PEYRONIE’S DISEASE WITHOUT IMPOTENCE  
Exposure and Mobilization of Dorsal Nerves and Vessels

**FIG. 25-1.** Most surgeons use a degloving procedure via a circumferential skin incision around the base of the glans penis for exposure. Although this technique is a convenient way to dissect the penile skin, some patients complain of decreased sensation after surgery despite the preservation of the dorsal nerves.

**FIG. 25-2.** An alternative is to use a vertical incision, which parallels the plaque from the base of the glans penis to the base of the penis, and to dissect only the skin sufficient for exposure of the nerves and plaque.

The dissection and mobilization of the dorsal nerves and vessels are much easier if the penis is erect. The tension of the corporeal bodies provides strong backing for a clear margin of dissection.

An artificial erection is induced either by a constant saline solution infusion into the corpora cavernosa or a prostaglandin E1 injection (20 µg).

**FIG. 25-3.** The dorsal nerves are visible with the naked eye. The surgeon injects saline solution between the nerves and the erect corporeal bodies to facilitate the sharp dissection to separate the nerves from the adjacent tissues.

The surgeon uses a pair of tenotomy scissors and begins the dissection laterally, working from each side and connecting in the midline.
FIG. 25-4. The dorsal nerves can be retracted cephalad with a small Penrose drain while the surgeon continues the dissection distally and proximally.

FIG. 25-5. Often, after the dorsal nerves and tissues have been mobilized from the penile shaft, the plaque seems smaller than expected. By visual inspection and finger palpation of the erect penis, the surgeon can define the boundary of this fibrotic process.

FIG. 25-6. The surgeon’s strategy is to perform the minimal amount of manipulation necessary to correct the fibrotic curvature. Although most patients require more intervention, there are times when a Nesbit plication stitch or a small incision with or without a graft replacement is sufficient to correct the problem.1

FIG. 25-7. In other patients in whom there is severe curvature with involvement of the midline septum, the surgeon must excise the plaque.
Primary Excision
A tightened tourniquet around the base of the penis will prevent excessive venous back-bleeding once the corporeal incision is made. Dabbing the corporeal sinuses with a sponge soaked in an epinephrine solution (1:100,000 dilution) will aid in maintaining a clear operative field.

With the combined use of a knife and tenotomy scissors, the surgeon first incises the lateral border of the plaque on one side. With Allis clamps placed on the cut edge of the plaque, the surgeon can then free the sinus tissue from the plaque.

Fig. 25-8. When there is severe septal scarring, it is critical that the surgeon avoid any injury to the cavernosal arteries. By “hugging” the diseased tunica side with the scalpel during dissection, the surgeon shaves the sinus tissue off and preserves the maximal amount of the corporeal sinus tissue as well as the cavernosal artery.

If these two arteries are injured, the patient will be rendered impotent.

Fig. 25-9. Many variations of a Z-plasty reconstruction can be used to facilitate primary closure. A continuous stitch (3-0 or 4-0 PDS) is a watertight closure, and an interrupted stitch (2-0 PDS) at 2 cm intervals provides strength² (A).

At the completion of the primary corporeal closure, the girth of the penis is decreased. However, after replacing the bulk of the dorsal nerves and vessels and after reapproximating the penile skin, the narrowed girth will not be obvious. The functional result after surgery is quite satisfactory for most patients (B).

Fig. 25-10. If the plaque is superficial, in some cases a simple incision with graft replacement is sufficient to straighten the penis.³
Excision with Graft Replacement

FIG. 25-11. If plaque excision leaves a large gap or even if an incision of the Peyronie’s plaque results in a prominent gap, the surgeon has the option of using organic or inorganic graft substitutes:

*Organic grafts, cadaveric dura*¹,³,⁹

1. Tunica albuginea
2. Dermis
3. Venous endothelium

*Inorganic grafts*

1. Dacron
2. Gore-Tex

The graft should first be approximated to one side of the penile defect and then the redundant area of the graft should be excised to create a good fit. Large grafts with redundancy can lead to aneurysm and impotence.

