FULL DISCLOSURE:

Circumcision Information for Health Professionals and Parents

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To make an informed choice, parents of all male infants should be given accurate and unbiased information.

—*Circumcision Policy Statement*, American Academy of Pediatrics, March 1, 1999

Introduction

The history of medicalized circumcision is a fascinating study in Victorian medicine and anti-sexuality.[1] The phenomenon of circumcising boys and girls for pseudomedical reasons was almost exclusively confined to the English-speaking world. American pseudomedical circumcision began in 1870 when New York physician Lewis A. Sayre treated a boy for paralysis by amputating his foreskin.[2] The operation appeared to succeed. Thereafter circumcision was relentlessly promoted as a necessity for hygiene as well as a treatment for all sorts of illnesses, including masturbation, epilepsy, elephantiasis, insanity, asthma, alcoholism, hernia, premature ejaculation, penile cancer, cervical cancer, and virtually every other identified ailment[3] While all of these justifications have been proven false, advocates of circumcision have promulgated a seemingly inexhaustible supply of pretexts for this needless and harmful genital cutting. Circumcision soon was firmly established in the American psyche as a beneficial and desirable procedure.

More recent conjectures that circumcision reduces the incidence of urinary tract infections, penile cancer, HIV and other STDs have similarly not withstood scientific scrutiny.[4] Approximately eighty-five percent of the world's males are not circumcised, including most of those in Europe, Latin America, and Asia.[5] Even though medicalized circumcision was primarily confined to the English-speaking countries, most of those countries have either ceased performing them altogether or have dramatically reduced the practice during the past 20 years. Today, the United States and South Korea (due to American influence) are the only countries in the world where the majority of boys are circumcised for non-religious reasons. Twenty years ago, 90% of American boys were being circumcised at birth, but currently this figure has dropped to about 59%.[6] In the seven Western states, only about 35% of boys now have their foreskin amputated.[7] On March 1, 1999, the American Academy of Pediatrics (AAP), after an exhaustive two-year study, concluded that the routine circumcision of male infants was not essential to their current wellbeing and could not be justified on medical grounds. The Academy therefore could not recommend this procedure.[3] By taking this stand, the AAP is now aligned with every other national medical society in the world.[8]

Anatomy of the Male Foreskin and What Is Lost to Circumcision

1. The male **prepuce** or **foreskin** is part of a complex tissue system designed to protect the penis as well as to provide sexual pleasure.[9]
2. The foreskin contains an estimated 240 feet of nerves, including branches of the **dorsal nerve** and **perineal nerve**, encapsulated **Vater-Pacinian** cells, **Merkel's** cells, **nocioceptors**, between 10,000 to 20,000 specialized erotogenic nerve endings of several types (which can discern slight motion, stretch, subtle changes in temperature, and fine gradations in texture), and thousands of coiled fine-touch mechanoreceptors called **Meissner's corpuscles**—one of the most important sensory components. The foreskin is the most sexually sensitive part of the penis.[10]
3. Just inside the tip of the foreskin lies the **ridged band** which forms an elastic-like closure around the head of the penis to help keep the tissues healthy and moist. This belt of densely innervated, sexually sensitive tissue is removed with circumcision,[11] reducing the fullness and complexity of sexual response.
4. The foreskin constitutes 50% or more of the mobile penile skin, including approximately half of the temperature-sensitive smooth muscle sheath called the **dartos fascia**.[7] This tissue shields the **glans** or head of the penis and the surrounding inner foreskin from dirt, bacteria, and other contaminants.[12] Just like the glans clitoris and female prepuce, the glans penis and inner foreskin are internal organs lined with mucosal membrane similar to that found in the vagina, mouth, and eyelids. When exposed to air and harsh environments through circumcision, the glans develops a tough, dry covering of cells through a process called **keratinization**.[8] As a result the sensitivity of the underlying nerve endings becomes dulled.
5. The **frenulum**—the very sensitive V-shaped, web-like tethering structure on the underside of the glans is a continuum with the ridged band and is designed to assist in uncovering and recovering the glans. It is one of the most densely innervated tissues in the body and constitutes an essential component of sexual stimulation. Circumcision destroys both its function and its normal potential for full erogenous sensations.
6. The smooth mucosa of the inner foreskin is part of the **immunological defense system** that produces antibacterial and antiviral proteins such as **lysozymes** (also found in mother's milk), and plasma cells which secrete antibodies.[10] It also contains specialized epithelial

Langerhans cells,[11] a component of the immune system along with lymphatic vessels, which provide lymph flow. Loss of these structures disrupts their protective function.

