

CIRCUMCISION:

TECHNIQUES
RESULTS
COMPLICATIONS



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RESULTS
COMPLICATIONS



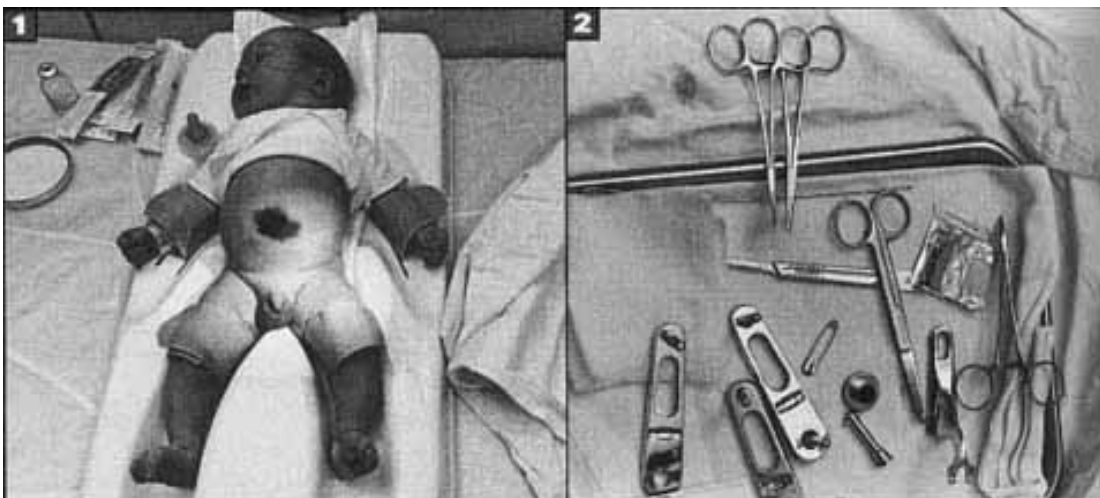
CIRCUMSTRAINT BOARD



A molded plastic board with Velcro straps called a Circumstraint board is used to restrain the baby.



Baby in four-point restraints on Circumstraint board.



Baby on Circumstraint board; and instruments used for Gomco procedure: hemostats, scissors, scalpel, safety pin, clamp parts.

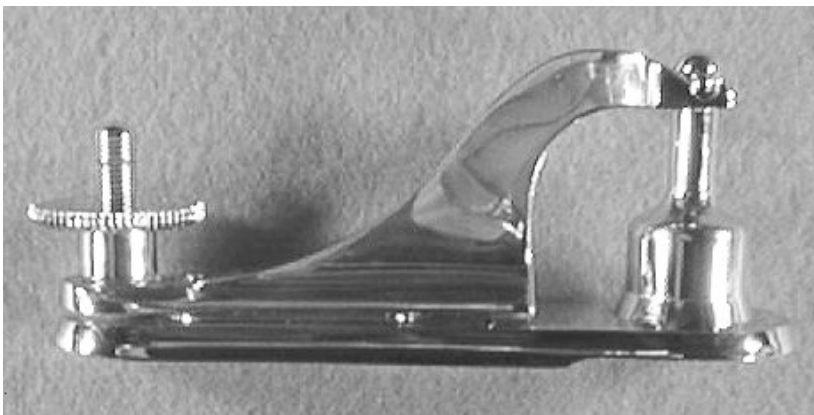
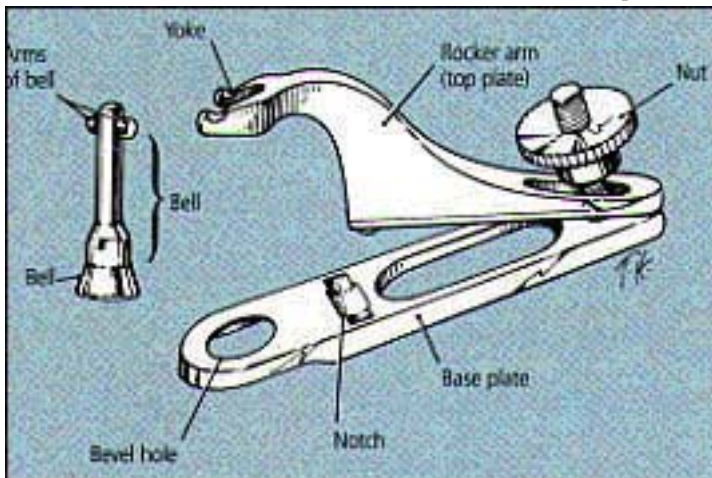
MOST COMMON METHODS:

1. Plastibell device



Ring base with detachable handle, surgical cord.

