# Inflatable penile prosthesis

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Website Atlas of Surgery and Surgical Devices

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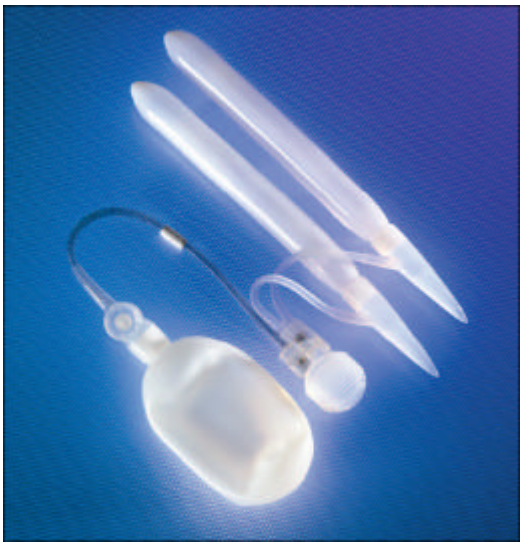
The inflatable penile prosthesis was first used in 1976 and has become the gold standard treatment for those patients suffering from erectile dysfunction and in whom all other suitable treatments have been tried. The use is increasing as a result of the erectile complications of radical prostatectomies. In correctly counselled and suitable patients satisfaction is high, approx 85%. However, there is a complication rate, like all surgical procedures where synthetic materials are implanted. Complications include infection (2-5%), mechanical failure, autoinflation, floppy glans (concorde deformity), discomfort / dissatisfaction.

There are 2 manufacturers (UK and most other countries), AMS and Coloplast (formerly Mentor). Representatives from these companies will show you the finer points of each of the currently available models, they often offer in theatre advice.

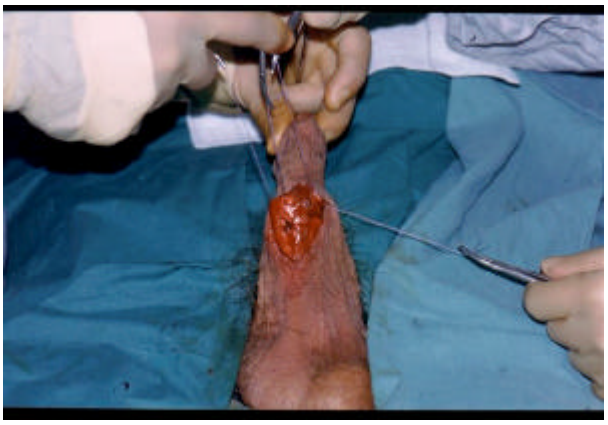


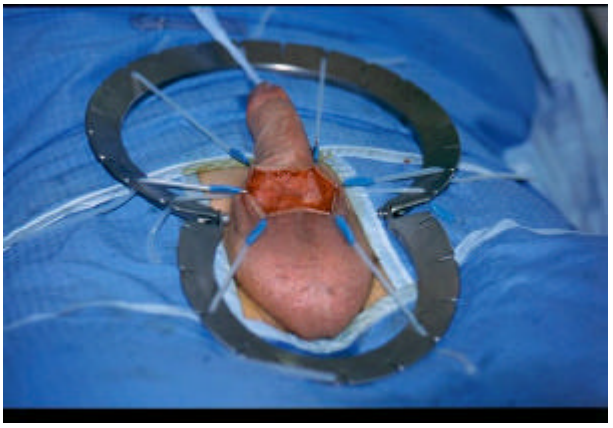
**Technique**

1. Pre op shower. Naseptin nasal cream 2 hours pre op. If there is any active infection postpone operation. Antibiotic prophylaxis is mandatory. The regimen I use is Co-amoxiclav 6 hrs pre-op continued for 2 weeks post-op. (No clear consensus on regimen or length as long as one is used)

2. Consent. General anaesthetic. Supine legs slightly abducted. Complete genital shave. 16Fr urethral catheter spigoted.

3. Peno-scrotal incision. Divide layers until good view of surface of corpora cavernosa. Use Scott, Wilson, Lone-Starr or similar ring retractors (Non-disposable ones better as they are heavier and do not move around as much)

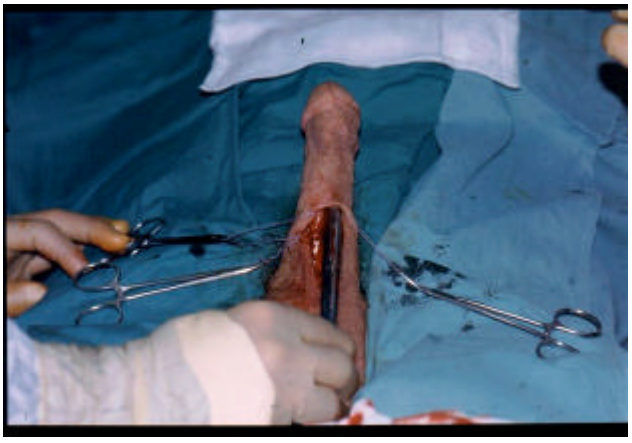




4. Insert 3 pairs of 2/0 Vicryl stay sutures as proximally as possible into each of the corpora.

5. Perform corporotomies using spatula diathermy.

6. Using Hagaar urethral dilators (our preference, but similar dilators can be used) dilate up to a suitable size (depending on selected device) both proximally and distally on each side.

