The impact of the application of a penile block before circumcision on the postoperative FLACC score and analgesic requirement

Sacit Nuri Görgel¹, Banu Erten Tol²

ABSTRACT

Objective: We aimed to evaluate the effect of the application of a penile block before circumcision on the postoperative Face, Legs, Activity, Cry, and Consolability (FLACC) score and analgesic requirement.

Material and methods: In this study, 240 patients with an age range of 1-9 years who were circumcised between April 2012 and August 2012 were included in this study. Penile block was applied in only 125 of 240 patients (Group 1) and for the remaining 115 patients penile block was not performed (Group 2). Both groups were compared in terms of age, operation times, FLACC score and analgesic requirements.

Results: The mean age of the patients was 4.8±2.1 years in Group 1 and 5.3±3.1 years in Group 2 (p=0.126). Mean operating time was 14.9±5.1 min in Group 1 and 15.2±6.2 min in Group 2 (p=0.242). The mean FLACC score of the patients was 3.1±1.9 (0-6) in Group 1 and 6.4±3.3 (3-10) in Group 2 (p<0.05). Postoperative analgesic was required in 20 patients (16%) in Group 1, and 75 patients (65%) in Group 2. Early complications were not observed in any patients.

Conclusion: We detected a significantly lower postoperative analgesic requirement and a mean FLACC score in patients who had been treated with application of a penile block before circumcision.

Key words: Analgesic requirement; FLACC score; penile block.

Introduction

Circumcision is the excision of the foreskin so as to expose penile glans.[11] Circumcision is one of the most frequently applied surgical interventions in the world, and in our country.[2] In the application of circumcision in addition to medical indications, medical, religious, and traditional factors play a role as well.[3] In our country religious, and in Western countries medical indications come to the foreground.[4,5] In eastern countries including ours, circumcisions are usually performed by traditional circumcisers devoid of medical knowledge, and with resultant increase in risks of complications risks.[6] However, circumcision performed by experienced individuals is a considerably safe procedure.[3]

Pain control in this frequently performed procedure in our country carries importance both for the patient, and his family. Pain caused by trauma, disease or requirement for an additional surgical interventions is one of the most frequently unwanted experiences lived by the children. It increases anxiety of the child, and his family, complicates diagnostic, and other procedures, and leads to various somatic symptoms. Pain triggers activation of the physiologic stress response. Marked changes occur in many organ systems including cardiovascular, respiratory, metabolic, renal, and immune system.[7,8]

Measurement of the severity of pain is important in the treatment, and monitoring of pain. Since cognitive, and verbal communication skills of the children are deficient, accurate evaluation of the pain is very difficult.[9] Therefore, monitoring of the symptoms using standard parameters will contribute to success in the diagnosis, and effective treatment of pain (Table 1). [10,11]

Face, Legs, Activity, Cry, Consolability (FLACC) pain scale was translated into Turkish, and postoperative pain was rated in children.[12] In our study its Turkish version was used.
In this study, we aimed to objectively evaluate changes in FLACC pain scores of the patients who had or had not undergone perioperative penile block, and rate this scoring system in the decision-making process for the application of the penile nerve block in circumcision.

Material and Methods

A total of 240 patients aged between 1, and 9 years circumcised between April 2012, and August 2012 were included in the study. The cases had (n=125; Group 1) or had not (n=115; Group 2) undergone penile block.

Physical examination of all patients were done before the procedure. Preoperatively, hemograms, biochemical analyses, and coagulation tests were performed. Coagulopathy was not detected in any one of the patients. All cases had been circumcised under anesthesia delivered with a mask. Cases under penile block using 1 mg/kg prilocaine, had undergone dorsal penile nerve, and ventral preputial blockage following anesthesia delivered with a mask. Hemostatic control was achieved by coagulation of transsectioned dorsal, and ventral vessels using a monopolar electrocautery. While in some cases the vessels were ligated separately using absorbable sutures, catgut or monofilament polyglycapron. Before cauterization of frenulum, hemostatic control was achieved with intermittent sutures. FLACC scores were evaluated at every 10 minutes for a period of 50 minutes, and average of 5 estimates measured at 10., 20., 30., 40., and 50. minutes was calculated. Cases with scores of ≥ 4 received analgesic therapy. The patients required analgesic drugs at most once. Analgesia was achieved with tramadol hydrochloride at intravenous doses of 1 mg/kg.

Both groups were compared as for age, FLACC score, postoperative need for analgesia, and operative times. Age, operative time, FLACC score, and postoperative need for analgesia were compared using Mann-Whitney U test. Values were expressed as arithmetic means±standard deviation, and p<0.05 was accepted as the level of statistical significance.