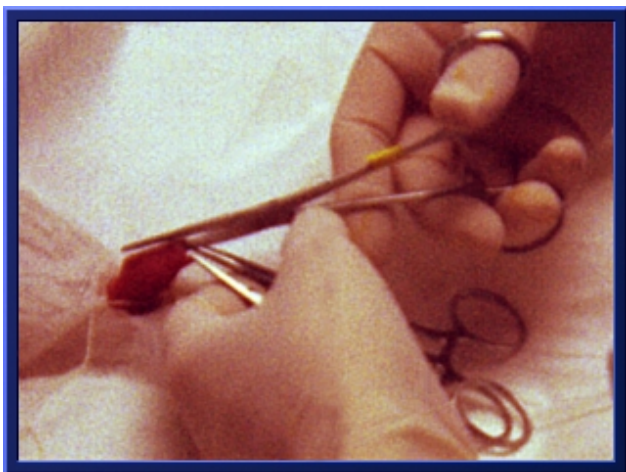
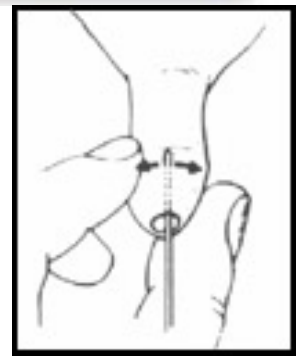
2. Gomco clamp



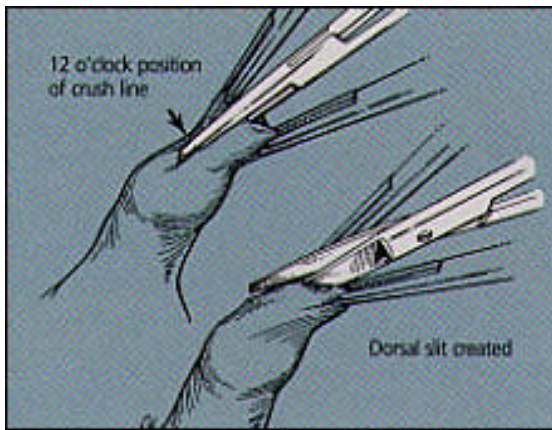
Preliminary procedural steps common to both Gomco and Plastibell methods:



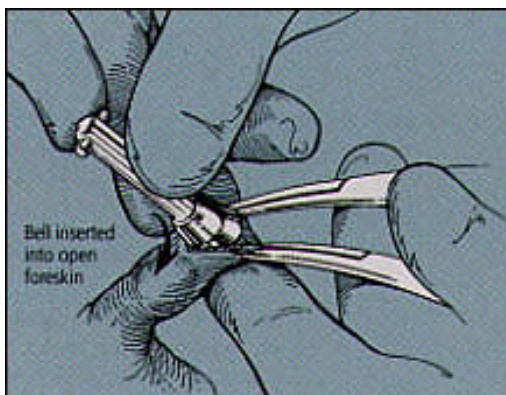
1. The foreskin is normally fused to the head of the penis (glans), and has a small, tight opening. It must first be forcibly dilated and separated circumferentially from the glans with a blunt probe or hemostat. The opening of the foreskin is held at its sides with locked hemostats.



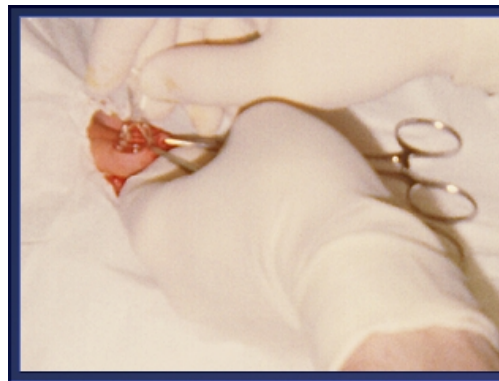
2. Crushing of the midline of the top (dorsal) side of the foreskin with a hemostat: this crushes blood vessels to reduce bleeding from subsequent dorsal slit. Crush should be held for 1 minute.



3. Slit along crush line to open foreskin enough to allow for subsequent insertion of bell of chosen device.



Insertion of Gomco bell



Insertion of Plastibell

4. Insertion of bell device into slit-open foreskin. Bell fits over tip of glans.

SEE REMAINING STEPS SPECIFIC TO GOMCO VS. PLASTIBELL PROCEDURES ON THE FOLLOWING PAGES...

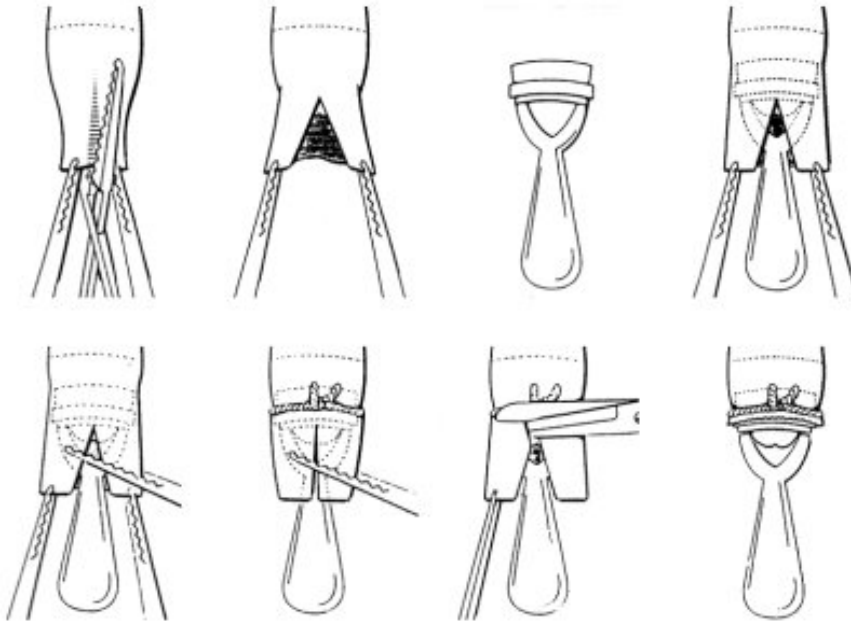
PLASTIBELL PROCEDURE

1.

