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COMPARISON OF TRANSVERSUS ABDOMINIS PLANE BLOCK AND LATERAL QUADRATUS LUMBORUM BLOCK IN PEDIATRIC PATIENTS; A DOUBLE BLIND RANDOMIZED CONTROLLED TRIAL

OP Zambak Mutlu*, P Kendigelen, AC Tutuncu. *Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Istanbul, Turkey*

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Background and Aims Undescended testicle is a common genitourinary pathology in pediatric population. Due to the complex innervation of the testicle and spermatic cord, analgesic management can be challenging in orchiopexy. We aimed to compare the effects of transversus abdominis plane (TAP) and lateral quadratus lumborum block (QLB) on peri-postoperative pain, analgesic use and patient satisfaction in unilateral orchiopexy.

Methods This prospective, double-blind, randomized, controlled trial was approved by IRB of Istanbul University-Cerrahpasa (2019-71381), registered to Clinicaltrials.gov (NCT03969316) and enrolled 90 pediatric patients aged 6 months to 12 years. Lateral QLB or TAP block were applied under ultrasonography before the surgery. Our primary outcomes were the remifentanyl consumption during the surgery and pain intensity within 24 hours postoperatively. Postoperative pain was evaluated with FLACC score in hospital, Wong-Baker score after discharge. Additional postoperative analgesic consumption and parent satisfaction were evaluated.

Results As a primary outcome, the number of patients who needed remifentanyl was found significantly higher in the TAP group ($p<0.001$). FLACC and Wong-Baker scores, except the

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postoperative first hour FLACC score, were detected significantly higher in TAP group ($p<0.001$). Additional analgesic agent consumption at the 10th, 20th minutes, 6th, 16th and 24th hours, especially after the 6th hour, were significantly higher in the TAP group. Parent satisfaction was significantly higher in the QLB group ($p<0.001$).

Conclusions Preoperative lateral QLB is superior to TAP block in terms of peri-postoperative pain scores, additional analgesic requirement, patient satisfaction in orchiopexy, and it has been shown to be an appropriate option for the lower abdominal surgery in pediatric patients.

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SPINAL ANESTHESIA VERSUS GENERAL ANESTHESIA IN NEONATES UNDERGOING INFRAUMBILICAL SURGERIES REGARDING HEMODYNAMICS AND COMPLICATIONS

M Hosny*, M Lamei, E El Taher, SA Al-Touny. *Suez Canal University, Ismailia, Egypt*

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Background and Aims Neonatal anesthesia needs understanding of the rapidly changing physiology of the neonates, the pathology of the coexisting diseases, and the pharmacology of the medications used. The multisystem immaturity of this age generates developmental differences in the drug handling and response compared to older children^(1,2). Regional anesthesia in pediatrics may be beneficial⁽³⁾ to avoid airway manipulation and respiratory depression. It also improves intraoperative pain management or decreases the potential neurotoxic effects of intravenous or inhaled general anesthetics⁽⁴⁾. So, this study

Suez Canal University
Faculty of Medicine
Research Ethics Committee

Date: 8/5/2019

Dr: Mahmood Hosny Ahmed Ali Ahmed

Department: Anesthesia and Intensive Care, Faculty of Medicine, Suez Canal University, Ismailia, Egypt.

Reference: Research 36368

Thesis Title: A Comparison between Spinal Anesthesia and General Anesthesia in Neonates Undergoing Infraumbilical Surgeries.

Dear Dr,

Thank you for your letter in (30/4/2019) to ask for the ethical clearance previously given for the above mentioned thesis.

We are pleased to confirm that the above mentioned thesis was for the partial fulfillment of Master degree in Anesthesia and Intensive Care for Mahmood Hosny Ahmed Ali Ahmed, under the supervision of Prof. Essam Mohamed El-Taher, Dr. Medhat Lamei Shaker & Dr. Shima Ahmed Hamed Al-touny.

The proposal of the above mentioned thesis was reviewed by the full board Committee at its meeting on (31/1/2019) and the ethical clearance was given for that proposal.

