Neonatal Circumcision: Exploring the Pros and Cons

Dianna Wang (PYG-5 Neonatal-Perinatal Medicine)
Supervisor: Dr. Brigitte Lemyre
CMNRP Rounds February 26, 2014

Objectives

- Review the history of neonatal circumcision
- Review the process (analgesia, performer, cost) of neonatal circumcision
- Explore benefits and harms of neonatal circumcision
- Summarize current Canadian and US guidelines

Definition

- Surgical removal of some, or all, of the foreskin/prepuce from the penis

History

- Earliest record from 6th century Egyptians
- Common in Judaism, Islam and some Christian churches in Africa
- Global estimates by WHO: ~30% of males are circumcised
- ~48% of males in Canada are circumcised

History

- The AAP (1971) and CPS (1975) took a stand against circumcision
- CPS continues to be against circumcision where AAP position has become more equivocal

Methods

- Gomco clamp
- Plastibell device
- Mogen Clamp

Analgesia

- Sucrose +/- Pacifier
- Topical Anaesthetic
- Dorsal Penile block
- Subcutaneous ring block

Recommendations for Analgesia

- AAP (2012):
  - Non-pharmacologic should NOT be the sole method of analgesia
  - Topical cream should be avoided for low birth weight infants
- CPS (1996):
  - "Appropriate attention should be paid to pain relief"

Who Performs the Procedure?

- Family Physicians
- Pediatricians
- Obstetricians
- Surgeons (Urologist)
- Traditional/Religious Provider

Cost

- Not covered by OHIP
- Range of Prices
  - In Canada:
    - TOH: Hospital costs of $271.20 + Consultation fee
    - HSC: $399.99
  - In the US: $216 to $601

Benefits

- Urinary Tract Infection
- Sexually Transmitted Infections
- Penile Cancer/Cervical Cancer
- Penile Dermatoses/Phimosis

Urinary Tract Infections

- Etiology: colonization of foreskin with bacteria responsible for UTI
- Reduction of UTI in the first year of life[1]
- Meta-analysis/Systematic Reviews[2]:
  - NNT ~100

1. Ginsburg and McCracken 1982; Wiswell, Smith and Bass 1988; Wiswell and Hachey 1993
2. Shaikh et al, Pediatr Infect Dis J, 2008; Sigh-Grewal et al, Arch Dis Child. 2005

Urinary Tract Infections

- Alternatives to Circumcision:
  - Deliberate colonization
  - "Rooming-in" with mothers

Urinary Tract Infections

- UTI in young adults
  - Retrospective case control study
    - 26 men with confirmed symptomatic UTI compared to 52 men with symptoms but -ve cultures
    - 31% (8/26) of confirmed UTI were uncircumcised and 12% (5/52) of culture –ve UTI were uncircumcised
    - OR 5.6 (95% CI 1.6 to 19.4)

Spach et al, JAMA 1992

Sexually Transmitted Infection

Sexually Transmitted Infection		Effect of Circumcision on Risk
HIV		Decrease
Ulcerative STI	Syphilis	Decrease/No Effect
	Genital Herpes	No Effect
	Chancroid	No Effect
	Lymphogranuloma Venerum	Decrease/No Effect
Non-Ulcerative STI	Bacterial Vaginosis	Decrease/No Effect
	Chlamydia	No Effect
	Gonorrhea	No Effect
	HPV	Decrease

HIV

- Protection against heterosexually acquired HIV
- In the US: 15.7% reduction in lifetime HIV Risk
- May reduce risk of transmission to female partner
- Less likely to protect MSM

Sansom et al, PLoS one, 2010
Weiss et al. Lancet, 2009; Wawer et al, Lancet, 2009

HPV

- 30-40% reduction in risk of infection in circumcised men
- Reduction of risk of male to female transmission*