2.

3.

4.



5.

6.

7.

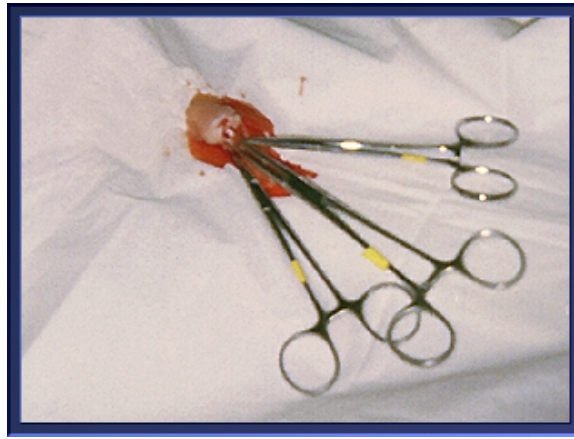
8.

1. After separation of foreskin from glans with blunt probe, dorsal foreskin crushed to reduce bleeding on slit line.
2. Dorsal slit along crush line to allow for insertion of bell.
3. Plastibell device: ring plus detachable handle.
4. Bell placed inside foreskin over tip of glans.
5. Device and foreskin held in place with locked hemostat.
6. Cord tied tightly around base of foreskin in flange of ring.
7. Foreskin cut off just beyond cord.
8. Procedure complete: handle will be snapped off, leaving bell in place.

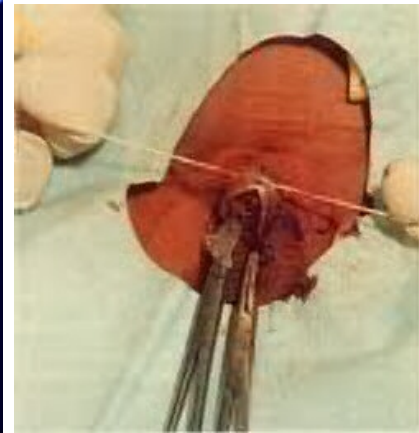
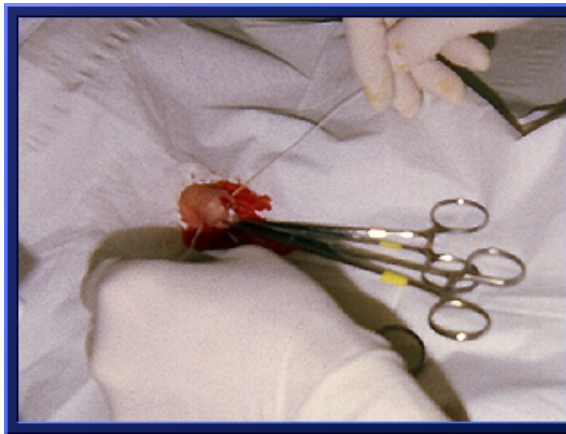
Bell placed inside foreskin over tip of glans.



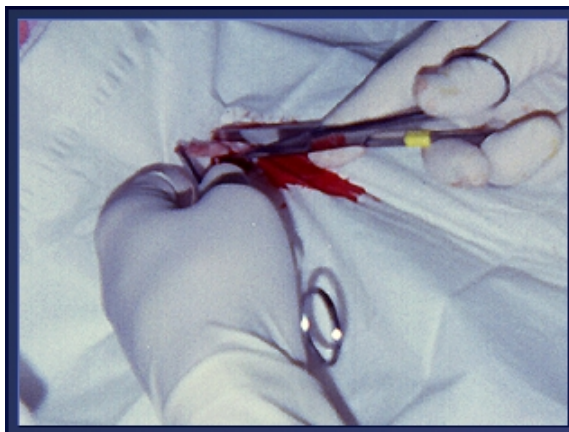
Foreskin has been pulled up over Plastibell device. Device and foreskin held in place with locked hemostat.



Cord tied tightly around base of foreskin in flange of ring.



Foreskin cut off just forward of tied cord.



