The Prevention and Management of Noninfectious Complications of Penile Implants

John J. Mulcahy, MD, PhD, FACS

Urology Department, University of Alabama, Birmingham, AL, USA

DOI: 10.1002/smrj.41

ABSTRACT

Introduction. Penile implants have been a mainstay in the treatment of erectile dysfunction for more than four decades. The satisfaction rate with the functioning of these devices has been very high. Problems can develop with the device itself or with the tissues surrounding it. Knowledge of preventing and managing these adverse events is critical to a successful outcome and sustained patient satisfaction.

Aim. A narrative of the prevention and management of noninfectious complications of penile implant placement gained from the author's extensive experience is presented.

Methods. Each category of penile implant complications is presented as a separate subtitle. The initial categories are intraoperative problems; the subsequent groups involve postoperative adverse events.

Main Outcome Measure. To gather information for this manuscript, I reviewed 40 publications and found 32 relevant and helpful.

Results. Attending to the details necessary for proper placement of prosthetic parts during the initial surgery will minimize the chance of problems developing. Prompt attention to postoperative problems will thwart their progression to a more extensive adverse situation, which will be more difficult to remedy.

Conclusions. Complications during penile implant placement and in the postoperative period may occur. Knowledge of maneuvers to avoid their occurrence and prompt attention to correcting problems as they arise are paramount to a successful outcome and to maintaining high satisfaction rates. **Mulcahy JJ. The prevention and management of noninfectious complications of penile implants. Sex Med Rev 2015;3:203–213.**

Key Words. Penile Implant Complications; Cylinder Erosion; Fibrotic Corporal Bodies; Straightening Curved Erections; Hypermobile Glans Penis; Crural Perforation; Mechanical Malfunction of the Implant

Introduction

Penile implants have long been the gold standard for the treatment of erectile dysfunction (ED) refractory to more conservative measures such as medications and vacuum devices. After the introduction of effective implants over 40 years ago, yearly sales had grown exponentially until the mid-1990s when sildenafil citrate (Viagra) was introduced to the medical community. This medication and its congeners are effective in the majority of patients with ED, but not in every case. Penile implants still play a role in treating ED, and sales are gradually returning to the levels seen two decades ago. As with any surgical procedure, complications during and after implantation of these devices can occur. These complications can be related to mechanical malfunction of the device itself or tissue problems arising due to the presence of a foreign body. As mechanical devices, penile implants have proven to be very reliable with repair rates in the range of 15% at 5 years and 30–40% at 10 years [1]. The majority of the repairs seen in most series are related to tissue problems such as infection, pump migration, and erosion of parts rather than malfunctions of the device.

Informed Consent

Patients who opt for placement of a penile implant tend to be highly motivated to continue with sexual activity and are focused on the appearance of the penis and its functioning as an important aspect of their lives. A thorough explanation of the outcomes to be sought from this surgery is important to avoid any unrealistic expectations and disappointment with the final result. The erection achieved with a penile implant will likely be shorter and narrower in girth than the patient's natural erection when it was functioning well. A sheath of scar tissue, which is called the pseudocapsule, forms around all parts of the implant as the reaction of the body to healing. This scar does not stretch as the cylinders are inflated and hence negates the elastic feature of the native tunica albuginea of the corpus cavernosum. The most common reason for disappointment with the outcome following penile implant placement is the decreased size of the erection. The larger the initial size of the erection, the greater will be the loss of size and dissatisfaction. Other elements of the informed consent that should be discussed with the patient during the decision-making process before the surgery are listed in Table 1.

Fibrotic Corpora

Scar tissue within the corpora cavernosa will impede dilation of the cavities and make placement of implant cylinders difficult. Situations where dense corporal fibrosis may be encountered are following episodes of ischemic priapism, following removal of implant cylinders for infection or erosion, trauma to the corporal bodies, or an infection in the corpus cavernosum, which may be seen following the use of a contaminated needle during a pharmacologic injection. Less bothersome is the scar sometimes seen in the spongy cavernosal tissue in patients with diabetes mellitus and distal corporal ischemia, in scarred corporal bodies of patients with Peyronie's disease, and after repeated corporal injections during a pharmacologic erection program. When approaching a patient whose corporal bodies may pose a situation of difficult dilation, a virgin corporotomy site may afford an easier starting point for access to spongy erectile tissue to begin the dilation. If previous implant cylinders were placed via a penoscrotal approach and the implant was removed, an attempt at a secondary placement of cylinders at a later date will usually be easier through an infrapubic approach where less scar tissue will be encountered. Dilation through mid-corporal incisions, i.e., infrapubic or penoscrotal, instead of through a distal subcoronal or proximal perineal incision will result in less distance to dilate rather than a long length of dilation in one direction. If resistance to dilation is encountered during distal dilation, a subcoronal corporotomy may be made and dilation carried out proximally until the site of the resistance is overcome. The initial dilation is carried out using Metzenbaum scissors. The tips of the scissors should always point laterally away from the corpus spongiosum. The scissors should progress with a spreading, not a cutting, motion and pressure on the scissors pointing distally should be exerted as they are kept parallel to the shaft of the penis. The corpus cavernosum ends about one third of the way into the glans penis and once the scissors reach this point, they can be removed and Hegar or Brooks dilators can then follow. Occasionally, a plane between the tunica albuginea and the scarred spongy erectile tissue can be found and dilation in this plane will be easier than through the center of dense scar tissue. Broadening the caliber of the cylinder space in the face of scar tissue can be a challenge. Various cavernotomes are available for this purpose. The Uramix cavernotomes (Uramix, Inc., Lansdowne, PA, USA) use a raised blade to shave corporal scar tissue as the rod is oscillated back and forth in the tissue [2]. They are now available as small as a size 6 millimeters, which will accommodate very narrow corporal cavities. In the Rossello cavernotomes (Coloplast Corporation, Humleback, Denmark), small sharp-raised projections are imbedded in the metal, which thin out scar tissue as the rods are pulled from the corporal body much like a wood rasp shaves wood (Figure 1) [3]. The Otis urethrotome (Symmetry Surgical, Antioch, TN, USA), once widely used to treat urethral strictures before the advent of the optical urethrotome, can also successfully broaden the caliber of scarred corporal bodies. One places this urethrotome proximally or distally into the narrow

Table 1 Elements of the informed consent for penile implant placement

Size of the erect penis
Firm penis only
Sensation changes
Ejaculation changes
Postoperative pain
Repeat operation for:
Mechanical repair
Tissue problems
Other erectile dysfunction treatments
Variety of implants