

Safe Circumcision Anaesthesia – A Review

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Abstract

Circumcision of Neonate, Infant, Children as well as adult is done for many purposes of them religious, disease process and to prevent some diseases. Pain is the main problem of circumcision. Infant and Children will not allow local analgesia. General anaesthesia needed for them. Neonate and adult may allow local anaesthesia. So, local anaesthesia, general anaesthesia, combination of local and general anaesthesia can be given. It is a minor procedure but anaesthesia for circumcision is not easy and should not be taken lightly. Complications related to circumcision anaesthesia can be minimized by proper selection of patient and type of anaesthesia. In our country circumcision done for religious purpose so a large number of circumcisions done by professional hazzam (non doctor). Doctors including general practitioners and surgeons are also doing this procedure. Complications related to anaesthesia are mainly laryngospasm and hypoxia and ultimately cardiac and cerebral complications. Some of them are highlighted in the media and newspapers but unknown cases are not less. If we can prevent and manage the complications like laryngospasm then this procedure can be done safely.

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Introduction

Circumcision is the surgical removal of a simple fold of skin that covers the head (glans) of the unerect penis. This can be done by local anaesthesia early in infancy where the neonate is less mobile after that time it must be done under general anaesthesia. General anaesthesia present unnecessary risk including neurotoxicity that may affect the development of neuronal structures. So circumcision is best done using local anaesthesia early in infancy. In past anaesthesia was not advocated for infant circumcision because¹ fear of side effect of anaesthetics² belief that procedure caused little or no pain in this age group³ belief that pain from injection of anaesthesia was as bad as the pain of surgery.

Objectives

- To identify the common and safe anaesthesia techniques for Paediatric circumcision.
- To appreciate the importance of anaesthesia in pain control for paediatric circumcision.

Patient selection

1. Patient should be in empty stomach.
2. Patient should not have upper airway infection or irritation.

Different type of anaesthesia for circumcision

- a) Without any anaesthesia: Cruel method not practiced by doctors.
- b) Local anaesthesia circumferential subcutaneous ring block with infiltration of local anaesthetic drug at the base of the penis. Patient may response during separation of prepuce skin from the glans. EMLA cream may be use topical anaesthesia for glans penis².
- c) Penile block: Two dorsal nerve of the penis is blocked infiltrating local anaesthetics under Buck's fascia in 10-0' Clock and 2-0' Clock Position at the base of the penis³. Small amount (2cc) of local injected in the ventral aspect subcutaneously near peno scrotal junction. Penile block is better than ring block as the patient does not have any pain during separation of prepuce skin.
- d) Subarachnoid block: It is more effective block but usually not done for children for this minor procedure as an OPD basis.
- e) Caudal epidural block: Can be done with combination of sedative or analgesic. Large doses of local anaesthetic drug needed. Lower

limb become weak, so early ambulation not possible. Caudal block is more effective and well accepted for small children. Risk of caudal block should be kept in mind.

General anaesthesia

With endo-tracheal tube using nitrous oxide, oxygen, halothane or other volatile agent and intravenous narcotic analgesic and muscle relaxant. This technique is safe in expert hand but this is not done frequently for circumcision.

Intravenous anaesthesia with other combinations like inhalation of gases

- a) Ketamine plus sedative: If only intravenous Ketamine and sedative is used as anaesthesia for circumcision some patient may develop laryngospasm upon clamping and incision of the skin and difficult to manage. So if this kind of anaesthesia given then all type of equipment and drugs should be available to manage the patient.
- b) Ketamine plus narcotic analgesic plus gas inhalation: Patient should be adequately deep before clamping and incision, chance of laryngospasm if patient is not adequately deep.
- c) Gas inhalation plus narcotic analgesic: Patient should be adequately deep before clamping and incision.
- d) Ketamine plus sedative plus local or penile block or caudal epidural block.

In this technique small doses of Ketamine (1mg/kg) i/v and sedative should be given and local penile block or caudal block given before clamping and incision, if caudal block is given then adequate time (5-10 mm) should be allowed to relieve pain on incision.

- e) Gas inhalation plus local or caudal block: Caudal block with light G/A reduces bleeding prevent erection does not cause laryngospasm and provide prolonged post operative analgesia alternative to penile block⁵.

Laryngospasm is prone to occur under halothane inhalation during incision and clamping, children are very distressed on awakening from G/A⁶. So light G/A with combination of penile or caudal block is preferred⁷. Regional anaesthesia in combination of light G/A is preferred because it provide excellent analgesia extending well in to the post operative period⁸. Blockade of noxious reflexes particularly upon clamping the foreskin and quicker woke up due to decrease requirement of G/A⁹. High doses of Ketamine and repeated doses of Ketamine may cause respiratory depression and increases the chance of laryngospasm in the post operative period. Many other combinations can be made for circumcision anaesthesia there are advantage and disadvantage of all techniques but our aim should go in favour of patient's safety.

Adequate post operative care including monitoring and resuscitative equipment and drug should be available in the post operative ward.

Circumcision is minor surgical procedure patients are healthy male child so any morbidity and mortality related to anaesthesia is sad for anaesthesia and the family. So highest level of care should be taken to prevent complications.

References

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