

ERECTILE RESPONSE TO INTRACAVERNOUS INJECTION OF VASOACTIVE DRUGS AFTER PENILE PROSTHESIS REMOVAL

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ABSTRACT—Two patients with a history of penile prosthesis removal presented for non-prosthetic treatment of their erectile dysfunction. The first patient had a penile implant for two years before it was removed and showed extensive cavernosal fibrosis. He did not respond to intracavernosal injection of vasoactive drugs. The second patient had the prosthesis for four weeks. He showed no evidence of cavernosal fibrosis and responded well to the intracavernous injection. He has been in an intracavernous autoinjection program for more than one year without complications.

After some attempts to do penile venous surgery in the beginning of the twentieth century,^{1,2} insertion of penile prosthesis became the first effective treatment for organogenic erectile dysfunction.^{3,4} Starting from various surgical approaches, the implantation of a semirigid⁴ or malleable⁵ penile prosthesis requires the opening of the cavernous bodies and dilatation to make room for the implant.

The most frequent complications of the Jonas prosthesis are infection, protrusion, and severe pain.^{5,6} These complications usually require removal of the implant. If the patient refuses a new prosthetic implant, the therapeutic options to treat the erectile dysfunction are limited.

Case Reports

Case 1

A forty-six-year-old man with insulin-dependent diabetes had a Jonas prosthesis implanted for twenty-five months. He did well until he presented with an extrusion of the left prosthesis through his urethral meatus (Fig. 1). The right and left prostheses were removed.



FIGURE 1. Plain x-ray film of Jonas prosthesis with left prosthesis protruding through meatus (Case 1).

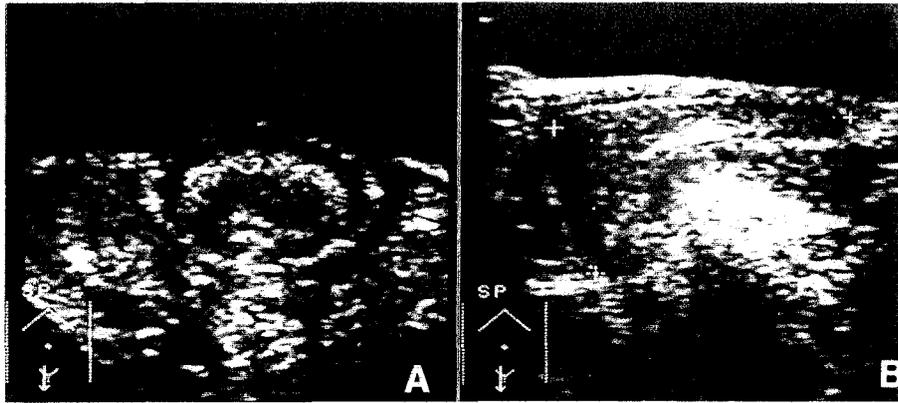


FIGURE 2. Penile ultrasound with 5 MHz-probe shows typical signs of cavernous fibrosis (Case 1). (A) Transverse section; (B) longitudinal section.

Both sites healed well without any signs of residual infection. He reported complete loss of spontaneous erection and requested treatment for his impotence, but refused a new prosthetic implant. On palpation his penis felt hardened. Penile ultrasound showed signs of cavernosal fibrosis (Fig. 2A and B).⁷ Nocturnal penile tumescence (NPT)-measurements with a Jonas Snap-Gauge did not show any increase in tumescence during sleep. He showed no reaction to diagnostic intracavernous injections, even not to high doses of papaverine (45 mg) and phentolamine (1.5 mg).⁸ Caverosography was done. The insertion of the 19-G needle was difficult and the injection of contrast medium had to be performed at a high pressure (>200 cm H₂O), because of the extensive fibrosis. The x-ray films showed a shrunken and irregularly filled cavernous body (Fig. 3A and B). No remarkable increase in size of the penis was noted during the perfusion.

Case 2

A sixty-five-year-old man presented at an impotence clinic. He reported an erectile dysfunction of seven-year duration, treated six years ago by insertion of a Jonas prosthesis. Because of severe pain, the prosthesis was removed after four weeks. He had no additional treatment for his erectile dysfunction. After removal he reported a reduced spontaneous erection with good tumescence, but lack of rigidity rendering intromission impossible.

On palpation his penis felt normal. He had no underlying medical or neurologic disease and his blood chemistry (SMA 12, testosterone and prolactin) was normal. NPT measurement showed abnormal, reduced increase of penile tumescence during sleep. Penile Doppler US after intracavernous injection of vasoactive drugs showed a normal penile arterial system. With intracavernosal injection of vasoactive drugs (22.5 mg papaverine and 0.75 mg phentolamine), a full erection of fifteen minutes duration was induced. Nevertheless, pharmacocavernosography⁹ showed a venous leak.