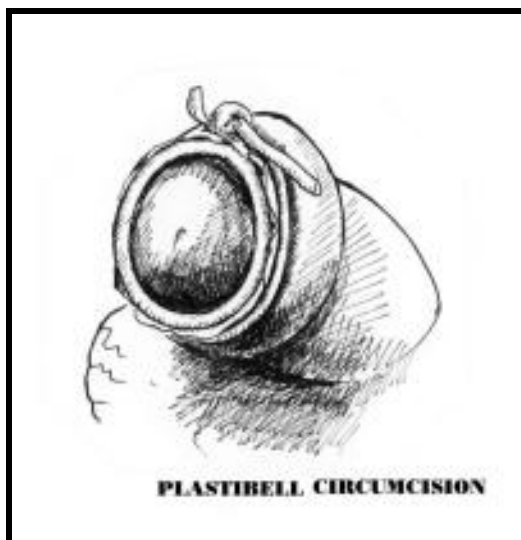
PLASTIBELL RESULTS



BEFORE

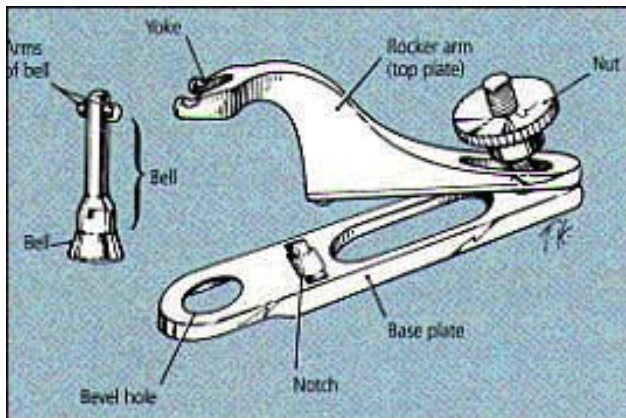


AFTER



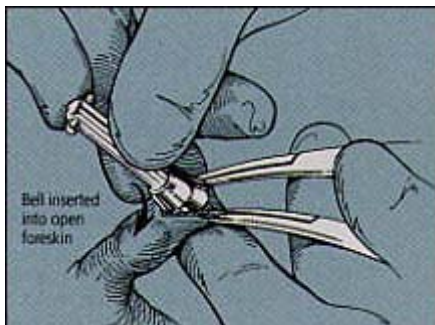
The remnant of foreskin tied off beyond the ring dies from lack of circulation. It dries up and falls off, with the ring, within 5-10 days.

GOMCO CLAMP

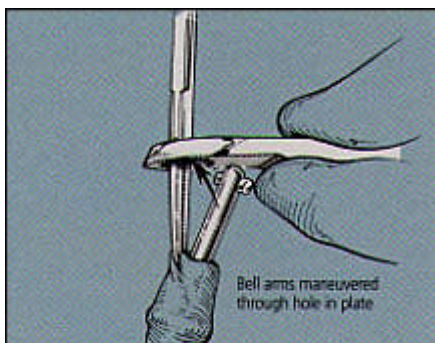


Gomco clamp parts

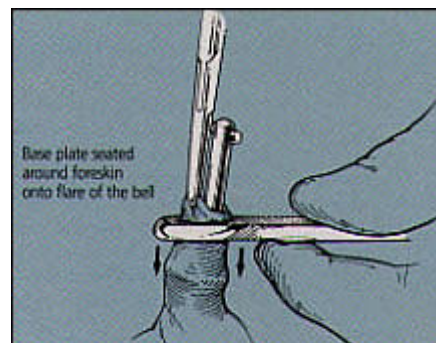
After the dorsal slit...



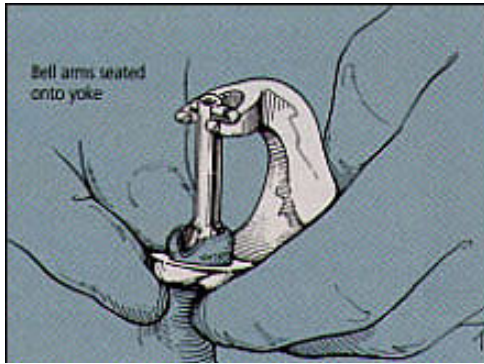
Insertion of the bell over the glans.
Note safety pin holding sides of slit foreskin in place.



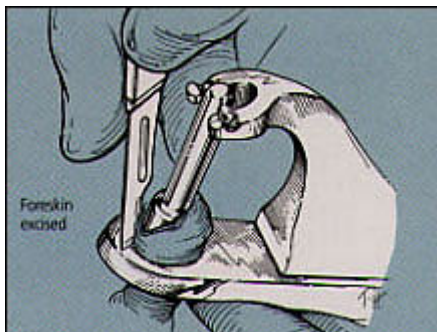
Grasping the edges of the dorsal slit and inserting the arms of the bell through the hole of the plate.



Pulling the foreskin upward and adjusting the bell and base plate.



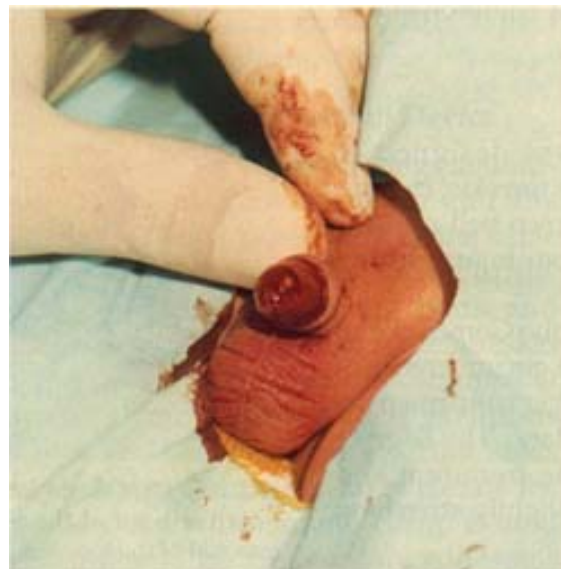
Final assembly of device: nut tightened to elevate bell against base plate, crushing foreskin to reduce risk of later bleeding on final excision line. Foreskin must stay in crush position 5 minutes.