7. During intercourse, the foreskin "glides" over itself.[13, 14] If unfolded and spread out flat, the average adult foreskin measures about 15 square inches. This highly erogenous, specialized, self-lubricating mobile skin gives the penis its unique ability to glide in and out of itself—permitting normal stimulation of oneself and one's partner during intercourse. This non-abrasive gliding of the penis within the vagina facilitates smooth, comfortable, pleasurable intercourse for both partners.[9] Without this gliding action, the corona of the circumcised penis functions as a one-way valve, drawing out vaginal lubricants and increasing the need for artificial lubricants during intercourse.[9]
8. At birth, the foreskin is fused to the glans by what is known as balano-preputial lamina.[15] These lamina—similar to the structures that adhere fingernails to their beds—tightly fuse the foreskin and the glans together for protection while the penis develops. The first person to retract a foreskin should be the boy himself (and it may not be fully retractable until puberty). Forcibly retracting the foreskin usually causes infection and scarring.[16]
9. Several feet of blood vessels, including the frenular artery[8] and branches of the dorsal artery, help supply blood to the penis and are essential for proper growth and function. The loss of this dense vascularity interferes with normal blood flow to the shaft and glans of the penis,[12] possibly stunting their complete development. Blockage of these vessels may also result in ad hoc re-connections, producing unsightly lumps and varicosities.

Potential Complications of Circumcision

According to the Fetus and Newborn Committee of the Canadian Paediatric Society,[17] "the incidence rate of the complications of circumcision reported in published articles varies, but it is generally in the order of 0.2% to 2%. Most complications are minor, but occasionally serious complications occur. There is a need for good epidemiological data on the incidence of the surgical complications of circumcision, of the later complications of circumcision, and of problems associated with lack of circumcision…. Circumcision may lead to complications, which range from minor to severe. They include easily controllable bleeding,[18, 19] amputation of the glans,[17, 20] acute renal failure,[21] life-threatening sepsis, and, rarely, death.[17, 18] The evidence of postoperative complications is unknown.[17] The rates of complications reported in several large case series are low, from 0.2% to 0.6%.[4] However, published rates range as widely as 0.06%[22]to 55%.[23] Williams and Kapila have suggested that a realistic rate is between 2% and 10%."[24]

The following are possible complications of circumcision:

1. Hemorrhage (bleeding): Serious hemorrhaging occurs in about two percent of infants, resulting in shock and sometimes death.[18,22] Boys with unrecognized bleeding disorders are at risk for serious hemorrhage.
2. Infections: Localized or systemic infections include septicemia,[25] meningitis,[26] lung abscess,[27] diphtheria,[28] tuberculosis,[29] staphylococcal scalded skin syndrome,[30, 31] gangrene of the penis and scrotum,[32, 33]scrotal abscess,[34] impetigo,[35] necrotizing fascitis of the abdominal wall,[36] tetanus,[37] and necrosis of the perineum.[38] Patel rported an infection rate of 8%.[23]
3. Urinary retention: Swelling from the trauma of surgery, pain associated with attempts at urination, and sometimes the Plastibell device can cause the retention of urine,[39] possibly leading to acute obstructive uropathy (the bladder distends to the point of rupture).[40]
4. Excessive penile skin loss: Occurs when so much of the prepuce is drawn forward that the entire penile skin sheath is removed.[41, 42] From puberty on, penile bowing (curvature) and pain occur at the time of erection. With erection, pubic hair can be pulled forward onto the penile shaft and bleeding during sex can occur from shaft skin tears. Skin grafts are sometimes required.
5. Beveling deformities of the glans: Varying amounts of the glans are shaved off leaving a scarred, beveled surface[43] and, at times, the entire glans is amputated.[44]
6. Iatrogenic or urethral fistulas: Urethral fistulas can also result from circumcision. When the frenular area (underside of the penis) is drawn too far forward, the crushing bell may injure the urethra at the time the foreskin is removed, resulting in a urethral opening on the underside of the shaft.[45]
7. Epispadias: If one limb of the hemostat is inadvertently passed into the urethra and closed, it crushes the upper portion of the urethra and glans, creating a urethral opening on the dorsum (top) of the glans.[46]
8. Retention of the Plastibell ring: The Plastibell, which normally falls off in 10 days, may get buried under the skin, causing ulceration and/or necrosis.[47] Loss of the glans has also been reported.
9. Iatrogenic chordee (permanent bowing of the penis): Dense scarring at the frenular area can cause the penis to bow upon erection and may require plastic surgery to repair.[19]
10. Keloid formation: Prominent scars can occur where the skin or mucous membrane has been excised, incised, crushed, or sutured.[48, 49]
11. Skin bridges and penile adhesions: These constitute a common complication consisting of one or more thick areas of scar tissue that form bridges between the

coronal edge of the exposed glans and the circumcision wound on the shaft.[50, 51, 52] For some men, this condition can be quite painful during erection, restricting the free movement of the shaft skin and causing a pull on the glans.

12. Phimosis of remaining foreskin: When only a segment of the foreskin is removed, the remaining tip sometimes becomes tight and non-retractable, requiring a second surgery.[53]
13. Preputial cysts: Preputial cysts may be caused by infection or mechanical distortion blocking the sebaceous glands.[13]
14. Skin tags: A cosmetic problem may occur at the circumcision line when pieces of skin are present at places along the line due to an uneven removal of skin.
15. Loss of part or all of the penis: In the event of constriction caused by the Plastibell, the electrocautery device,[54] or more frequently by infection, the penis becomes increasingly necrotic (dead) until the entire organ drops off.[47] This has resulted in castration and sex reassignment.[55]
16. Meatitis: This condition consists of an inflammation of the meatus (urethral opening), leading to ulceration and meatal stenosis (narrowing).[13]
17. Meatal ulceration: Caused by meatitis and/or abrasions from diapers (dry or soiled). Meatal ulceration does not occur in the intact penis but occurs in up to 50% of circumcised boys.[56]
18. Meatal stenosis: In advanced meatal ulceration, scar tissue can constrict the urethral opening causing urinary obstruction. Meatal stenosis is usually not apparent for several years, occurring to some degree in about one-third of all circumcised infants and not at all in intact males.[57]
19. Ammoniacal dermatitis: This can happen with or without a foreskin. When it occurs without the protective covering of the foreskin, the ammonia breakdown product of urine burns the unprotected tissue and can ulcerate the urethral meatus (Brennemann's ulcers).[58] When the ulcers heal, the scar formation causes meatal stenosis.
20. Tachycardia, heart failure, and myocardial injury: These have all been reported to have been associated with circumcision.[59]
21. Progressive loss of glans sensitivity: This is the most common complaint of adult circumcised men. Some report that over-stimulation is needed to the point of pain in order to achieve orgasm.[9]
22. Sexual dysfunction: Impotence and premature ejaculation are more common in circumcised males.[60]
23. Nonspecific urethritis: Nonspecific urethritis is a venereal disease with the following characteristics, side effects, causes, etc. The condition is more commonly found in circumcised adults.[61]
24. Death: While accurate data are not recorded, it has been estimated that approximately 230 boys die each year in the United States alone from circumcision-related complications.[62, 63]

Medical Indications for Circumcision

1. Cancer of the foreskin: An extremely rare and easily diagnosed condition found mostly in elderly patients who smoke and who have poor lifestyle habits—may not require the amputation of the complete foreskin if detected early.
2. Trauma: Some accidents involving the foreskin may require complete or partial circumcision.
3. Balanitis xerotica obliterans (BXO): A rare chronic inflammation causing a hardened, whitish area near the tip of the penis. This may cause preputial stenosis and meatal scarring which can block the urethra and the flow of urine and semen.[64] In most cases, circumcision can be avoided by use of antibacterial or anti-inflammatory creams (corticosteriods), or by laser therapy, but often the urethra must be reopened surgically.

Complications from Anesthesia (if used)

Most infant circumcisions in the United States are performed without anesthesia.[65] The American Academy of Pediatrics now recognizes that significant pain occurs during the procedure and states that pain relief should be provided.[2, 66] The permanent psychological trauma of circumcision shortly after birth without anesthesia has not been fully investigated.[67] Nevertheless, many studies show there is significant, long-term psychological harm.[69, 68, 69, 70] In addition to being of very doubtful effectiveness, some of the complications from administering anesthesia are:

1. Bleeding: Bleeding as a complication of anesthesia usually arises as a result of small ecchymoses (bruises) at injection sites at a rate of around 1.2%.[71]
2. Methemoglobinemia: A reduction of the oxygen carrying capacity of the blood may occur as a complication of anesthesia for circumcision.[72]

Recently Cited Alleged Benefits

Benefits cited by proponents of circumcision include reducing the incidence of:

1. Urinary tract infections (UTIs): A few studies have suggested that boys who are not circumcised may have a one percent chance of developing a UTI.[2] These studies have all been done in either military or inner-city hospitals and suffer serious methodological flaws.[2] The one study that was not done in such a hospital showed a urinary tract infection rate of 0.12%—the same as for boys who were circumcised. The risk of urinary tract infections in Sweden, where few boys are circumcised, is 0.5%. There is also evidence that circumcision may mask the symptoms of serious urinary tract abnormalities.[73] The 1999 AAP report points out the numerous methodological flaws of the UTI research that fail to evaluate the impact of confounding variables such

as prematurity, breastfeeding, rooming-in, and urine sample collection.[2] Studies done in Israel show an actual increase in UTIs following circumcision.[17, 74, 75]

2. Penile cancer: Infants do not get penile cancer. Penile cancer is extremely rare, affecting only about 1 in 100,000 men in the United States. Studies from the 80s and 90s have shown that penile cancer generally occurs in older men who have exhibited cancer-inducing behaviors in association with contracting the human papilloma virus.[76, 77, 78, 79, 80] This rate is twice to three times higher than the rate measured in non-circumcising, industrialized countries such as Denmark, Norway, Finland, and Japan.[81, 82, 83, 84] Consequently, circumcision promoters advocate the circumcision of 99,999 babies in order to allegedly protect one of them from a rare disease in old age that can be successfully treated with less drastic measures. Furthermore, according to statistics of the American Cancer Society (ACS), more men contract and die of breast cancer in this country than penile cancer. According to the ACS, "Circumcision is not of value in preventing cancer of the penis."[85]
3. Phimosis (narrow foreskin opening): A narrow foreskin opening is normal in all boys. "Phimosis" is a frequent misdiagnosis by American doctors ignorant of this fact. As boys age and develop, their foreskin opening will naturally widen. True phimosis occurs in fewer than 1% of boys, wherein 90% of those affected can be successfully treated with steroid cream.[86] The remaining 10% can be treated with plastic surgery that preserves the foreskin.[87]
4. AIDS and other sexually transmitted diseases (STDs): Some studies in Africa have suggested that HIV infections are more common in men with foreskins. These studies did not account for cultural, economic, and religious differences between different groups.[88] The United States has one of the highest rates of circumcision in the world as well as one of the most rapid increases in HIV infections.[89] While Japan, Norway, Finland, and Denmark have similar or lower rates of HIV and other STDs than does the US, none of these countries routinely circumcise. According to the American Medical Association, American Academy of Pediatrics, and the Australasian Association of Paediatric Surgeons, behavioral factors are far more important risk factors for acquisition of HIV and other sexually transmissible diseases than circumcision status, and circumcision cannot be responsibly viewed as protecting against such infections.[4, 8, 90]

Ethical and Legal Considerations

An infant can neither be informed nor give consent for elective surgery.[91] Removal of healthy tissue is forbidden by medical ethics as well as by universally accepted principles of human rights. All children are supposedly protected by the 5th, 14th, and 19th Amendments to the United States Constitution, which provide equal protection and prohibit discrimination on the basis of gender. If a parent requests an amputation of part of a child's body, such as an ear, finger, labia, or foreskin, the physician must make an independent assessment and decision about such a procedure.[92, 93] If an irreversible procedure such as circumcision has no clear medical justification, the physician must refuse the parent's request. To do otherwise makes the physician legally liable.[94] Only the person affected can consent to damaging procedures.[95, 96]

This raises a serious ethical question for physicians and parents. The issue of informed consent in pediatric practice was addressed by the American Academy of Pediatrics (AAP) Committee on Bioethics in 1995.[97] Several statements are relevant to circumcision, among them:

"Parents and physicians should not exclude children and adolescents from decision-making without persuasive reasons. Thus 'proxy consent' poses serious problems for pediatric health care providers. Such providers have legal and ethical duties to their child patients to render competent medical care based on what the patient needs, not what someone else expresses.

"A patient's reluctance or refusal to assent should also carry considerable weight when the proposed intervention is not essential to his or her welfare and/or can be deferred without substantial risk."

The legal status quo in the United States, whereby circumcisions are not punished either criminally or civilly as long as they are done "competently" and with "consent" of the parents, must be unstable. Parental consent is invalid except under certain limited circumstances not met by routine infant circumcision.[98]

Recent policy statements by the Australasian Association of Paediatric Surgeons are even more clear in their ethical position:

"We do not support the removal of a normal part of the body, unless there are definite indications to justify the complications and risks which may arise. In particular, we are opposed to male children being subjected to a procedure, which had they been old enough to consider the advantages and disadvantages, may well have opted to reject the operation and retain their prepuce."[99]

We recognize the inherent right of all
human beings to an intact body.
Without racial or religious prejudice,
we affirm this basic human right.

—International Coalition for Genital Integrity

THE INTERNATIONAL COALITION FOR GENITAL INTEGRITY IS AN ALLIANCE OF 21 ORGANIZATIONS DEDICATED TO PROTECTING THE NORMAL ANATOMY OF MALES AND FEMALES.

ITS MEMBERS INCLUDE HEALTH CARE PROFESSIONALS, PSYCHOLOGISTS, RESEARCHERS, ATTORNEYS, JOURNALISTS, ETHICISTS, ACADEMICIANS, AND CITIZEN ACTIVISTS DEDICATED TO ENDING UNNECESSARY GENITAL SURGERY.

References*

1. Moscucci O. Clitoridectomy, Circumcision, and the Politics of Sexual Pleasure In: *Sexualities in Victorian Britain*. Eds: Andrew H. Miller and James Eli Adams. Bloomington, IN: Indiana University Press, 1996: p 63-65.
2. Gollaher DL. From ritual to science: the medical transformation of circumcision in America. *Journal of Social History* 1994;28(1):5-36.
3. Hodges F. A short history of the institutionalization of involuntary sexual mutilation in the United States. In: Denniston GC, Milos MF, editors. *Sexual Mutilations: A Human Tragedy*. New York: Plenum Press; 1997. p. 17-40.
4. American Academy of Pediatrics Task Force on Circumcision. Circumcision Policy Statement, *Pediatrics* 1999;103(3):686-693.
5. Wallerstein E. Circumcision: the uniquely American medical enigma. *Urologic Clinics of North America* 1985;12(1):123-132.
6. Bollinger D, Normal versus Circumcised: U.S. Neonatal Male Genital Ratio, white paper, 7/1/2001.
7. National Center for Health Statistics. Beltsville, MD. Online: <www.census.gov/population/www/socdemo/birth.html>.
8. American Medical Association. Report 10 of the Council on Scientific Affairs (I-99). Neonatal Circumcision.
9. Cold CJ, Taylor JR. The prepuce. *BJU International* 1999;83 Suppl. 1:34-44.
10. Winkelmann RK. The erogenous zones: their nerve supply and significance. *Proceedings of the Staff Meetings of the Mayo Clinic* 1959;34(2):39-47.
11. Taylor JR, Lockwood AP, Taylor AJ. The prepuce: specialized mucosa of the penis and its loss to circumcision. *Br J Urol* 1996;77:291-295.
12. Fleiss P, Hodges F, Van Howe RS. Immunological functions of the human prepuce. *Sex Trans Inf* 1998;74:364-367.
13. Warren J, Bigelow J. The case against circumcision. *Br J Sex Med* 1994; Sept/Oct:6-8.
14. Milos MF, Macris DR. Circumcision: male—effects upon human sexuality. In: *Human Sexuality: An Encyclopedia* Vern L. Bullough and Bonnie Bullough. (eds.) New York: Garland Publishers, 1994:p. 119-122.
15. Deibert, GA. The separation of the prepuce in the human penis. *Anat Rec* 1933;57:387-399.
16. Spock B, Parker SJ. *Baby and Child Care (7th edition)* New York, Pocket Books, 1998:p. 94.
17. Fetus and Newborn Committee, Canadian Paediatric Society. Neonatal Circumcision Revisited. *Can Med Assoc J* 1996;154(6):769-780.
18. Kaplan GW. Complications of circumcision. *Urol Clin N Amer* 1983;10:543-549.
19. Kaplan GW: Circumcision: an overview. *Curr Probl Pediatr* 1977;7(5):1-33.
20. Gluckman GR, Stoller ML, Jacobs MM, et al: Newborn penile glans amputation during circumcision and successful reattachment. *J Urol* 1995;153:778-779.
21. Eason JD, McDonell M, Clark G: Male ritual circumcision resulting in acute renal failure. *BMJ* 1994;309:660-661.
22. Speert H: Circumcision of the newborn: an appraisal of the present status. *Obstet Gynecol* 1953;2:154-172.
23. Patel H. The problem of routine infant circumcision. *Can Med Assoc J* 1996;95:576-581.
24. Williams N, Kapila L. Complications of circumcision. *Brit J Surg* 1993;80:1231-1236.
25. Kirkpatrick BV, Eitzman DV. Neonatal septicemia after circumcision. *Clin Pediatr* 1974;13:767-768.
26. Scurlock JM, Pemberton PJ. Neonatal meningitis and circumcision. *Med J Aust* 1977;1(10):332-334.
27. Sauer LW. Fatal staphylococcus bronchopneumonia following ritual circumcision. *Am J Obstetr Gynecol* 1943;46:583.
28. Rosenstein JL. Wound diptheria in the newborn infant following circumcision. *J Pediatr* 1941;18:657-658.
29. Mahlberg FA, Rodermund OE, Muller RW. Ein Fall von Zirkumzision-stuberkulose. [A case of circumcision tuberculosis] *Hautarzt* 1977;28:424-425.
30. Annunziato D, Goldblum LM. Staphylococcal scalded skin syndrome. A complication of circumcision. *Am J Dis Child* 1978;132(12):1187-1188.
31. Anday EK, Kobori J. Staphylococcal scalded skin syndrome: a complication of circumcision. *Clin Pediatr Phila* 1982;21:420.
32. Hamm WG, Kanthak FF. Gangrene of the penis following circumcision with high frequency current. *South Med J* 1949;42:657-659.
33. Evbuomwan I, Aliu AS. Acute gangrene of the scrotum in a one-month-old child. *Trop Geogr Med* 1984;36:299-300.
34. Uwyyed K, Korman SH, Bar Oz B, Vromen A. Scrotal abscess with bacteremia caused by Salmonella Group D after ritual circumcision. *Pediatr Infect Dis J* 1990;9:65-66.
35. Stranko J, Ryan ME, Bowman AM. Impetigo in newborn infants associated with a plastic bell clamp circumcision. *Pediatr Infect Dis* 1986;5:597-599.
36. Ngan JH, Waldhausen J, Santucci R. "I think this child has an infected penis after neonatal circumcision...". *Online Pediatric Urology* April 1996.
37. Gosden M. Tetanus following circumcision. *Trans R Soc Trop Med Hyg* 1935;28:645-648.
38. Sussman SJ, Schiller RP, Shashikumar VL. Fournier's syndrome. Report of three cases and review of the literature. *Am J Dis Child* 1978;132(12):189-1191.
39. Lee LD, Millar AJW. Ruptured bladder following circumcision using Plastibell device. *Br J Urol* 1990;65:216-217.
40. Craig JC, Grigor WG, Knight JF. Acute obstructive uropathy—a rare complication of circumcision. *Eur J Pediatr* 1994;153:369-371.
41. Van Duyn J, Warr WS. Excessive penile skin loss from circumcision. *J Med Assoc Georgia* 1962;51:394-396.
42. Sotolongo JR Jr, Hoffman S, Gribetz ME. Penile denudation injuries after circumcision. *J Urol* 1985;133(1):102-103.
43. Hanash KA. Plastic reconstruction of partially amputated penis at circumcision. *Urology* 1981;18(3):291-293.
44. Gluckman GR. Newborn penile glans amputation during circumcision and successful reattachment. *Journal of Urology* 1995;153(3):778-779.
45. Baskin LS. Canning DA. Snyder III HM. Duckett JW Jr. Surgical repair of urethral circumcision injuries. *Journal d'Urologie* 1997;158(6):2269-2271.
46. McGowan Jr AW. A complication of circumcision. *JAMA* 1969;207(11):2104.
47. Jonas G. Retention of a Plastibell circumcision ring: report of a case. *Obstetr Gynecol* 1984;24:835.
48. Eldin US. Post-circumcision keloid—a case report. *Annals of Burns and Fire Disasters* 1998;XII(3):174.
49. Köksal, T, Kadioglu A, & Tefekli A. Keloid as a complication after circumcision. *BJU Int* 2000;85(6):1-2.
50. Klauber GT, Boyle J. Preputial skin-bridging. Complication of circumcision. *Urology* 1974;3:722-723.
51. Sathaye VU, Goswami AK, Sharma SK. Skin bridge—a complication of paediatric circumcision. *Br J Urol* 1990;66:214.
52. Ritchey ML, Bloom DA. Re: Skin bridge—a complication of paediatric circumcision. *Br J Urol* 1991;68:331.

