

# Pain control during infant circumcision

[Family](#), [Children](#)



Pain Control During Infant Circumcision Circumcision is a painful surgical procedure frequently performed on newborn baby boys and often without available pain relief measures being used. The procedure, especially without pain relief, can cause short-term effects such as choking, gagging, and vomiting. Long term effects of circumcision without pain relief are not well understood, however, an increased incidence of intraventricular hemorrhage (IVH) and/or periventricular leukomalacia (PVL) has been associated with pain and stress in the neonate (Leef, 2006).

Crying time, facial expression, and sweating palms can indicate infant pain, as can increased heart rate, breathing rate, and blood pressure. Although these behavioral and physiological changes are present at other times, the infant usually displays them during a circumcision that is not accompanied with effective pain relief. This paper reviews various pain relief methods and current residency training practices regarding the use of analgesia during the circumcision procedure. Available treatments are used with the three most common circumcision surgical techniques: the Morgen clamp, the Gomco clamp, and the Plastibell method.

Recent research suggests that the Morgen clamp is associated with a less painful procedure when compared with the other two (Leef, 2006; Yawman et al. , 2006). Preferred by trainees, the Morgen clamp is also faster to use than the Plastibell (Yawman et al. , 2006) and include local and topical pain relief methods, oral sucrose and oral acetaminophen. Dorsal penile nerve block (DPNB), which involves injecting anesthetic at the base of the penis, and subcutaneous ring block are the two most commonly used local anesthetics.

Topically applied anesthetic creams include EMLA, a water-based cream that includes lidocaine and prilocaine. Although DPNB, ring block, and EMLA do not eliminate circumcision pain, all three are more effective than placebo or no treatment (Leef, 2006; Yawman et al. , 2006). Compared head to head, DPNB is substantially more effective than EMLA cream (Leef, 2006). However, DPNB can cause minor bruising, bleeding, or swelling at the injection site and EMLA can cause skin color changes or local skin irritation (Leef, 2006).

When used alone during the entire surgical procedure, oral agents, such as sucrose and acetaminophen, have not been shown to be as effective when compared with either EMLA or DPNB (Leef, 2006). However, in 1998, Herschel et al. (as cited in Leef, 2006) found that when sucrose was compared with DPNB during “ the initial time intervals of circumcision (surgical preparation, lateral clamping, lysis of adhesions) and the final period (excision of the foreskin and application of a dressing)” there was no significant difference in heart rate which suggests that sucrose is as effective as DPNB during these periods (Leef, 2006, p. 77). In 1991, Blass and Hoffmeyer (as cited in Leef, 2006) found that babies cried less often when given a sucrose-dipped pacifier compared to a water-dipped pacifier or no intervention when undergoing the procedure. Given these results, one can conclude that combining oral sucrose with DPNB would provide optimum pain relief. Since 1999, the American Academy of Family Physicians, the American College of Obstetricians and Gynecologists, and the American Academy of Pediatrics have all recommended the universal use of local or topical anesthetics during neonatal circumcision (Yawman et al. 2006). In

order to find out if there has been an increase in residency programs that teach effective forms of analgesia for newborn circumcision since previous data collection in 1998, Yawman et al. (2006) conducted a survey of US residency programs in family practice (FP), pediatrics (PED), and obstetrics and gynecology (OB/GYN) in April, 2003 (N= 940). The results showed that only 82% taught newborn circumcision and that FP residents (95%) were more likely to be taught the procedure than either PED (49%) or OB/GYN (86%) residents.

These findings were not significantly different from the 1998 study. Ninety-seven percent of the programs that taught newborn circumcision also taught effective anesthetic techniques. This is a 26% increase compared with the previous study (71%). However, only 84% of the responding programs reported that a topical or local agent was always or at least frequently used. There was a statistically significant difference among residency programs, which showed that 93% of PED, 86% of FP and 76% of OB/GYN programs frequently or always used analgesia.

The previous study did not gather this data so a comparative analysis could not be performed (Yawman et al. , 2006). There are several limitations to the Yawman et al. (2006) study. The survey relies on accurate reporting by respondents who may overestimate the frequency of how often effective pain management is taught. In addition, the respondents gave their personal opinion, which reflected on the practices of a whole department of which they may not be fully informed. The respondents completing the survey likely differed from the individuals who responded in the 1998 survey.

Last, the study only surveyed teaching hospitals and may not reflect the practices of other community hospitals. In spite of these limitations, the results showed that 16% of the residency programs do not always or at least frequently use analgesic agents during the surgical circumcision procedure. Based upon the overwhelming evidence of the safety and benefit to newborns of effective analgesia during circumcision, this particular statistic of the Yawman et al (2006) study is both surprising and bothersome.

This implies that although the teaching of effective analgesic techniques during circumcision has increased over the years, implementation of these practices is not yet universal. Furthermore, physicians that were trained in programs that did not teach the use of analgesics for circumcision, as was the case for the majority of programs just 15-20 years ago, are not likely to use pain management in their current practice. Therefore, the actual number of infants needlessly subjected to the surgical procedure without effective analgesia use is currently unknown.

Further research, which attempts to quantify this number, is needed. The results may be alarming enough to create a standard policy in all hospitals, which states that effective pain management is required for all newborn circumcisions. References Leef, K. H. (2006). Evidence-based review of oral sucrose administration to decrease the pain response in newborn infants. *Neonatal Network*, 25, 275-284. Yawman, D. Howard, C. R. , Auinger, P. , Garfunkel, L. C. , Allan, M. , & Weitzman, M. (2006). Pain relief for neonatal circumcision: a follow-up of residency training practices. *Ambulatory Pediatrics*, 6, 210-214.