Excising the foreskin against the bell with a scalpel.



Removal of bell: foreskin sticks to bell along circumferential crush line.



Gomco procedure complete.

GOMCO PROCEDURE: BEFORE AND AFTER

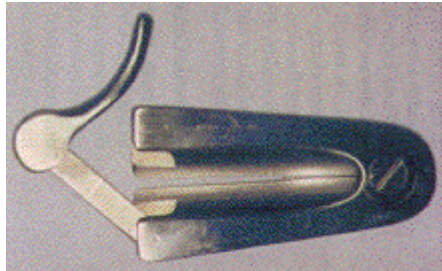


Circumcised penis wrapped in petroleum gauze dressing
Courtesy of David G Weismiller, MD.

A gauze bandage with Vaseline is often used after the Gomco procedure. Its purposes are:

1. To help keep blood clots in place to reduce risk of excessive bleeding after the procedure.
2. To keep the raw glans from rubbing on the diaper.
3. To keep the raw glans from sticking to the diaper.
3. To reduce stinging from exposure of wound to urine.

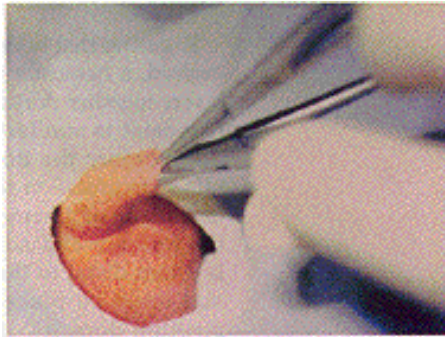
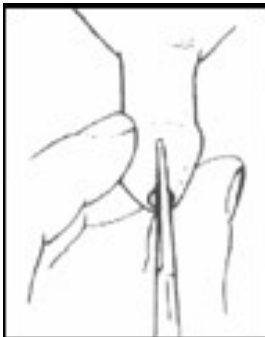
MOGEN CLAMP



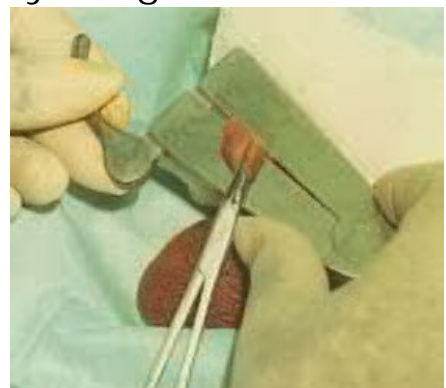
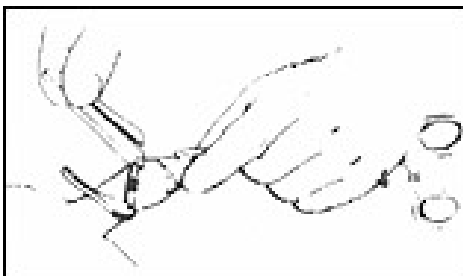
Modern and traditional styles of Mogen clamps.



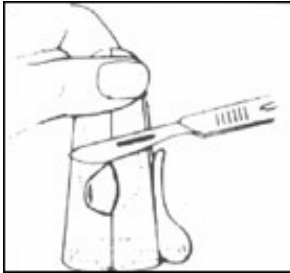
Probe used to forcibly separate foreskin from glans.



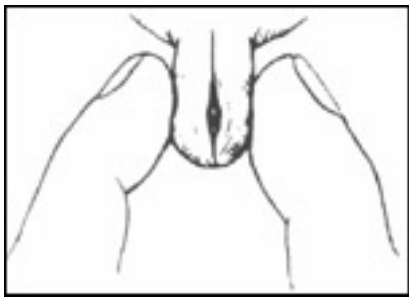
Hemostat applied to pull foreskin forward beyond glans.



Clamp applied to foreskin: perpendicular vs. horizontal placement.



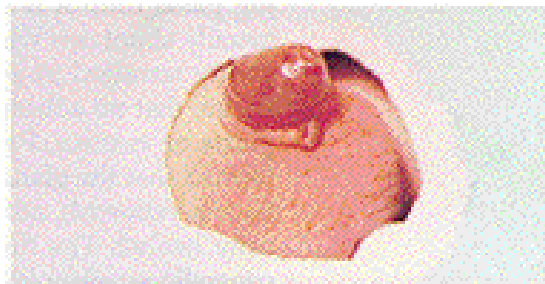
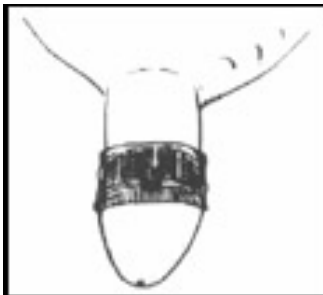
Foreskin cut off beyond Mogen clamp with scalpel.



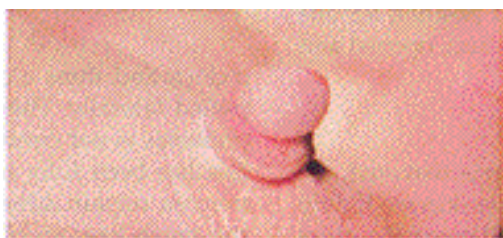
6 The clamp is then removed.