Guiliano et al, Int J Cancer, 2009
Wawer et al, Lancet, 2011

Penile Cancer

- Baseline incidence very low
  - 0.58 per 100 000 in 1993 to 2000 (US)
- Christakis et al. Pediatrics 2000:
  - NNT 909; 2 complications per cancer event
- Learman, Clin Obstet Gynecol 1999:
  - NNT 322,000; 644 complications per cancer event

Cervical Cancer

- No cause-and-effect relation between exposure to uncircumcised sexual partners and cervical cancer

Complications

- Total rate of complications:~0.2%
- Acute (1/3 of all complications):
  - Bleeding (0.08% to 0.18%)
  - Infection (0.06%)
  - Penile Injury (0.04%)

Complications

- Long-term (2/3 of all complications)
  - Excessive residual skin (incomplete circumcision)
  - Excessive skin removal
  - Adhesions
  - Meatal Stenosis
  - Phimosis
  - Epithelial Inclusion Cysts

Canadian Pediatric Society

- Last revised in 1996
- *"The overall evidence of benefits and harms of circumcision is so evenly balanced that it does not support recommending circumcision as a routine procedure for newborns."*

American Academy of Pediatrics

- Last revised in 2012
- *"Evaluation of current evidence indicates that the health benefits of newborn male circumcision outweighs the risks, and the benefits of newborn male circumcision justify access to this procedure for those families who choose it."*

What to say to Parents?

- Background:
  - Cultural, religious and ethnic traditions
  - Medical factors for infant
- Risks and Benefits
- Attempt to reduce the risk of harm

Summary

- The decision to circumcise should be an informed one
- Circumcision should be performed by trained practitioners
- Sterile technique and appropriate analgesia should be used in neonatal circumcision

References

- Position Statements:
  - Outerbridge, E. 1996. Neonatal Circumcision Revisited. CMAJ 154(6): 769 – 780
  - Task Force on Circumcision. 2012. Pediatrics. 130:e756
- UTI:
  - Ginsburg CM, McCracken GH Jr. 1982. Urinary tract infections in young infants. Pediatrics. 69: 409-412
  - Wisewell et al. 1985. Decreased incidence of urinary tract infections in circumcised male infants. Pediatrics. 75: 901-903
  - Wisewell and Hachey. 1993. Urinary tract infections and the uncircumcised state: an update. Clin Pediatr (phila). 32:130-134
  - Spach et al. 1992. Lack of circumcision increases the risk of urinary tract infection in young men. JAMA. 267:679-681
  - Shaikh et al. 2008. Prevalence of urinary tract infection in childhood: a meta-analysis. Pediatr Infec Dis J. 27(4): 302-308
  - Sing-Grewal et al. 2005. Circumcision for the prevention of urinary tract infection in boys: a systematic review of randomized trials and observational studies. Arch Dis Child 90(8): 853-858

References

- HIV:
  - Sansom et al. 2010. Cost effectiveness of newborn circumcision in reducing lifetime HIV risk among US males. PLoS ONE. 5(1): e8723
  - Weiss et al. 2009. Male circumcision and risk of HIV infection in women: A systematic review and meta-analysis. Lancet Infect Dis. 9(110: 669-677
  - Wawer et al. 2009. Circumcision in HIV-infected men and its effect on HIV transmission to female partners in Rakai, Uganda: a randomized control trial. 374(9685):229-237
- HPV:
  - Guiliano et al. 2009. Circumcision and sexual behavior: factors independently associated with human papillomavirus detection among men in the HIM study. Int J Cancer. 124(6): 1251-1257
  - Wawer et al. 2011. Effect of circumcision on HIV-negative men on transmission of human papillomavirus to HIV-negative women: a randomized trial in Rakai, Uganda. Lancet. 377(9761): 209-218
- Cancer:
  - Christakis et al. 2000. A trade-off analysis of routine newborn circumcision. Pediatrics. 105 (1pt3): 246-249
  - Learman LA. 1999. Neonatal circumcision: a dispasionate analysis. Clin Obstet Gynecol. 4(2): 849-859