Yours sincerely,

Prof. Amr Waheed

Chair of Research Ethics Committee
Faculty of Medicine
Suez Canal University

13/5/2019

لجنة الأخلاقيات
كلية الطب
جامعة السويس

Mail address: Research Ethics Committee, Faculty of Medicine, Suez Canal University, Ring Road, Ismailia, Egypt. P.O. Box: 41522 E-mail: rc@med.suez.edu.eg
Phone: 064-3200789

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was designed to allow an alternative to general anesthesia. The objectives were to compare spinal versus general anesthesia in neonates undergoing infraumbilical surgeries regarding hemodynamics and complications.

Figure (1): Intraoperative Heart Rate (HR) (beat/minute) with standard deviation (SD) in both groups of the study at different time points during surgery.

Figure (2): Intraoperative SBP with SD in both groups of the study at different time points during surgery

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Abstract 128 Table 1 Comparison between patient characteristics in SA and GA groups: demographic data and duration of surgery

Patient characteristics		Spinal group n=18	General group n=18	p value
Age (days)	Mean $\pm$ SD	17.11 $\pm$ 7.07	12.50 $\pm$ 8.89	0.094 ^(NS)
Sex				
Male	N (%)	13 (72.2 %)	10 (55.56 %)	0.297 ^(NS)
female	N (%)	5 (27.8 %)	8 (44.44 %)	
Weight	Mean $\pm$ SD	4.04 $\pm$ 0.57	3.8583 $\pm$ 0.72	0.397 ^(NS)
ASA I	N (%)	18 (100%)	18 (100%)	
Duration of surgery	Mean $\pm$ SD	43.05 $\pm$ 7.09	41.94 $\pm$ 4.24	0.573 ^(NS)

Table (2): Post-operative complications (number of patients) in both groups:

	No. of patients with complications (%)	Normal	p value
Spinal group	1 (5.56 %)	17 (94.44 %)	0.0161 ^(*)
General group	7 (38.89 %)	11 (61.11 %)	

(NS) Statistically non-significant difference ($p > 0.05$).

Table (3): types of post-operative complications in both groups:

Type of complications	Spinal group n=18	General group n=18
Agitations	1	2
Nausea & vomiting	0	2
Agitation & vomiting	0	3

Methods Our study was a comparative single-blinded clinical trial included 36 mature neonates who were planned for infraumbilical surgeries. They were randomly allocated into two equal groups. Spinal anesthesia (SA) group was received intrathecal bupivacaine 0.5% in a dose of 1 mg/kg. General anesthesia (GA) group was received inhalational sevoflurane for induction and maintenance and Paracetamol 15 mg/kg IV infusion for analgesia. Ethical committee approval was obtained.

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Conclusions Spinal anesthesia is a good alternative to general anesthesia in neonates for infraumbilical surgeries.

¹F Meroni*, ¹B Dottore, ¹M Comuzzi, ²S Intini, ¹L Vetrugno, ¹T Bove. ¹University Hospital of Udine – Anesthesia and Intensive Care Department, Udine, Italy; ²University Hospital of Udine – General Surgery Unit, Udine, Italy

Background and Aims One of the most frequent surgical procedures in the pediatric population is circumcision—following which postoperative pain could be stressful. Usually, the most common approach is combining regional anesthesia techniques such as landmark dorsal penile nerve block (DPNB) with general anesthesia (GA). The hypothesis of this study investigates ultrasound-guided DPNB plus sedation in spontaneous breathing.

Methods Our ethical committee approved this study Prot. #5848. 58 children who underwent circumcision at our University-Hospital between January 2016 and December 2019 were included: 35 received GA plus DPNB performed by the surgeon with a landmark technique; 23 were sedated in spontaneous breathing and the anesthetist performed an ultrasound-guided DPNB with the probe positioned transversally at the base of the penis – in-plane – to visualize the local anesthetic spread. The statistical analysis was achieved with commercially available software (MedCalc version 19.0.7, bvba, Ostend, Belgium).

Results Age, weight, and height were comparable between the two groups. Children who received ultrasound-guided DPNB had a statistically significant lower time to discharge from the operating room with faster awakening, lower pain levels immediately after surgery, less intraoperative opioid consumption with a lower rate of complications after 72 hours.

	Landmark (35)		Ultrasound-guided (23)		Mann – Whitney pValue
	Median	(25°-75°)	Median	(25°-75°)	
<i>Opioid dose (µg/Kg)</i>	2.08	(1.72 – 2.38)	1.2	(0.96 – 1.61)	p < 0.01
<i>Time to discharge (min)</i>	20	(15 – 27)	4	(2 – 6)