After completion of the graft interposition, the surgeon should infuse saline solution into the corporeal bodies to check for anastomotic suture line leakages. The dorsal nerves and vessels are replaced and the skin is reapproximated.

Placement of a Foley catheter (14 Fr) into the bladder avoids the discomfort of urinary difficulty. An ice pack over the penis and scrotum prevents excessive edema.

Terbutaline (5 mg) every 6 hours postoperatively prevents spontaneous nocturnal penile erection.

PEYRONIE’S DISEASE WITH IMPOTENCE
Placement of Semirigid Prosthesis

Each corpus cavernosum should be dilated with Hegar size 7 to 13 dilators.

While dilating the corporeal bodies, the surgeon may take this opportunity to not only create an open channel within each side but also disrupt the dense plaque on the tunica surface by a “cracking” manipulation.¹⁰

After placement of the correct semirigid prosthesis, the curvature is corrected in the majority of patients.

An additional plication stitch on the opposite side and/or an incision across the Peyronie’s plaque may be necessary to eliminate the residual curvatures.¹¹

Placement of Inflatable Penile Prosthesis

We prefer to use nonexpandable cylinders such as the CX model by American Medical Systems in cases of Peyronie’s disease. Expandable cylinders conform to and even exaggerate the curvature.

After the cylinders are placed in the corpora cavernosa, the surgeon inflates the cylinders and inspects to see if the curvature is persistent. If it is, then electrocautery is used to incise across the Peyronie’s plaque and expose part of the cylinder within.

FIG. 25-12. Incisions of 1 to 1.5 cm across the plaque are usually sufficient to correct the curvature¹¹,¹² (A).

An alternative is to excise the plaque and replace the gap with a graft. Both organic and inorganic grafts are used, such as Gore-Tex, Dacron, Dexon mesh, tunica albuginea, cadaveric dura, and saphenous vein¹,³,⁹ (B).
KEY POINTS

PEYRONIE'S DISEASE WITHOUT IMPOTENCE
- Exposure is gained via a circumferential or vertical incision.
- An artificial erection is induced.
- Saline solution is injected to separate the dorsal nerves from the corporeal bodies.
- The boundary of the plaque is identified and excised with maximal sinus preservation and preservation of the cavernosal artery.
- In cases of severe midline septal plaque formation, the surgeon must preserve the cavernosal artery within each corporeal body to preserve potency.
- Z-plasty closure of the residual corpus cavernosum is performed.
- If the excision or incision results in a defect that is too large for primary closure, a synthetic or organic graft should be used to cover it.
- Terbutaline is administered to prevent nocturnal erection and a Foley catheter is inserted to prevent urinary retention.
- An ice pack applied to the groin area reduces edema.

PEYRONIE'S DISEASE WITH IMPOTENCE
- Dilatation of the corporeal bodies with Hegar size 7 to 13 dilators with manipulation and “cracking” of the plaque is performed.
- The cylinders are placed. For a semirigid prosthesis, it may be necessary to take an additional plication stitch and/or incise across the plaque. For an inflatable prosthesis, we prefer the nonexpandable type of cylinders.
- If excision is necessary to remove dense fibrotic tissue, the gap may need to be replaced with either an inorganic or organic graft.
POSSIBLE CONSIDERATIONS

- The plaque is much larger than expected: Consider plaque incision with a patch graft.
- Tear or division of some dorsal nerves: Continue the procedure and preserve the rest of the dorsal nerves as much as possible.
- Plaque is higher than expected: Divide plaque at the penis base.
- Injury of corporeal cavernosal arteries on one side: Continue if the contralateral side is intact and consider prosthesis insertion if permission has been obtained.
- Urethral injury: Close the urethral injury and continue the procedure with primary closure of the Peyronie’s defect rather than the use of a replacement graft (especially an inorganic graft) to perform antibiotic irrigation of the surgical wound and administer intravenous antibiotics in the postoperative period.

REFERENCES


SUGGESTED READINGS