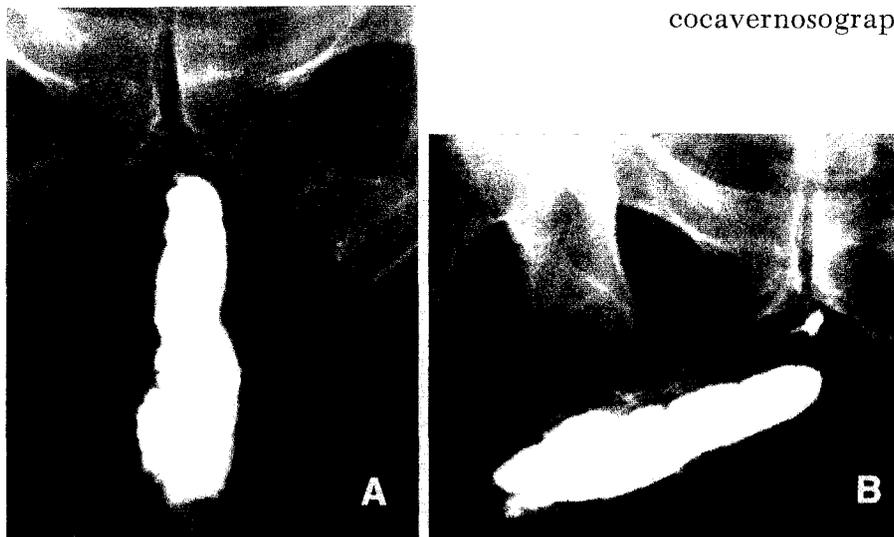


FIGURE 3. Caverosography of Case 1 shows irregularly filled and shrunken corpus cavernosum in (A) anterior posterior view and (B) oblique view.

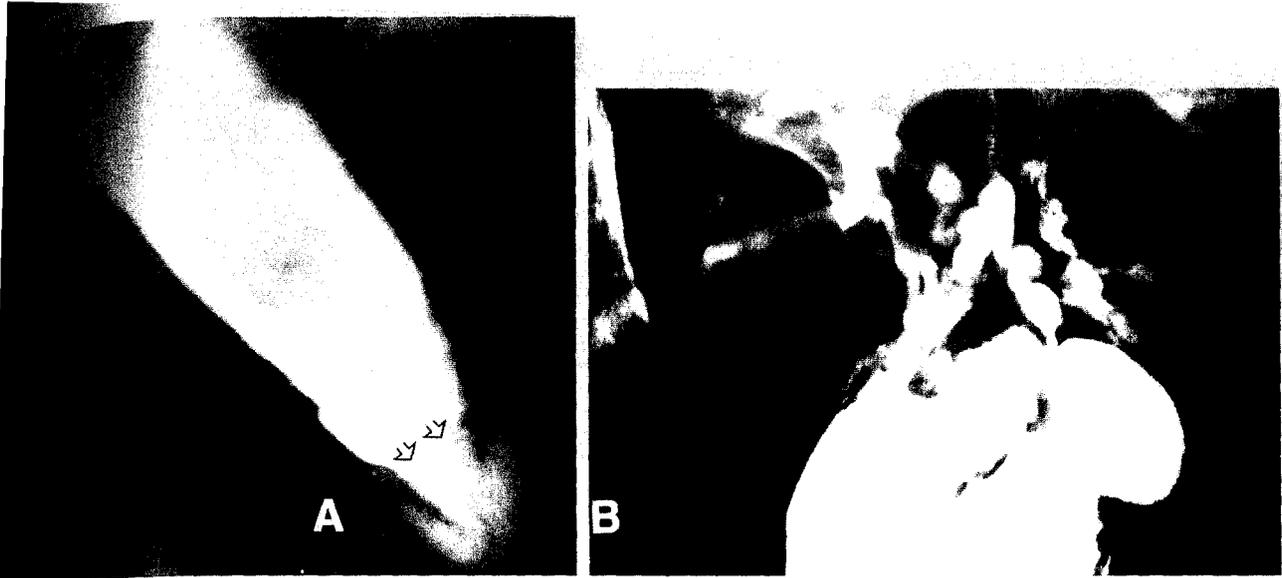


FIGURE 4. Cavernosography of Case 2. (A) Distal part of penis with communication between corpus cavernosum and glans (arrows). (B) Proximal part of penis with opacification of abnormal draining veins.

maintenance flow 165 mL/min). The cavernous bodies were of normal shape (Fig. 4A and B). He entered an autoinjection program for his erectile dysfunction.¹⁰ After more than fifty autoinjections and no complications, he is fully satisfied with this therapy.

Comment

The intracavernosal insertion of a penile prosthesis requires dilatation of the cavernous bodies. This procedure does not imply complete destruction of the cavernous tissue in all cases. Many of our patients with penile prosthesis report an additional natural increase in tumescence by sexual stimulation. Further studies have to show if the compression of the cavernous tissue by the penile prosthesis causes cavernosal fibrosis in the long run.

We think that after removal of a penile prosthesis every patient should undergo evaluation of the remaining erectile capacity. If he responds well to the intracavernous injection of vasoactive drugs and he fits into the preselection criteria of an autoinjection program, he should be offered this therapeutic option.

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