Malleable Penile Implant Is an Effective Therapeutic Option in Men With Peyronie's Disease and Erectile Dysfunction

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ABSTRACT

Background: The inflatable penile prosthesis (IPP) is typically the preferred implant for Peyronie's disease (PD) and malleable penile prostheses (MPPs) have been discouraged.

Aims: To evaluate the effectiveness and patient satisfaction of the MPP vs IPP in patients with PD.

Methods: Men with PD and erectile dysfunction who elected for penile implant surgery constituted the study population. Preoperatively, demographic and comorbidity parameters were recorded. Curvature was measured with a goniometer at maximum rigidity after intracavernosal injection of a vasoactive agent. Postoperatively, overall satisfaction was measured at 3, 6, 12, and 24 months on 5-point Likert scale from 1 (dissatisfied) to 5 (very satisfied).

Results: 166 men with a mean age of 59 ± 10 years were analyzed. The mean preoperative curvature in the entire cohort was 65° (range = 30–130°). 94% of patients with MPP had total resolution of their curvature at the end of the operation, whereas 8 patients (6%) had residual curvature (25–40°). In the IPP group 25 of 30 (83.3%) had a straight penis at the end of surgery, whereas 5 of 30 (16.7%) had residual curvature, with the mean magnitude being 33° in the MPP group and 30° in the IPP group. 86% of all patients had diabetes. There were no differences between the 2 implant groups in age, hemoglobin A_{1c}, body mass index, or smoking status. The mean patient satisfaction was 4.42 ± 0.70 (range = 2–5) and there was no difference between the 2 groups. The mean follow-up period was 23.4 months (range = 6–29 months).

Conclusion: We found that the MPP is as effective as the IPP in curvature correction in patients with PD, with similar patient satisfaction for the 2 groups. **Habous M, Farag M, Tealab A, et al. Malleable Penile Implant Is an Effective Therapeutic Option in Men With Peyronie's Disease and Erectile Dysfunction. Sex Med 2017;X:XXX–XXX.**

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Key Words: Erectile Dysfunction; Peyronie's Disease; Malleable Penile Prosthesis; Inflatable Penile Prosthesis; Penile Deformity; Penile Curvature

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INTRODUCTION

Implanting a penile prosthesis is often the best treatment for patients with severe erectile dysfunction (ED) that does not respond to pharmacotherapy. Pharmacotherapy often fails in patients with diabetes, radical prostatectomy, Peyronie's disease (PD), and severe penile fibrosis. Penile prosthetic surgery has high long-term mechanical reliability and patient satisfaction rates higher than 85%.[1] Penile prosthesis implantation is the standard procedure for patients with PD and concomitant ED that does not respond to medical treatment.[2] 20% to 30% of patients with PD have ED refractory to medical therapy and can benefit from a combined procedure addressing these 2 conditions.[3] Penile implant placement in these patients can treat the 2 problems by providing penile rigidity and the deformity correction required. Although patients with mild degrees of curvature can have complete penile straightening by placement of the prosthesis alone, many patients have residual curvature requiring intraoperative adjuvant maneuvers, such as modeling and plaque incision with or without grafting.[4,5]

Garaffa et al[6] reported that of additional straightening procedures, modeling was more successful in achieving straightening when performed on an inflatable penile prosthesis (IPP; 84%) than on a malleable penile prosthesis (MPP; 54%). If the curvature persisted after modeling or the curvature was ventral, straightening was achieved with tunica plications or incision with or without grafting. In another study, Levine et al[7] reported on a single-center experience with the IPP and straightening maneuvers as necessary in 90 men with medication-refractory ED and PD. Additional intraoperative maneuvers used to straighten the penis after placement of the prosthesis included manual modeling, plaque incision, and grafting, if the defect created with the incision was large enough ($\geq$2 cm). In their study, IPP placement allowed reliable and satisfactory coitus for the great majority of men (91%).

Although all types of penile implants can be used, implantation of an IPP has been reported to be the most effective and preferred in those patients based on the published data.[8–10] In certain regions of the world, the MPP is the penile implant of choice for ED, often because of economic reasons. However, it has been suggested the MPP is not ideal for patients with PD.[10]

Our hypothesis was that the MPP would be as effective as the IPP in the management of patients with ED and PD. Our clinical experience suggests that the MPP is an effective strategy in the treatment of patients with combined PD and ED. We compared the outcome and satisfaction rate in patients with PD and ED receiving the MPP compared with those receiving the IPP.

METHODS

Study Population

From July 2011 through June 2014, men with PD and ED not responding to medical therapy were counseled regarding penile implant surgery.

Patients who had a favorable clinical response with an intracavernosal injection (ICI) and refused ICI as a therapeutic option for their ED were included in this study. For this analysis, we included only those who had a favorable clinical response to ICI so that we could accurately measure the magnitude of curvature before surgery. Some patients requested penile implantation after they noticed that they had lost significant penile size. Others who had significant deformity did not wish to undergo corrective surgery (eg, Nesbit) with subsequent risk of ED and losing more penile size. They wanted to address their problems with 1 final solution. After good counseling and explaining all therapeutic options, patients who had a favorable clinical response with ICI but who found ICI unpalatable and refused further treatment with ICI were chosen for penile implantation. Penile implant surgery is the treatment of choice in such men in our practice and this is supported by International Consultation on Sexual Medicine guidelines.[11]

Those who opted for this procedure constituted the study population. The criteria for penile implant surgery in this population included (i) men in a stable relationship, (ii) men with penile curvature of at least 30°, (iii) men with ED refractory to medical therapy, and (iv) stable penile curvature for at least 9 months. Complete medical and sexual history, physical examination, and comorbidities were recorded for all patients. Basic investigational workup included penile duplex ultrasound study with ICI for all patients. The MMP used was the Genesis (Coloplast, Minneapolis, MN, USA) and the IPP used was the Titan OTR (Coloplast). The study was approved by our institutional ethical board committee.

Penile Deformity Assessment

Curvature was measured with a goniometer at maximum rigidity after ICI using an intracavernosal quadri-mix (prostaglandin E_1 5 μg, papaverine 15 mg, phentolamine 1 mg, atropine 20 μg per 1 mL of saline). Repeated dosing was administered to ensure full erection in all patients (mean dose = 0.3 mL, range = 0.1−1 mL).

Preoperative Counseling for Implant Type

The preoperative discussion focused on the goal of obtaining "functional straightness" and patients were informed that a residual curvature no greater than 20° in any direction would not compromise sexual activity and that a curvature less than 20° was the goal and further maneuvers would not be used if such a residual curvature existed. Advantages and disadvantages of the MPP and IPP were explained thoroughly for all patients. Choosing the MPP vs the IPP was the patient's decision. The surgeon's role was to explain the advantages and disadvantages of each type of implant using educational videos. At our center, most patients choose the MMP, primarily because the patient pays for this procedure (no insurance coverage). The average cost of an MMP in our center is US$1,300 and the total cost of MMP implantation ranges from US$5,500 to US$6,000. In

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