Glans enclosed in remaining penile skin, behind sealed crush line. Traction is applied to split crush line and liberate glans.



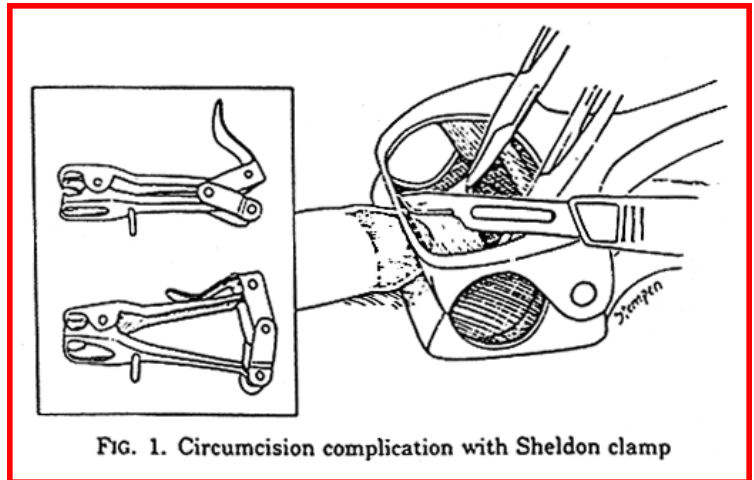
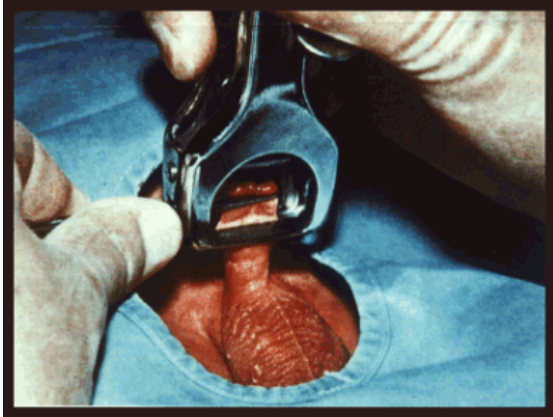
AFTER: Immediately after Mogen procedure.



AFTER: Same penis 10 days after Mogen procedure.

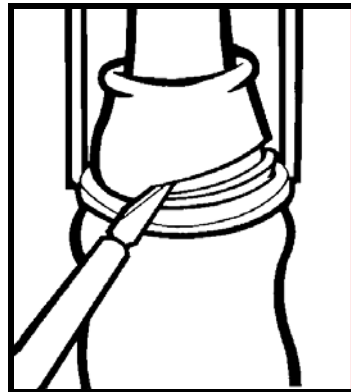
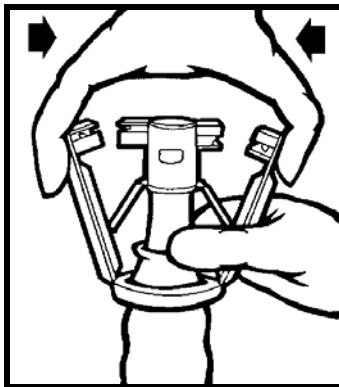
OTHER DEVICES

SHELDON CLAMP

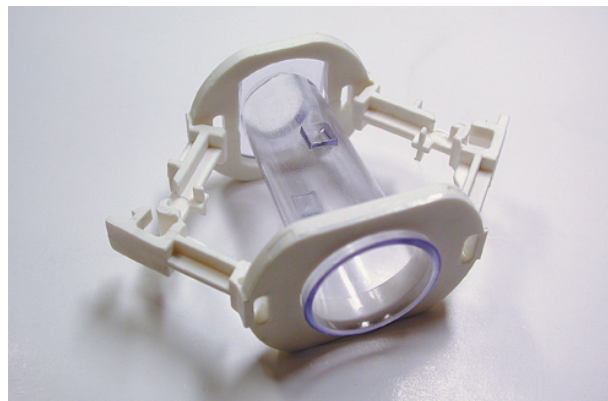


SPECIFIC RISK OF SHELDON CLAMP:
Note tip of penis caught in clamp.

TARA KLAMP



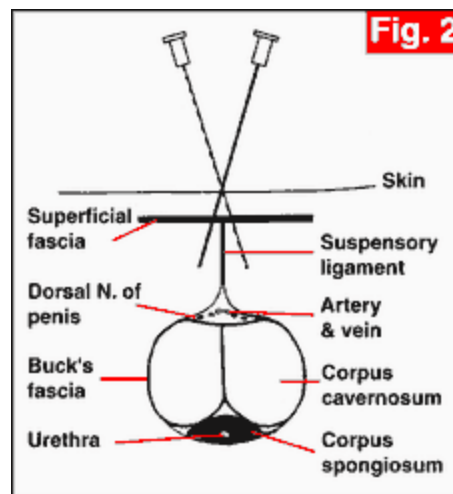
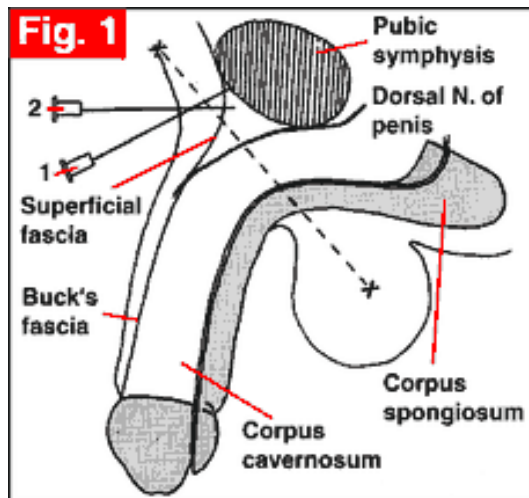
SMART KLAMP



