

Which Local Anesthesia Application should We Use During Circumcision?

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ABSTRACT

Circumcision is the surgical excision of the skin covering the distal part of the penis to expose the glans penis. It is one of the oldest and most frequently performed surgeries in human history. In this mini review, local anesthesia applications used during circumcision procedure were evaluated.

Key words: Bupivacaine, circumcision, lidocaine, local anesthesia, prilocaine

INTRODUCTION

Circumcision is the surgical excision of the skin covering the distal part of the penis to expose the glans penis. It is one of the oldest and most frequently performed surgeries in human history. Worldwide, 30% of men aged 15 and over are reported to be circumcised, with the vast majority being Muslim men. In the West, it is mostly applied with the idea of protecting from sexually transmitted diseases or penis cancer and in eastern societies for traditional and religious reasons. Circumcision can be performed from the newborn period, except between the ages of 2 and 6.^[1-4]

In this mini review, local anesthesia applications used during circumcision procedure were evaluated.

LOCAL ANESTHESIA APPLICATIONS IN CIRCUMCISION

There are many methods for circumcision anesthesia and analgesia in children. These are local anesthesia, regional anesthesia, sedoanalgesia, and general anesthesia. However, there is no perfect anesthesia choice for every patient. In the selection of anesthesia and analgesia to be used here, the patient's condition, hospital conditions, experiences,

and opinions of the surgeon and anesthesiologist should be considered.^[5]

If we evaluate the anesthesia applications used during the circumcision procedure;

1. Topical anesthesia: These are preparations containing prilocaine and lidocaine applied superficially. EMLA cream (2.5% lidocaine + 2.5% prilocaine) provides anesthesia to a depth of 5 mm. EMLA is useful for circumcision of newborns. However, caution should be exercised in infants under 3 months of age and in patients using methemoglobin forming drugs such as sulfonamides, due to the risk of methemoglobinemia^[6]
2. Dorsal penile nerve blockade and/or penile ring blockade: Prilocaine 5–8 mg/kg or bupivacaine 1–3 mg/kg, lidocaine can be administered in maximum doses of 5 mg/kg^[7]
3. Caudal anesthesia: It is a block applied by passing the sacrococcygeal ligament and applying local anesthetic agent to the sacral canal. It is the most preferred regional anesthesia method in neonatal circumcision. It has been reported to be safe, easy to apply, and has a low complication rate^[8]
4. Circumcision under sedation or general anesthesia: Due to the high risk of complications, it should be applied in an environment where all kinds of interventions can be performed, such as an operating room.^[9]

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Local anesthesia is preferred more by families and physicians since it is less invasive. In practical practice, the injectable form of prilocaine (Citanest®) and prilocaine-lidocaine cream (EMLA®) is used. It has been observed that prilocaine causes methemoglobin formation in infants even at therapeutic doses (1–2 mg/kg).^[7] The use of bupivacaine, a safer local anesthetic, may be recommended, especially in infants within the first 3 months, because infants are susceptible to methemoglobin formation. However, further studies are needed in terms of side effects on this subject.

Since infants are prone to methemoglobin formation, it may be recommended to use bupivacaine, a safer local anesthetic, especially in infants in the first 3 months.

CONCLUSION

Because infants are susceptible to methemoglobin formation and lidocaine-related side effects have been reported, the use of bupivacaine, a safer local anesthetic, may be recommended, especially in infants within the first 3 months.

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