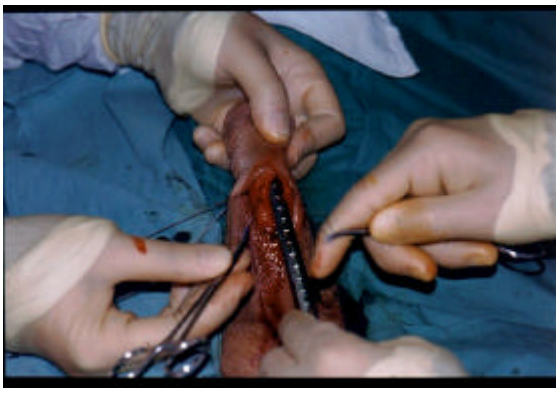


If the corpora are too fibrotic to dilate (post priapism or Peyronies disease) cavernotomes can be used but extreme care must be taken not to perforate the septum, glans or even urethra. Our personal preference is to avoid these tools, but to dilate as far as possible, them insert the thinnest available prosthesis- either

inflatable or malleable. If this proves clinically unsatisfactory, we perform an exchange prosthesis procedure at a later date.

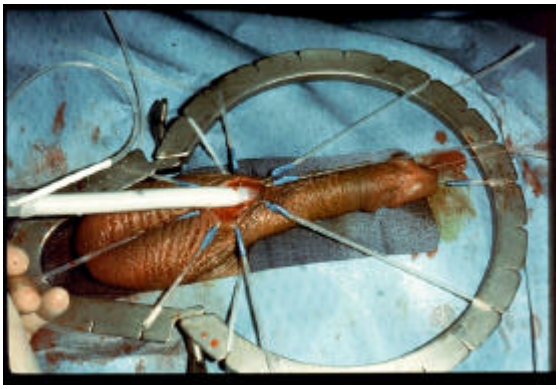
7. Ensure no crossover of corpora by inserting dilators simultaneously into both sides. (Crossover can be hard to detect).

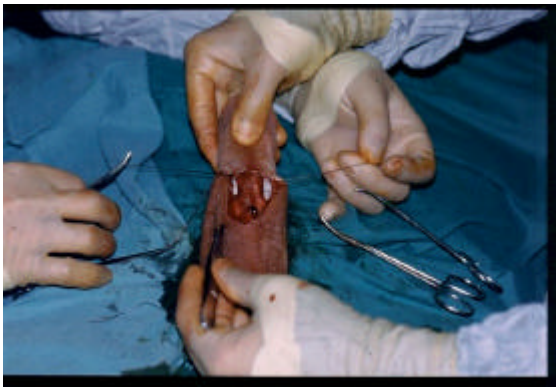
8. Measure distance proximal and distal. Distance should be the same +/- 0.5cm. These distances are important for the sizing. (See manufacture's literature as to how they recommend the size you use).



9. Prepare cylinders (and pump if a 'preconnnect device' is being used). See product literature but essentially normal saline has to be cycled through the system until all appreciable quantities of air are removed. See Appendix 1.

10. Using a Thurlow instrument (or similar needle introducer) insert cylinders. Close corporotomies over cylinders using the stay sutures. Do not insert any further sutures as the needle may damage the prosthesis.





11. Insert prepared pump into midline posterior/inferior of scrotum. Carefully tack fascia over pump to hold in position until capsule forms.

12. The final component is the reservoir. Prepare first to expel all air. The aim is to insert this extraperitoneally to the left or right of the bladder. Insertion can be open or blind. If the patient has had any previous surgery, or difficulty is encountered, the open procedure is safer and worth the few minutes longer. For both ensure bladder is completely empty (remember the catheter has been spigoted for some time now!).

13. a) Open procedure; make grid-iron muscle splitting type incision 4-5cm long approx 1cm above and 2cm lateral to pubic tubercle. Make space with finger. Insert empty reservoir again after preparation into space and inflate to capacity. Press on abdomen to simulate raised intra-abdominal pressure to ensure no significant emptying (as this would cause autoinflation). Both manufacturers now have a lock out valve that limits this problem, although not completely. The pipe can then be tunnelled with a large haemostatic clip to the scrotum.
b) Another option is blind insertion, which involves blindly tunnelling from the scrotum to the pubic tubercle and then creating a space as above. It is trickier but in suitable patients and in experienced hands it is quicker.

14. Our personal preference is to leave all components empty of fluid until this point and then fill the system to the required volume. We fill to less than the reservoir volume as we consider this reduces the complication rate. Join reservoir pipe to pump pipe. Test system. Leave partially inflated for 12 hours to reduce bleeding.

15. Close all wounds carefully, remembering to avoid the prosthesis! Absolute haemostasis is vital. Small vacuum drain to penoscrotal wound. NO local anaesthetic as the needle may damage components. Elevate penis with padding onto abdominal wall.

16. 12 hours later, deflate penis. As this is the most painful part of the whole procedure, we recommend strong pain relief beforehand. Leave deflated for 4-6 weeks (this is very important so that a pseudo capsule will form around the full reservoir). See and teach patient how to use system personally.

**Appendix 1**

When dealing with the pipes ensure the following
- no ingress of debris, by flushing ends first
- all clips must have shods to avoid damage
- double clip all pipes
- the manufactures provide an ‘accessory kit’ with the correct size blunt needles, shods and connectors.

**Acknowledgements for photos**
Coloplast for Titan inflatable prosthesis with resist coating.
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This web resource should be use as an *aide memoire* and is not a substitute for formal training in this advanced procedure.