ANESTHESIA

- Since 1999, the American Academy of Pediatrics has recommended the use of anesthesia during and after circumcision.
- Despite this recommendation, not all practitioners use anesthesia.
- Anesthesia may reduce but is not guaranteed to eliminate the pain of circumcision.

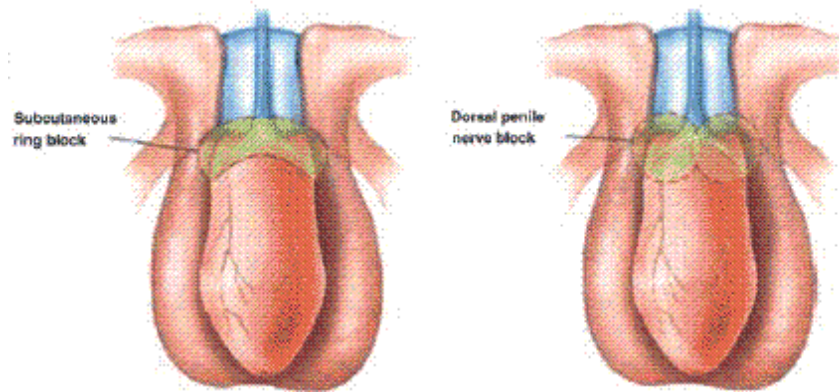
Dorsal Penile Nerve Block (DPNB)



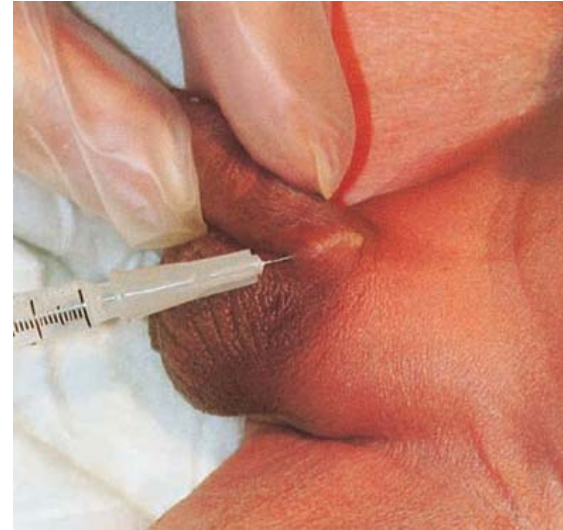
Dorsal penile nerve block Courtesy of David G Weismiller, MD.

DPNB: Two injections under superficial fascia on either side of base of penis.

Subcutaneous Ring Block (SCRB)



SCRB vs DPNB



SCRB: Multiple shallow injections

RISKS OF LOCAL ANESTHESIA:

Dorsal penile nerve block can miss the nerves to the frenulum.

An adequate amount of time must be left between the anesthetic injection and the start of the operation - normally 10-15 minutes - otherwise the anesthetic will not have time to work.

Anesthetics containing adrenaline should never be used because they cause arterial vasoconstriction, which may lead to ischemia [lack of blood] or necrosis [tissue death] of the penis.

A few cases of ischemia have been described following dorsal penile block and this has been attributed either to using larger volumes of anesthetic, or local hematoma [pocket of bleeding in the tissues] formation causing compression of the dorsal penile artery.

Permanent numbness following the block is an uncommon complication and has been attributed to damage to the dorsal nerve of the penis.

Source: World Federation of Societies of Anaesthesiologists, 2004

RISKS SPECIFIC TO PLASTIBELL PROCEDURE:

Elevated risk of infection (5X Gomco rate), due to presence of foreign body



Bliss Jr DP, Healey PJ, Waldhausen JHT. Necrotizing fasciitis after Plastibell circumcision. J Pediatr 1997;31:459-62.

Gee WF, Ansell JS: Neonatal circumcision: A ten-year overview: With comparison of the Gomco clamp and the Plastibell device. Pediatrics 1976; 58:824-827.

Woodside JR. Necrotizing fasciitis after neonatal circumcision. Am J Dis Child 1980;134(3):301-2.

Ring may slip onto shaft, causing strangulation of penis



Al-Samarrai AYI et al. A review of Plastibell device in neonatal circumcision in 2000 instances. Surg Gynaecol Obstet 1988;167:341-3.

Datta NS, Zinner NR. Complication from Plastibell circumcision ring. Urology 1977;9(1):57-8.

Urinary obstruction due to compression from ring (Marks on X-ray show size of dilated bladder)



Al-Samarrai AYI et al. A review of Plastibell device in neonatal circumcision in 2000 instances. Surg Gynaecol Obstet 1988;167:341-3.