Mean ages of the patients in Groups 1, and 2 were 4.8±2.1, and 5.3±3.1 years, respectively (p=0.126). Mean operative times in Groups 1, and 2 were 14.9±5.1, and 15.2±6.2 minutes, respectively (p=0.242). Mean FLACC scores in Groups 1, and 2 were 3.1±1.9 (0-6), and 6.4±3.3 (3-10), respectively (p<0.05). Postoperative analgesia was required in Groups 1 (n=20; 16%), and 2 (n=75; 65%) in respective percentages of the patients (p<0.05). Postoperative FLACC score, and analgesic requirement were significantly lower in the penile block group. In none of the patients early-term complication was observed. The patients were discharged after a 6-hours of observation period (Table 2).

Discussion

Complication rates of circumcision have been reported as 2-10% in the literature. Bleeding, and infection lead the way among these complications. More rarely, urethral fistula, meatal stenosis, partial, and total glandular amputations, glandular necrosis, penile curvature, and penile rotations can be enumerated.[13-15] In developed countries, circumcision is mostly practiced by physicians (urologists, pediatric surgeons, and family physicians), however in developing countries individuals so called “circumcisers” perform circumcisions.[13,15,16] Verit et al.[17] investigated adult age circumcisions, and indicated that they were performed mostly (81%) by traditional circumcisers, then physicians (10%), and barbers (9%). Besides, a significant correlation has been reported between higher educational level of mothers, and circumcision of their children by a specialist.[18] Expression of pain is very important especially in children who can not fully reveal his complaints which let us know something

<table>
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<tr>
<th>Table 1. FLACC scores[16]</th>
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<td><strong>Criteria</strong></td>
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<tr>
<td>Face</td>
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<tr>
<td>Legs</td>
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<tr>
<td>Activity</td>
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<td>Cry</td>
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<td>Consolability</td>
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Inadequate education concerning knowledge of special requirements of the children, and correct analgesic use in pediatric patients, difficulty in evaluation of pain especially in small age group, and indistinct effects of improper analgesic control leads to frequent overlooking of pain, and its treatment in children. Besides, misconceptions which erroneously indicate that children do not feel pain or remember painful experiences, and sedation of children will decrease the need for pain-killers, and unwanted side effects of analgesic drugs worry children, and their families.[20-22] When planning treatment of pain, method of analgesia should be chosen in consideration of type, location, severity, characteristics of its causative disease, age, physical health state of the patient, and medical facilities. Emotional support should be provided for all children, he should not be separated from his family, and approaches should be compatible with his age. Hows, and whys of diagnostic, and therapeutic interventions should be explained to the children before the procedure which alleviate fear, and pain felt by them, and calm down the patient.[23-26]

In many literature studies, FLACC score has been used for objective evaluation of pain in pediatric cases.[27-29]

In conclusion, significantly lower mean FLACC score, and postoperative requirement for analgesia were detected in cases who had undergone preoperative penile block before circumcision. In our country, analgesic control during circumcision which is frequently applied in our country conveys importance for patient comfort, and his family. Therefore penile block should be considered for cases who will be circumcised.

Conflict of Interest: No conflict of interest was declared by the authors.

References
5. Rizvi SA, Naqvi SA, Hussain M, Hassan AS. Religious circumcision: a Muslim view. BJU Int 1999;83:13-6. [CrossRef]

Table 2. Demographic, and clinical characteristics of the patients

<table>
<thead>
<tr>
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<th>Group 1 (125 patients)</th>
<th>Group 2 (115 patients)</th>
<th>P value</th>
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<tr>
<td>Mean age (years)</td>
<td>4.8±2.1</td>
<td>5.3±3.1</td>
<td>0.126</td>
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<tr>
<td>Operative time (min)</td>
<td>14.9±5.1</td>
<td>15.2±6.2</td>
<td>0.242</td>
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<tr>
<td>FLACC score</td>
<td>3.1±1.9</td>
<td>6.4±3.3</td>
<td>&lt;0.05</td>
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<tr>
<td>Analgesic requirement</td>
<td>16%</td>
<td>65%</td>
<td>&lt;0.05</td>
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28. Reiter PD, Ng J, Dobyns EL. Continuous hydromorphone for pain and sedation in mechanically ventilated infants and children. J Opioid Manag 2012;8:99-104. [CrossRef]
29. Kim CH, Yoon JU, Lee HJ, Shin SW, Yoon JY, Byeon GI. Availability of a 5% lidocaine patch used prophylactically for venipuncture- or injection-related pain in children. J Anesth 2012;26:552-5. [CrossRef]