electrocardiogram (EKG), non-invasive blood pressure measurement every 5 minutes, oxygen saturation (SpO<sub>2</sub>), end-tidal CO<sub>2</sub>, oropharyngeal temperature. The need for additional analgesic drug (fentanyl 2 µg·kg<sup>-1</sup>) would have been there had heart rate or blood pressure increased by 20% from the baseline. During the procedure, the average heart rate was 110+/-10 bpm and average blood pressure was 70/40 mmHg. No additional opioids were necessary and paracetamol 7.5 mg·kg<sup>-1</sup> IV was given before extubation. Surgery lasted 54 minutes. The patient was extubated and observed for 15 minutes in the Post Anaesthesia Care Unit (PACU). Then, she was transferred into the ward and postoperative pain was assessed with CRIES pain scale (0 to 10) every 2 hours for 24 hours. This score consists in five indicators: crying, oxygen requirement, heart rate, blood pressure, expression and sleeplessness. Had the CRIES score been >5 within the 6 hours from the first paracetamol administration, analgesic protocol would have required tramadol 2 mg·kg<sup>-1</sup> IV; after 6 hours, an additional dose of paracetamol would have been considered. No analgesics were needed in PACU; paracetamol 7.5 mg·kg<sup>-1</sup> IV was given 10 hours after extubation (CRIES >5). The patient was discharged home on postoperative day 2. No complications were registered.

Available alternatives to the use of a bilateral QL block were the use of opioids or other regional techniques, such as epidural anaesthesia. Opioid dosing in neonates – especially preterms – can be challenging because of large differences in pharmacodynamics and pharmacokinetics and possible life-threatening side effects, including postoperative apnoea.<sup>[2]</sup> Due to the necessity of perioperative anaesthesia and pain relief, together with a safe extubation, a multimodal approach is required to reduce the need for opioids. Considering the minimally invasive surgical technique, epidural



**Figure 1:** EO: External Oblique muscle; ES: Erector Spinae muscle; IO: Internal Oblique muscle; LD: Latissimus dorsi muscle; PM: Psoas muscle; QL: Quadratus Lumborum muscle; QL II: Quadratus Lumborum block type II site; TA: Transversus Abdominis muscle; T-QL: Transmuscular-Quadratus Lumborum block type site; VB: Vertebral Bone

anaesthesia would lead to an imbalanced risk/benefit ratio. Nevertheless, the QL block has potential complications, including local anaesthetic systemic toxicity, bleeding, bowel perforation and renal injury.

Our choice to use a bilateral QL block -in the context of a multimodal anaesthesia and analgesia strategy- permitted to guarantee an opioid-free anaesthesia.

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Nil.

#### Conflicts of interest

There are no conflicts of interest.

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#### REFERENCES

1. Simons SH, Anand KJ. Pain control: Opioid dosing, population kinetics and side-effects. *Semin Fetal Neonatal Med* 2006;11:260-7.
2. Jain A, Bhardwaj N. Need to replace codeine for management of paediatric post operative pain. *Indian J Anaesth* 2020;64:83.

3. Mehrotra S. Postoperative anaesthetic concerns in children: Postoperative pain, emergence delirium and postoperative nausea and vomiting. *Indian J Anaesth* 2019;63:763-70.
4. Sato M. Ultrasound-guided quadratus lumborum block compared to caudal ropivacaine/morphine in children undergoing surgery for vesicoureteric reflex. *Paediatr Anaesth* 2019;29:738-43.
5. Blanco R, Ansari T, Riad W, Shetty N. Quadratus lumborum block versus transversus abdominis plane block for postoperative pain after cesarean delivery: A randomized controlled trial. *Reg Anesth Pain Med* 2016;41:757-62.

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