Lee LD, Millar AJW. Ruptured bladder following circumcision using Plastibell device. Br J Urol 1990; 65: 216-17.

Ly L, Sankaran K. Acute venous stasis and swelling of the lower abdomen and extremities in an infant after circumcision. CMAJ 2003; 169(3): 216-217.

Mihssin N, Moorthy K, Houghton PWJ. Retention of urine: an unusual complication of the Plastibell device. BJU International 1999;84:745.

RISKS SPECIFIC TO GOMCO CLAMP PROCEDURE

Excessive bleeding: May be related to inadequate crush time in clamp, or incorrect fit of clamp parts. May be early or delayed, if crushed arteries open up later.



Gomco more likely than other methods to remove too much skin from the shaft of the penis.

RISKS SPECIFIC TO MOGEN CLAMP PROCEDURE:

Increased risk of accidentally cutting off part of the glans, from entrapment in slit of device.

GENERAL CIRCUMCISION RISKS:

1. Pain (100%)
2. Infection (up to 10%)
3. Excessive bleeding
4. Too little skin removed
5. Too much skin removed (denuding shaft of penis)
6. Damage to glans, shaft, urethra, scrotum

DELAYED COMPLICATIONS:

1. Too little skin removed causes: adhesions; skin bridges (at least 25% have adhesions)
2. Too much skin removed causes: tight, painful erections; hairy scrotal skin pulled onto shaft; bending of penis
3. Buried penis
4. Iatrogenic phimosis
5. Need for repeat surgery (1/100)
6. Meatitis, meatal ulceration, and meatal stenosis (9-10%)
7. Poor cosmetic result
8. Psychological harm
9. Loss of sexual sensitivity and comfort

RARE COMPLICATIONS:

1. Partial or complete loss of the glans or penis.
2. Death (estimated 2-3/year in U.S.??)

GALLERY OF CIRCUMCISION COMPLICATIONS



Buried Penis



Untidy cosmetic result



Partial amputation of glans



Scarred glans (also coronal adhesions)



Iatrogenic phimosis



Necrosis of penis



Adhesion



Adhesion



Adhesion



Surgical release of adhesions



Skin bridges



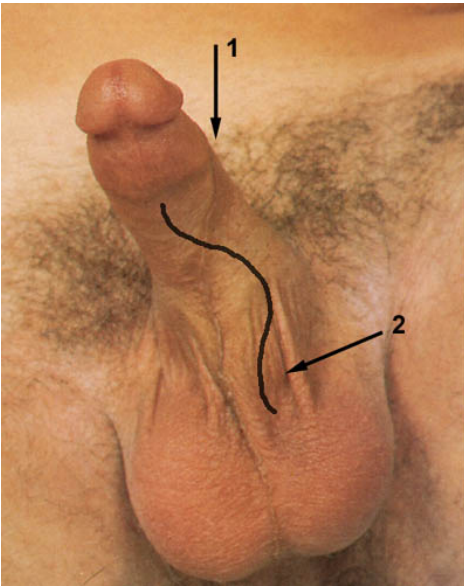
Skin bridge



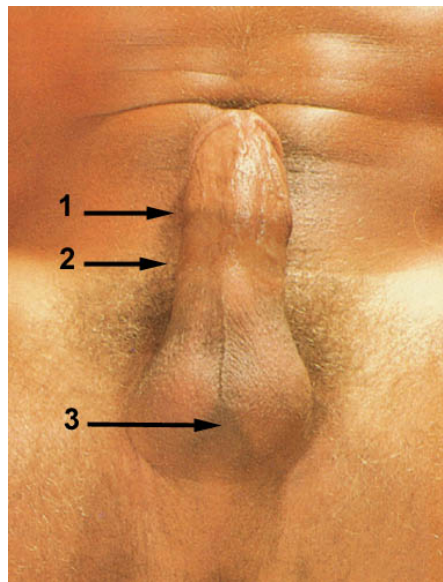
Excessive shaft skin removed



Excessive shaft skin removed



Excessive skin removed with curvature of shaft on erection.



Excessive skin removed producing tight erection and tight scrotal skin on erection. (Remaining shaft skin is between arrows # 1 and #2.)



Hairy penile shaft: Excessive skin removed, with scrotal and pubic hair pulled onto shaft with erection.



Meatal stenosis
(closure of urinary opening)



Narrow stream meatal stenosis
(See needle-fine flow of urine toward upper right of photo; also note ventral adhesions and lack of shaft skin.)



Keratinization of glans and inner foreskin remnant

"I am 24 years old and lost my entire glans penis, the head of my dick, in a botched circumcision. Basically I have a shaft but there's no head at the end. Unfortunately, I was left with my balls so I still have a sex drive, but it's nearly impossible for me to climax. When I was much younger, around 14 to 16, I could sometimes masturbate to a climax, but after a couple of years I stopped being able to do this. Some of the women I've been with never saw the condition of my penis, and failed to notice when I didn't come. Others have seen my condition before intercourse and refused to have sex with me, while still others found out afterward, after I wasn't able to come, and then never wanted to have sex with me again. Of course I never dare to ask anyone to suck me, although this might provide the necessary extra stimulation and actually help me climax. Any help would be appreciated. I'm very miserable, frustrated, and lonely."

-Anonymous letter to Dan Savage, sex columnist, October 2004