



Lateral Transversus Abdominis Plane Block Versus Quadratus Lumborum Block in sub-umbilical pediatric surgery

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Background :

Transverse Abdominis Plane (TAP) block has been extensively used in pain management. Recently, Quadratus Lumborum block (QLB) has been reported as a superior alternative in adults given a further dermatomal spread and a more prolonged analgesic outcome (1).

We aim, in our study, to compare the analgesic effect of TAP block versus QLB in children undergoing sub-umbilical peripheral surgery.

Patients and methods : A prospective, randomized clinical trial from October 2022 to March 2023.

- After Ethics Committee approval and parental consent.

-> Inclusion criteria : Pediatric patients aged from 1 to 10 years-old, ASA physical status I and II and elective sub-umbilical peripheral surgery.

-> Non-inclusion criteria : Allergy to local anesthetics, coagulopathies, advanced visceral failures.

- Anesthesia protocol was standardized: inhalational induction (if necessary), IV access, administration of fentanyl 4 mcg/kg and propofol 2 to 4 mg/kg, supraglottic device for airway management.

- Patients were afterwards randomly allocated to undergo either a lateral TAP block in supine position (TAP group) or a posterior QLB in lateral position (QLB group). Both blocks were ultrasound guided and performed by an anesthesia resident who masters the technique under the direct supervision of an attending. All patients received 0.2 ml/kg of 0.25% Bupivacaine. Surgical incision was allowed 15 minutes after the procedure.

- If the systolic arterial pressure and/or heart rate increased by more than 20% compared to basic values, the block was considered unsuccessful, the patient received fentanyl 1mcg/kg and was excluded from the study.

- Pain was assessed during the first 24 post-operative hours using either FLACC (Face Legs Activity Crying Consolability) score at the surgical ward on H0 (emergence), H1, H2, and the Parents' Postoperative Pain Measure (PPPM) at home on H6, H12 and H24 post-operative hours.

- If FLACC or PPPM >3, they received paracetamol 15mg/kg, and ibuprofen 10mg/kg was administered for persistent pain.

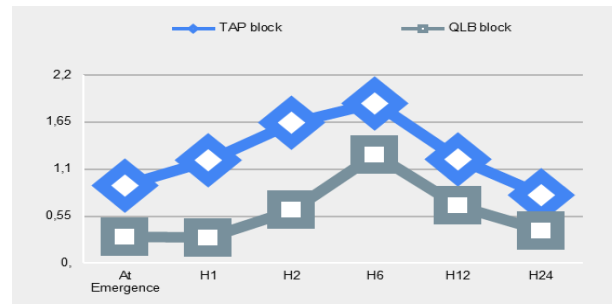
Primary outcome : Time to first rescue analgesia.

Secondary outcomes : Pain scores and analgesic consumption during the first 24 post-operative hours, time to first rescue analgesia.

Results:

	TAP group (n=45)	QLB group (n=45)	P
Age (months)	67.91 ± 24.38	63.20 ± 25.48	NS
Gender ratio M:F	221	400	NS
Weight (kg)	21.14 ± 7.02	19.45 ± 5.04	NS
ASA	ASA I = 42 ASA II = 3	ASA I = 43, ASA II = 2	NS
Surgery time (min)	40.33 ± 13.69	42.58 ± 13.85	NS

	TAP group (n=45)	QLB group (n=45)	P
Number of rescue analgesia free patients during the first 24 hours	18	32	NS
Time to first rescue analgesia (min)	363.92 ± 197.76 (n=27)	493.30 ± 167.84 (n=13)	NS
Mean analgesia bolus number	0,87 ± 0,84	0,36 ± 0,60	<0.01



Conclusion :

QLB provided a prolonged and better quality analgesia compared to TAP block. We hypothesize that QLB is more efficient than TAP in children undergoing sub-umbilical peripheral surgery.

Références : (1) Dhanjal S et al. Quadratus Lumborum Block. 2022 Aug 22. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan.