Quadratus lumborum block for postoperative analgesia after abdominal surgery in infant patients: A case series

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Background and aims

Effective post-laparotomy analgesia is a well-recognised challenge in infant patients. In addition to intravenous opioids various regional analgesic techniques are used, such as epidural blocks with recognised risks and technical difficulties. The recently introduced quadratus lumborum block (QLB)¹ appears to be an effective analgesic technique after abdominal surgery in adult patients^{2,3}. In this case series we report encouraging results using QLB as postoperative analgesia in infant patients who have undergone open abdominal surgery.

Methods

The data of infant patients who had undergone open abdominal surgery with QLB as regional analgesia was reviewed. In included patients perioperative care followed standard principles: operation was performed under general anesthesia with intravenous fentanyl boluses 1-2 µg/kg for analgesia. Patients received intravenous dexamethasone bolus 0,1-0,25 mg/kg intraoperatively. Ultrasound-guided QLB (type 2) was performed preoperatively after anesthesia induction, *Figure 1* and 2. Postoperatively paracetamol was used regularly and intravenous or peroral opioid (oxycodone or morphine) was available as rescue analgesia. Opioid consumption was reviewed until hospital discharge.

Results

Five infant patients were included in this series. Patient characteristics, details of QLB performed and opioid consumption are presented in *Table 1* and 2. Overall the need for rescue analgesia was minimal. No complications or side effects were detected.

Conclusions

QLB appears to be an effective regional analgesic technique for postoperative analgesia also in infant patients after open abdominal surgery. Larger prospective studies will be required to establish its efficacy and safety.

Figure 1. Ultrasound guided QLB2

Abbreviations

EOM	external oblique muscle
IOM	internal oblique muscle
ESm	erector spinae muscle
QLm	quadratus lumborum muscle
QLB2	quadratus lumborum block type 2

Figure 2. Arrow marks local anesthetic around QL muscle.

Patient	Age, months	Gender	Weight, kg	Operation, incision side and level
1	0,6	male	4,2	Laparotomy, left upper quadrant, horisontal
2	4	male	7,4	Laparotomy, left upper quadrant, horisontal
3	20	female	8,0	Laparotomy, left upper quadrant, horisontal
4	1,5	female	4,5	Left, lumbotomy
5	1,5	male	4,6	Laparotomy, Pfannenstiel

Table 1. Clinical characteristics

Patient	Block side	Local anesthetic	Dose, ml	Opioid doses postop, n	Opioid total, mg
1	Left	Levobupivacaine 1,25 mg/ml	3,0	2	Oxycodone 1,6 po
2	Left	Levobupivacaine 1,25 mg/ml	9,0	0	0
3	Left	Ropivacaine 1 mg/ml	9,5	2	Oxycodone 0,8 iv
4	Left	Levobupivacaine 1,25 mg/ml	5,0	0	0
5	Left/right	Levobupivacaine 1,25 mg/ml	5,2	1	Morphine 0,2 iv

Table 2. Block data and opioid consumption

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References

1. Blanco R, McDonnell JG. Optimal point of injection: the quadratus lumborum type I and II blocks. 2013. Available at: <http://www.respond2articles.com/ANA/forums/post/1550.aspx> Accessed November 28, 2015.
2. 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*. Nov/Dec 2016 - vol 41- p 757-767.
3. Murouchi T, Iwasaki S, Yamakage M. Quadratus lumborum block: analgesic effects and chronological ropivacaine concentrations after laparoscopic surgery. *Reg Anesth Pain Med*. 2016;41:146-150.