Circumcision of Pacific boys: tradition at the cutting edge.

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Abstract
Circumcision of neonates and young boys, is a frequently performed elective surgical procedure, and is one of the oldest known surgical procedures. When properly performed circumcision prevents phimosis, paraphimosis, and balanoposthitis and has been shown to decrease the incidence of penile among men and cervical cancer among the women sexual partners of circumcised men. It may also result in a decreased incidence of urinary tract infection, sexually transmitted infections and HIV infection. Circumcision also has its own inherent risks. The risk are mainly associated with the procedure (pain, bleeding, inflammation) also included post operative infection, poor healing, excess foreskin removed leading to minor or major loss of sensation, accidental cutting of the glan penis, and cross infection if performed with un-sterile instruments especially during ritual circumcisions. To make an informed choice, parents should be given accurate and unbiased information and be provided the opportunity to discuss this decision. (PHD 2006 Vol 13 No 2 Pages 115 - 122)

Introduction
Circumcision has long been practiced among Pacificans and around the world for a number of reasons ranging from social-cultural, religious and medical reasons which vary from country to country. World wide 25% of men have been circumcised, and in the United States alone, 80-90% of all newborn babies are circumcised as compared with any other country. In Pacific countries the rates are unknown due to a number of reasons, mainly due to reporting of circumcision to the national health information system as in the case of Samoa and Tonga. In New Zealand the perceived decline in circumcision is due to refusal of the medical fraternity to perform this procedure and the Pacificans being circumcised in garages, in their home countries or medical practices that do not report circumcisions to the national health information systems. In Pacific countries, neonatal circumcision and amputation of the foreskin are rarely practiced because the circumcisions of boys in many Pacific cultures are done at the ages between 7 to 15 years; a solemn ritual; and it is a rite of passage for young boys. Most Pacificans and their parents from a study in Christchurch, New Zealand felt that circumcision is a necessary disease prevention, hygiene and cultural identity measure. A few believe that it's a good thing and may also improve sexual performance.

Circumcision has become a traditional practice for Pacificans. There is evidence that circumcision was practiced before the arrival of Christian missionaries. Over the years there has been widespread condemnation of the procedure without proper examination of the evidence (ref Wayne Hampton from my reprint Negative aspects of circus). Much of the condemnations have revolved around the complications of neonatal circumcision, amputation of the foreskin and the barbaric circumcision of women. This paper objectively reviews the literature and present experiences with Tongan boys' circumcision, with the dorsal slit of the foreskin, in Auckland.

Definition of Circumcision
Circumcision is defined as surgical removal of the foreskin covering the glan penis. In some cases, as in most Pacific islands, circumcision is the permanent exposure of the glan penis with a dorsal slit to the foreskin of boys from 7-10 years old up to adults. Among Europeans the most popular circumcision is the amputation of the foreskin by sleeve resection, Gomco Clamp or Plastibell. The different types of circumcision are shown in following figures:
Types of Circumcision

1) Dorsal Slit

2) Amputation of Foreskin
   a. Sleeve Resection
   b. Gomco Clamp
   c. Plastibell
History of Circumcision
The evolution of circumcision is highly debatable, but circumcision is as old as any known civilization in recorded history of mankind. It is in the Old Testament of the Bible, and dated as far back as 4000 B.C. in Egypt. Circumcision practices vary with societies, cultures and religious beliefs. In some societies it was practiced to mark captured enemies and disgracing them as well as marking of slaves. It is believed that circumcision may have stemmed from and attenuation of castration of captured enemies and slaves. However in some cultures, circumcision was practiced to indicate social class (status), ethnicity (cultural identity), religion (cleansing of sins), and pubertal rite of passage and as a ceremonial sacrifice to the gods. 3-6

The spread of the practice of circumcision is poorly understood and it is believed that the main reason behind the spread of circumcision is by way of ritual practices associated with religious beliefs and practices as well as cultural and traditional practices, e.g. the Covenant between God and Abraham (Book of Genesis 17). The transformation of ritual circumcision to a routine medical/surgical operation took place in the late 19th century. This came about primarily as a result of several published works by physicians linking circumcision as a miracle cure for several medical surgical and mental conditions.

By the mid 20th century, circumcision as a miracle cure was challenged by Britain’s changes in health care system in 1948, Gairdner’s publication on natural history of the foreskin in 1949, recommendations against routine neonatal circumcision by the Australian Pediatrics Association and the Canadian Pediatrics Society in the early 1970’s and the American Academy of Pediatrics (AAP) Task Force on Circumcision in the mid 1970’s, stating that “circumcision offered no medical benefits during the neonatal period.” By 1989 in the light of new evidence, the AAP change its statement in favor of routine circumcision and later change it again in it’s 1999 report stating that “Existing scientific evidence demonstrates potential medical benefits of new born male circumcision; however these data are not sufficient to recommend routine neonatal circumcision, and that benefits and risks of circumcision should be explained to the parents before making an informed choice.”

Much of the waning and waxing of the debates were about the changing professional attitude to neonatal circumcision and amputation of the foreskin. There was little evidence of complications or discussion of circumcision using of the dorsal slit method among boys and adults (Washington B (1999). Adult circumcision. American Family Physician. http://www.findarticles.com/cf_dls/m3225/6_59/54129340/print.html, 10/13/2001) to Circumcision, Risks, Benefits, Advantages and Disadvantages of male circumcision. Only articles with the above words were selected during my search especially reviewed journal articles. All types of study designs were selected if Circumcision and Risks and Benefits OR Advantages and Disadvantages of Circumcision were discussed. A number of articles were found and only 8 review articles and some historical articles were selected.

Circumcision Study at Langimalie Clinic, Auckland:
At Langimalie Clinic in 1998, 42 boys were circumcised over a 3 day period. This provided an opportunity to examine the issues related to circumcision. All the boys and 42 parents were given a questionnaire each to complete on the reasons for circumcision. All the boys had a disease screening full medical examination with a full blood count; urine microscopy and culture; and hepatitis B antigen and antibody serology. For each child an informed consent was signed by the parents or guardians on the day of the procedure. The procedure was as follows, lignocaine local anesthetic was injected into the dorsal aspect of the foreskin; the foreskin was fully retracted; the penis was cleaned with antiseptic; a number 12 blade was placed on the penis and the foreskin pulled back over the penis; the blade was pushed through the base of the foreskin and pulled forward slicing the foreskin and avoiding the dorsal blood vessels; the split foreskin edges were sutured and pressure bandages applied. After the circumcision, the parents were given a 24 hour emergency phone number for any queries. On the third day the dressings were removed. If the incision was clinically infected, an oral antibiotic and daily dressing were given. All the boys
were followed up after one and 8 months to assess their satisfaction with the procedure.

Results

Literature Review: The papers reviewed demonstrated the potential social, medical, surgical and economical benefits of male circumcision. A number of studies highlighted the potential risks but the long term benefits from circumcision appeared to outweigh the risks.

The long term benefits associated with circumcision included; reductions in Urinary Tract Infections (UTI), especially in the first year of life; protection against HIV-1 infection, cancer of the penis and cancer of the cervix; and lower risk of phimosis and some sexually transmitted infections (STI).

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cross-Section</th>
<th>Case-Control</th>
<th>Cohort</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>N</td>
<td>S</td>
<td>N</td>
</tr>
<tr>
<td>GUD+</td>
<td>5</td>
<td>(a)</td>
<td>1</td>
<td>(b)</td>
</tr>
<tr>
<td>Syphilis</td>
<td>4</td>
<td>(e)</td>
<td>3</td>
<td>(f)</td>
</tr>
<tr>
<td>Herpes</td>
<td>1</td>
<td>(i)</td>
<td>3</td>
<td>(j)</td>
</tr>
<tr>
<td>Gonorrhrea+</td>
<td>4</td>
<td>(m)</td>
<td>3</td>
<td>(n)</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>1</td>
<td>(r)</td>
<td>4</td>
<td>(s)</td>
</tr>
<tr>
<td>Genital Warts</td>
<td>1</td>
<td>(u)</td>
<td>2</td>
<td>(v)</td>
</tr>
</tbody>
</table>

*Circumcision increased the risk of genital warts (odds ratio, 1.4)
+ Two studies (65 & 74) had both cross-sectional and cohort arms, each reporting dissimilar results between cross-sectional and cohort arms.

References: a 61-65; b 66; c 67,68; d 65; e 69-72; f 29,73,74; g 75; h 74; i 69; j 29,72,73; k 76; l 77; m 69,72,76; n 29,73,74; o 79; p 74,80,98, r 78; s 29,69,72,74; t 68,74; u 72; v 73,81; w 68; S = statistically significant results; N = not statistically significant results; GUD genital ulcerative disease.

Table 3: Meta-analysis of the association between Circumcision and Risk of HIV infection.
(Re-Adopted from Alanis et al*)

<table>
<thead>
<tr>
<th>Study population</th>
<th>Crude Analysis*</th>
<th>Adjusted Analysis+</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>RR (CI)</td>
</tr>
<tr>
<td>All</td>
<td>27</td>
<td>0.52 (0.40 - 0.68)</td>
</tr>
<tr>
<td>Population-based</td>
<td>12</td>
<td>0.93 (0.71 - 1.21)</td>
</tr>
<tr>
<td>High-Risk</td>
<td>12</td>
<td>0.27 (0.22 - 0.33)</td>
</tr>
<tr>
<td>All</td>
<td>18</td>
<td>0.51 (0.37 - 0.69)</td>
</tr>
<tr>
<td>Population-based</td>
<td>7</td>
<td>0.91 (0.63 - 1.32)</td>
</tr>
<tr>
<td>High-Risk</td>
<td>8</td>
<td>0.24 (0.20 - 0.29)</td>
</tr>
</tbody>
</table>

Adopted, modified from Weiss HA, Quigley MA, Hayes RJ.
* Pooled analysis based on unadjusted data.
+ Adjusted for age, sexual behaviour; and other confounding factors; N = number of studies included in analysis; CI = Confidence Interval; RR = Relative Risk.
during the first year of life, compared with 1 to 2 of 1000 circumcised male infants."

This estimate was challenged by Schoen et al (2000) in their special article arguing that the AAP's estimates to be misleading. Schoen et al (2000) stated that multiple studies\(^\text{11}\) comparing the prevalence of UTI in uncircumcised and circumcised male infants has shown a preponderance of UTI in uncircumcised infants. While a meta-analysis described a 12-fold increase for UTI\(^\text{14}\) the 1999 Task Force statement suggested the protective effect of circumcision is less (at about 3 to 7-fold), inappropriately citing among others, the works of Shaw et al.\(^\text{17}\) Herzog,\(^\text{18}\) and Fussell et al.\(^\text{19}\) In reality, the study by Shaw et al yielded an 8-fold increased risk, the Herzog investigation demonstrated a greater than 50-fold increased risk, and the Fussell report did not even address the issue. It seems likely that the prevalence of UTI is higher than reported because it will be under diagnosed unless urine cultures are routinely taken in evaluating febrile infants. Newman et al,\(^\text{20}\) reporting for the Pediatric Research in an Office Setting network, concluded that fewer than 50% of pediatricians performed urine culture in evaluating febrile infants of less than 3 months old, despite the high incidence of UTI (>10%) in these infants.

In a population-based study of 14,893 males born in 1996 in a closed-panel, nonprofit health maintenance organization with an effective tracking system, 2.6% of uncircumcised infants developed UTI within the first year of life, most before 6 months old, and were 11 times more likely to develop UTI and 18 times more likely to be hospitalized with UTI than were circumcised infants.\(^\text{21}\) The subsequent development of renal scarring indicates that UTI in infancy may not be benign.\(^\text{22}\) As stated in "Information for Parents,\(^\text{21}\) evidence indicates that in the first year of life uncircumcised infants have at least a 10-fold increased risk of UTI; a circumcised infant has approximately a 1 in 1000 chance of having UTI in the first year of life, whereas an uncircumcised infant has a 1 in 100 chance. In clinical terms, given that approximately 2 million boys are born each year in the United States, this 10-fold risk of UTI translates into 20,000 UTI annually in the United States if all newborn boys are uncircumcised but only 2000 UTI annually if all the boys are circumcised. Aim other words, newborn circumcision is greater than 90% effective for preventing UTI, a preventive health benefit equivalent to the protective rate of many vaccines given to children.\(^\text{23}\)

Despite this implication, however, the 10-fold relative risk for UTI in uncircumcised: circumcised is referred to as a "slightly lower risk."

How circumcision does affect the rate of UTI among neonates?

A study by Winberg et al (1974) and Wijesinha et al (1998) as cited by Alanis et al (2004)\(^\text{4}\) showed, "Uropathogenic bacteria colonize the prepuce rapidly just days after birth. Such organisms included Coli forms 73%, Enterococcus sp 9%, Proteus sp 8%, and Pseudomonas sp 4% and klebsiella sp 2%. It also showed that 52% of male infants harbored Uropathogenic organisms before doing circumcision compared with 0% after circumcision."

Assessing the association between circumcision and development of penile cancer in men and cervical cancer in women has been well researched and documented over the past 70 years. The association between the lack of circumcision and development of penile cancer in men and cervical cancer in women has been well researched and documented over the past 70 years.

In a study by Weiss et al as cited by Alanis et al, Figure 3 below demonstrated convincing evidence that male circumcision lowers the risk of HIV infection, especially among the high risk populations. A number of problems were identified regarding the validity of the findings: 1) studies were mainly cross-sectional studies with low power, 2) the presence or absence of confounding factors such as religious status and sexual behavioral practices, 3) A high heterogeneity between studies, and 4) the age of circumcision. Beaten et al (2005) in their study found that the overall probability of male HIV-1 infectivity (transmission) per sex act was 0.0083 and concluded that uncircumcised males were at a >2 fold increased risk of acquiring HIV-1 infection.\(^\text{12}\) Alanis et al\(^\text{4}\) reported an overall 2 to 8 fold increased risk of HIV infection among uncircumcised males compared to circumcised males and Moses et al (1998) in their study reported Risk Ratio from 7 different studies between 2.3 to 8.1 in association with lack of circumcision and risk for HIV infection.\(^\text{3, 9}\).
The association between the lack of circumcision and development of penile cancer in men and cervical cancer in women has been well researched and documented over the past 70 years. Global figures presented by Finau et al. showed that 1 in 100,000 uncircumcised males develop penile cancer compared to 1 in 400-900 circumcised males. Also the development of cervical cancer among partners of uncircumcised males is much higher than circumcised male. The main risk factors reported for penile cancer of males include Phimosis, chronic inflammatory conditions, smoking, and history of human papilloma virus (HPV), the risk of cervical cancer in women associated with lack of circumcision is mainly attributed to a history of HPV in their male partners and sexual behavior.

*Langimalie study results:* Of the 42 boys studied the age range from 7 to 20 years (median 14 years). There 35 Tongans, 5 other Pacificans and 1 each European and Arab. There were 40 dorsal slit circumcision and 2 formal amputations of the foreskin using resection. There were 9 (%) with Phimosis and paraphimosis and 29 (%) with substantial smegma present. The pre-circumcision medical check up yielded conditions not previously diagnosed. There were 5 (%) boys with anemia; 5 with marked proteinuria for follow up; 2 with positive hepatitis B antigen; and 14 (%) with negative hepatitis B antibody needing immunization.

The 42 parents were asked to list the reasons or demanding circumcision. Many listed more than one reason as follows: compliance with traditional practices; cultural and religious beliefs and expectations; personal hygiene, cleanliness and prevention of infection; and improve sexual performance.

Of the 42 boys asked, they gave one answer each

Table 4: The evaluation of 73 websites on circumcision. (Adopted from Okino and Yamamoto)

<table>
<thead>
<tr>
<th>Statement</th>
<th>No Discussion</th>
<th>Agrees with Statement</th>
<th>Agrees with statement under limited circumstances</th>
<th>Disagrees with statement</th>
<th>Disagrees with statement under limited circumstances</th>
<th>Both sides discussed, but don't agree or disagree</th>
<th>Superficial discussion with no agreement or disagreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circumcision recommended</td>
<td>0</td>
<td>10</td>
<td>4</td>
<td>37</td>
<td>4</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>Circumcision recommended by AAP</td>
<td>40</td>
<td>0</td>
<td>3</td>
<td>26</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Circumcision reduces risk of UTI</td>
<td>32</td>
<td>13</td>
<td>3</td>
<td>16</td>
<td>0</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Circumcision reduces risk of Penile cancer</td>
<td>35</td>
<td>15</td>
<td>1</td>
<td>14</td>
<td>0</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Circumcision reduces risk of STI</td>
<td>36</td>
<td>8</td>
<td>2</td>
<td>16</td>
<td>1</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Circumcision adversely affects sex act</td>
<td>47</td>
<td>13</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Circumcision decreases sensuality of intercourse</td>
<td>39</td>
<td>21</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Circumcision Violates Child's rights</td>
<td>53</td>
<td>14</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Circumcision as a religious ritual is permissible</td>
<td>40</td>
<td>14</td>
<td>1</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
</tbody>
</table>
as follows: wanted to be like father (16); shame (12); wanted to be like others boys and not be teased (6); hygiene, cleanliness and prevent infection (4); and two each for health and tradition.

Only 19 of the boys needed local anaesthetic and needed suturing for homeostasis. These included the 2 boys with formal amputation of the foreskin. Five non-anaesthetized boys complained of were given local anaesthetic for the procedure. On the removal of dressing on the third day 12 were given oral antibiotic because of a diagnosis of infected circumcision wound. These included the 2 boys with the formal amputations of the foreskin. When the boys were followed up at one month both the parents and the boys all expressed satisfactions with their healed circumcisions. The comments were that 33 parents would recommend this provider’s circumcision to others; 5 were actually proud of their sons and 3 were very happy. At 6 month follow up there were no complications or shortcomings. The boys were then discharged from circumcision follow up but some continued to be followed up for the conditions identified during the pre-circumcision medical examinations.

Discussions and Conclusions
The experiences of the largely Tongan boys and parents in Auckland are consistent with those of the Pacific families studied in Christchurch.

Circumcision of neonates and young boys, is a frequently performed elective surgical procedure, and is one of the oldest known surgical procedures. When properly performed circumcision prevents phimosis, paraphimosis, and balanoposthitis and has been shown to decrease the incidence of penile and cervical cancer in women. It may also result in a decreased incidence of urinary tract infection, sexually transmitted infections and HIV infection. Conclusions regarding the relationship of urinary tract infection, STI and HIV infection to circumcision are tentative and conflicting especially the relationship between STI and HIV infections due mainly to the absences of well planned prospective studies or randomized clinical trials as the gold standard. Also there are no studies or reviews which look at the relationships between age of circumcision and risks of contracting STI/HIV and sexual practices should be assessed more vigorously.

Circumcision also has its own inherent risks. The risk are mainly associated with the procedure (pain, bleeding, inflammation) also included post operative infection, poor healing, excess foreskin removed leading to minor or major loss of sensation, accidental cutting of the gland penis and cross infection if performed with unsterile instruments especially during ritual circumcision.

Christakis et al concluded that “a complication can be expected in 1 out every 476 circumcisions. Six urinary tract infections can be prevented for every complication endured and almost 2 complications can be expected for every case of penile cancer prevented.” To make an informed choice, parents should be given accurate and unbiased information and be provided the opportunity to discuss this decision. An interesting survey of Internet Websites on circumcision conducted by Okino and Yamamoto showed 51% of web sites were against circumcision, 14% recommended circumcision and 25% had no opinion (see Table 4). They also noted a lack of agreement between websites regarding statements describing advantages and disadvantages of circumcision. Hero the decision to circumcise or not solely rests on the parents.

Is it worth doing? The answer to such a question relies heavily upon cultural and religious practices, and the decision when to circumcise depends on personal benefits and choices.

Reference


7. Fineau, SA health information in the Pacific


15. Finau SA, Takau A, Finau E, Foliaki A. Boy's Circumcision: Tradition at the Cutting Edge; A Micro-Soft power point presentation at Pasifika Medical Association Annual Conference, Auckland New Zealand: 1989


"What matters is working with a few close friends, people you respect, knowing that if times did turn bad these people would hold together."

(Richard Branson, 1950)