

Paediatric Circumcision with Intravenous (IV) Ketamine, and Penile Block as a Day Care Surgery

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Abstract

Background: Pediatric Circumcision is a common surgical procedure performed all over our country. Penile block is very useful for post operative analgesia in circumcision. Using penile block with Intravenous ketamine and midazolam patients can be managed smoothly without any major complication and it is a cost-effective technique in pediatrics patients. *Aim:* of this study is to evaluate the role of Intravenous (IV) Ketamine, and Penile Block in children undergoing circumcision. *Materials and Methods:* This is an observational prospective study carried out in Department of surgery and Anesthesia Chirayu Medical college and hospital Hospital during the period from January 2011 to December 2016. During this period total 120 cases of circumcision were done. Children with American Society of Anesthesiologists (ASA) Grades I & II, between 15 days and 15 years of age were selected for this study. Patient was sedated using Ketamine 1 mg/kg plus midazolam 0.1 mg/kg and penile nerve block was given prior to circumcision with 1.5mg/kg lidocaine 2% mixed with 0.5mg/kg bupivacaine 0.5% without epinephrine to a maximum dose of 5 ml using a fine 26 gauge needle. Close observation and monitoring was done clinically as well as with the help of pulse oximeter and sphygmomanometer. *Results:* Among 120 patients, 11 patients had complications subcutaneous hematoma was seen in 5 cases. Partial block was observed in 2 cases. There was transient fall in spo₂ seen in 2 patients and cough and breathing difficulty in 2 patients. *Conclusion:* Circumcision with low dose

intravenous Ketamine and with penile block is a safe and cost-effective anesthetic technique in children in a day care setting.

Keywords: Bupivacaine; Circumcision; Ketamine; Penile Block.

Introduction

Circumcision is one of the most frequently done surgery in our country and all over the world. Penile block has been used in penile surgery as a technique for perioperative analgesia for more than 30 years. The indications of doing this procedure is different in various parts of the world. Use of intravenous Ketamine alone produces analgesia but may cause undue muscle movement and hallucination however its combination with iv. diazepam and barbiturates reduces this problem [1,2]. In children penile surgery is very painful particularly in immediate post operative period. Penile block is frequently used for circumcision in children along with sedation and general anesthesia [3]. The aim of penile block is to bilaterally anaesthetize the dorsal nerve passing in subpubic space under fascia. Several studies have been done on penile blocks and they have shown good results as compared to general anesthesia alone [4,5].

Materials and Methods

This is an observational prospective study carried out in Department of surgery and Anesthesia Chirayu Medical college and hospital Hospital during the period of January 2011 to December 2016. During this period total 120 cases of circumcision were done. Children with American Society of Anesthesiologists

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(ASA) Grades I & II, between 15 days and 15 years of age were selected for this study. Patients with full stomach and having respiratory tract infection were excluded. All the patients were fed nothing orally and kept empty stomach 4-6 hours prior to the operation. First, IV cannula was inserted in all patients. Patient was sedated using Ketamine 1 mg/kg plus midazolam 0.1 mg/kg and penile nerve block was given prior to circumcision with 1.5mg/kg lidocaine. 2% mixed with 0.5mg/kg bupivacaine 0.5% without epinephrine to a maximum dose of 5 ml using a 26 gauge needle, it was inserted in the midline 1 cm above the base of the penis. About 1-1.5 cc local anesthetic was injected on each side below buck's fascia at 10.00 and 1.00 O' clock position. Gentle pressure was maintained Then, patient was observed clinically and with pulse oximeter and surgery was done.

Results

During the study period of 5 years a total number of 120 patients were circumcised between the ages of 15 days to 15 years of age. Maximum patients were between the age of 5-10 years. The weight of the study population ranged from 3.5 kg to 50 kg (Table 1). Some local and systemic complications Among 120 patients, 11 patients had complications subcutaneous hematoma was seen in 5 cases. Partial block was observed in 2 cases, There was transient fall in SpO2 seen in 2 patients and cough and breathing difficulty in 2 patients which were managed accordingly (Table 2). But no patient developed major complications or morbidity like Vomiting, Bronchospasm, cyanosis.

Observations

Table 1: Age distribution (N = 120)

Age in years	No. of children	Percentage
0-5	35	29.16
5-10	70	58.33
10-15	15	12.5
Total	120	100

Table 2: Observed Complications

Complications	Number	Percentages
Local Subcutaneous haematoma	5	4.16
Partial block effect	2	1.66
Transient Spo2 fall	2	1.66
Cough and breathing difficulty	2	1.66



Photograph 1: Showing technique of penile block

Discussion

Circumcision is very often performed in pediatric surgery. Regional techniques are more effective than non-steroid anti-inflammatory drugs, systemic opioids, and acetaminophen for postoperative

analgesia in pediatric circumcision. Dorsal penile nerve block is a safe and effective method for postoperative analgesia. Light sedation and penile block is the easiest and safest type of anesthesia for pediatric circumcision. These Patient are usually admitted in hospital on day care basis and monitoring and early smooth recovery is essential. Regional block in combination with sedation or light general anesthesia is preferred because it provides excellent analgesia extending to the postoperative period. Success of the block is determined by the cardiovascular stability and pain free period after emergence under general anaesthesia. Successful block avoids the need for supplemental postoperative analgesia for 6 to 24 hr [6]. Pain free postoperative period decreases the stress to parents as well as the treating doctors; hastens ambulation and quick discharge. Penile block reduces the adrenocortical stress response and behavioural distress. In Children faster recovery, earlier micturition, and earlier

discharge from the hospital is highly beneficial and can be used in daycare Penile block with sedation eliminates the risk and postoperative morbidity of GA with shorter post anesthesia care times and an easier recovery period without nausea, vomiting or drowsiness [7].

Penile nerve block is simple having no technical difficulties. The frequency of block-related minor complications, such as bleeding, haematoma and minor bruising were observed in some studies [8,9]. Bupivacaine is used and is free of undesirable effects that may be associated with caudal block delayed mobilization, micturation vomiting and lower extremity numbness [10,11].

Conclusion

Circumcision with low dose intravenous Ketamine and with penile block is a safe and cost-effective anesthetic technique in children in a day care setting.

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