* Many of these articles, or their abstracts, can be viewed online using links in the web version of this document at www.icgi.org

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53. Redman JF, Schriber LJ, Bissada NK. Postcircumcision phimosis and its management. *Clin Pediatr* 1975;14:407-409.
54. Gearhart JP, Rock JA. Total ablation of the penis after circumcision with electrocautery: a method of management and long-term followup. *J Urol* 1989;142(3):799-801.
55. Bradley SJ, Oliver GD, Chernick AB. Experiment of nurture: Ablatio penis at 2 months, sex reassignment at 7 months, and a psychosexual follow-up in young adulthood. *Pediatrics* 1998;102(1):e9.
56. Meyer HF. Meatal ulcer in the circumcised infant. *Med Times* 1971;99:77-78.
57. Persad R, Sharma S, McTavish J, et al. Clinical presentation and pathophysiology of meatal stenosis following circumcision. *Br J Urol* 1995;75(1):91-93.
58. Brennemann, J. The ulcerated meatus in the circumcised child, *Am J Dis Child* 1921;21:38-47.
59. Ruff ML, Clarke TA, Harris JP, et al. Myocardial injury following immediate postnatal circumcision. *Am J Obstet Gynecol* 1982;144:850-851.
60. Zwang G. Functional and erotic consequences of sexual mutilations. In: Marilyn F. Milos and George C. Denniston, (eds.) *Sexual Mutilations: A Human Tragedy*, New York: Plenum Press, 1997.
61. Smith GL, Greenup R, Takafuji ET. Circumcision as a risk factor for urethritis in racial groups. *Am J Public Health* 1987;77:452-454.
62. Gellis, SS. Circumcision. *Am J Dis Child* 1978;132:1168.
63. Baker RL Newborn male circumcision: Needless and Dangerous *Sexual Medicine Today*, 1979;3(11):35-36.
64. Rickwood AMK, Hemalatha V, Batcup G, Spitz L. Phimosis in boys. *Brit J Urol* 1980;52:147-150.
65. Stang HJ, Snellman LW. Circumcision practice patterns in the United States. *Pediatrics* 1998;101:e5.
66. American Academy of Pediatrics. Committee on Fetus and Newborn, Committee on Drugs, Section on Anesthesiology, Section on Surgery. Prevention and management of pain and stress in the neonate. *Pediatrics* 2000;105(2):454-461.
67. Goldman R. The psychological impact of circumcision. *BJU International* 1999;83 Suppl.1:93-103.
68. Cansever G. Psychological effects of circumcision. *Brit J Med Psychol* 1965;38:321-331.
69. Richards MPM, Bernal JF, Brackbill Y. Early behavioral differences: Gender or circumcision? *Dev Psychobiol* 1976;9:89-95.
70. Taddio A, Katz J, Ilersich AL, et al. Effect of neonatal circumcision on pain response during subsequent routine vaccination. *The Lancet* 1997;349:599-603.
71. Snellman LW, Stang HJ. Prospective evaluation of complications of dorsal penile nerve block for neonatal circumcision. *Pediatrics* 1995;95(5):705-708.
72. Arda IS, Özbek N, Akpek E. Ersoy E. Toxic neonatal methaemoglobinaemia after prilocaine administration for circumcision. *BJU International* 2000,85(9),1-1.
73. Fetus and Newborn Committee, Canadian Paediatric Society. Neonatal circumcision revisited. *Can Med Assoc J* 1996;154(6):769-780.
74. Cohen H, et al. Postcircumcision urinary tract infection. *Clinical Pediatrics* 1992;31(6):322-324.
75. Goldman M, Barr J, Bistritzer T, Aladjem M. Urinary tract infection following ritual Jewish circumcision. *Israel Journal of Medical Sciences* 1996;32(11):1098-1102.
76. Bissada NK, Morcos RR, el-Senoussi M. Post-circumcision carcinoma of the penis. I. Clinical aspects. *J Urol* 1986 Feb;135(2):283-5.
77. McCance DJ, Kalache A, Ashdown K, et al. Human papillomavirus types 16 and 18 in carcinomas of the penis from Brazil. *Int J Cancer* 1986;37:55-59.
78. Kaufman RH, Adam E: Herpes simplex virus and human papilloma virus in the development of cervical carcinoma. *Clin Obstet Gynecol* 1986;3:678-692.
79. Poland RL. The Question of Routine Neonatal Circumcision. *The New England Journal of Medicine*,1990;22(18):1312-1315.
80. Cupp MR, Malek RS, Goellner JR, Smith TF, Espy MJ The detection of human papillomavirus deoxyribonucleic acid in intraepithelial, in situ, verrucous and invasive carcinoma of the penis. *Journal of Urology*, 1995;154(3):1024-1029.
81. Frisch M, Friis S, Kjear SK, Melbye M. Falling incidence of penis cancer in an uncircumcised population (Denmark 1943-90). *BMJ* (London) 1995;311(7018):1471.
82. Iverson T, et al. Squamous cell carcinoma of the penis and of the cervix, vulva and vagina in spouses: is there any relationship? An epidemiological study from Norway, 1960-92. *Br J Cancer*. 1997;76:658.
83. Maiche AG, Epidemological aspect of cancer of the penis in Finland. *Eur J Cancer Prev* 1992;1:153-158.
84. Cendron M, Elder JS, Duckett JW. Perinatal urology. In*: Campbell's Urology*. 7th edition. Vol. 3. Philadelphia: W.B. Saunders Company;1998. p. 2151.
85. The American Cancer Society's Online Cancer Resource Center—Penile Cancer Resource Center <www3.cancer.org/cancerinfo/load_cont.asp?st=pr&ct=35>.
86. Orsola A, Caffaratti J, Garat JM. Conservative treatment of phimosis in children using a topical steroid. *Urology* 2000;56(2):307-310.
87. Lane TM, South LM. Lateral preputioplasty for phimosis. *J R Coll Surg Edinb* 1999;44(5):310-312.
88. de Vincenzi I, Mertens T. Male circumcision: a role in HIV prevention? *AIDS* 1994;8(2):153-160.
89. Van Howe RS. Circumcision and HIV infection: Review of the literature and meta-analysis. *Int J STD AIDS* 1999;10:8-16.
90. Australasian Association of Paediatric Surgeons, *Guidelines for Circumcision*. Herston, QLD: 1996.
91. Task Force on Pediatric Research, Informed Consent, and Medical Ethics. Consent. *Pediatrics* 1976;57(3):414-417.
92. Bioethics Commitee, Canadian Paediatric Society. *Treatment Decisions for Infants and Children*. Reference B86-01. Ottawa (1986).
93. American Academy of Pediatrics Committee on Bioethics. Informed consent, parental permission, and assent in pediatric practice. *Pediatrics* 1995;95(2):314-317.
94. Gregory J Boyle, J Steven Svoboda, Christopher P Price, J Neville Turner. Circumcision of Healthy Boys: Criminal Assault? *7 J Law Med* 301 (2000).
95. Somerville MA. Medical Interventions and the Criminal Law. *26 McGill Law Journal* 82 (1980).
96. Somerville MA. Therapeutic and non-therapeutic medical procedures—What are the distinctions? *Health Law in Canada* 1981;2(4):85-90.
97. American Academy of Pediatrics, Committee on Bioethics. Informed consent, parental permission, and assent in pediatric practice. *Pediatrics* 1995;95:314-317.
98. Svoboda JS, Van Howe RS, Dwyer JG. Informed consent for neonatal circumcision: an ethical and legal conundrum. *J Contemp Health Law Policy* 2000;17(1):60-134.
99. Guidelines for Circumcision. Australasian Association of Paediatric Surgeons. Hersion, QLD: 1996.