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ORIGINAL ARTICLE

Does the etiology affect the outcome and satisfaction rates of penile prosthesis implantation surgery?

Ibrahim Halil Bozkurt*, **Burak Arslan, Zafer Kozacioglu, Tarik Yonguc, Tansu Degirmenci, Bulent Gunlusoy, Suleyman Minareci**

Urology Clinic, Izmir Bozkyaka Training and Research Hospital, Izmir, Turkey

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Abstract Our aim was to compare the outcomes and satisfaction rates of men undergoing penile prostheses implantation (PPI) secondary to radical prostatectomy (RP) and other causes of vasculogenic erectile dysfunction (ED). A total of 142 patients, of whom 60 underwent PPI due to ED following RP (Group 1) and 82 underwent PPI due to ED with other vasculogenic causes (Group 2) were included in this study. The preoperative erectile status was evaluated with the International Index of Erectile Function (IIEF). The satisfaction of patients and partners were evaluated by a telephone interview using Erectile Dysfunction Inventory of Treatment Satisfaction (EDITS) questionnaire and Erectile Dysfunction Inventory of Treatment Satisfaction Partner Survey. Preoperative mean IIEF scores were significantly lower in Group 1 (17.5 ± 6.4 vs. 24.2 ± 5.1, $p = 0.01$). For Groups 1 and 2, the mean EDITS scores of the patients were 58 ± 10 and 71 ± 8, respectively, and that for the partners were 46 ± 8 and 65 ± 7, respectively. Group 1 had significantly lower scores both for the EDITS and the EDITS Partner Survey ($p = 0.03$, $p = 0.01$, respectively). Patients who had undergone RP and their partners were found to have lower satisfaction rates compared to patients with other causes of vasculogenic ED who had penile implant surgery. From this point of view, it is important to know the patient's expectations about the treatment outcomes and a preoperative psychological and sexual counseling should be managed for possible treatment alternatives after RP.

Conflicts of interest: All authors declare no conflicts of interest.

* Corresponding author. Izmir Bozyaka Training and Research Hospital, Urology, Saim Cikrikci Street, Number 59 Bozyaka, Izmir 35170, Turkey.
E-mail address: ihalilbozkurt@yahoo.com (I.H. Bozkurt).

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Introduction

Erectile dysfunction (ED) is the persistent inability to attain and maintain a sufficient erection for a satisfactory sexual performance [1]. Although ED is a benign disorder, it may affect physical and psychosocial health and may have a significant impact on the quality of life (QoL) of sufferers and their partners [2]. The prevalence of ED is increasing as the life expectancy of men continues to increase. It is estimated that 20—30% of adult men suffer from at least one episode of sexual dysfunction in their lives [1].

ED shares common risk factors with cardiovascular disorders such as metabolic syndrome, smoking, obesity, and hypercholesterolemia. Also, ED is a common unwanted complication of radical prostatectomy (RP) in any form (open, laparoscopic, or robotic) affecting health-related QoL of patients. It is reported that 25—75% of men experience postoperative ED [3]. Phosphodiesterase type 5 (PDE5) inhibitors serve as the first-line treatment for men experiencing ED after RP. The choices for second-line treatment are vacuum devices, intracavernosal vasoactive injections, or transurethral prostaglandin E1, which are associated with significant discontinuation rates. When conservative therapy fails or when the patient refuses conservative treatment, penile prosthesis implantation (PPI) is the gold standard of treatment.

Overall, satisfaction rates for patients and partners are high after PPI [4]. Although the satisfaction rates have been well studied for different types of penile prostheses [5—8], the satisfaction rates in terms of the etiological factor has not been well studied. In this study, we aimed to compare the outcomes and satisfaction rates of men undergoing PPI secondary to RP or other causes of vasculogenic ED.

Materials and methods

Between August 2001 and June 2012, 257 men with ED underwent PPI at our institution. The exclusion criteria were: known neurological disorder, Peyronie's disease, moderate to severe urinary incontinence, those without a regular partner, and patients who had undergone secondary implant surgery. All patients had completed a minimum 1 year follow-up period after PPI. Institutional Review Board approval was obtained from the Local Ethics Committee (Izmir Training and Research Hospital): Number 19-28/2; January 24, 2013. Group 1 comprised 60 patients who underwent PPI due to ED following RP, and Group 2 comprised 82 patients who underwent PPI due to ED with other vasculogenic causes. The patients who had undergone bilateral nerve-sparing RP were followed-up for at least 2 years before PPI. Other patients were evaluated for PPI according to their response to first- and second-line treatment and on patients' demands. The most common type of penile prosthesis implanted were AMS 600-650 followed by Mentor Acu-Form, AMS Ambicor, AMS 700 CX, AMS Ultrex, and AMS Ultrex plus.

All operations were performed by two experienced surgeons in a single center under intravenous antibiotic prophylaxis and spinal anesthesia. The skin of the surgical field was scrubbed with povidone—iodine solution for 10 minutes. In most of the cases a single penoscrotal incision was used; an infrapubic incision was rarely required, particularly for three-piece inflatable prostheses. Intraoperative complications were recorded.

Data about preoperative assessment and complications were obtained retrospectively from the patients' records. Complications are summarized in Table 1. The preoperative erectile status was evaluated with the international index of erectile function (IIEF). The satisfaction of patients and partners were evaluated by a telephone interview using the Erectile Dysfunction Inventory of Treatment Satisfaction (EDITS) questionnaire and Erectile Dysfunction Inventory of Treatment Satisfaction Partner Survey [9]. The patients were also asked if they would undergo the same operation again and if they would recommend this treatment to friends.

Statistical analysis

All statistical analyses were performed using SPSS software version 17.0 (SPSS Inc., Chicago, IL, USA). Categorical variables were analyzed using the χ^2 or Fisher exact test and continuous variables were analyzed using the Mann—Whitney *U* test. Comparative differences were considered statistically significant when $p < 0.05$.

Results

After the exclusion of patients with whom we could not have contact and those who refused to respond to the survey, a total of 142 patients were enrolled. Patients in Group 1 and Group 2 had a mean age of 57 years (40—76 years) and 60 years (48—74 years), respectively, without a statistically significant difference ($p = 0.771$).

Mean duration of time with ED in the preimplantation period was 29.4 ± 22.7 months and 51.4 ± 36.7 months in Groups 1 and Group 2, respectively ($p < 0.001$). In Group 1 and Group 2, 85% and 82%, respectively, of the patients had tried PDE5 inhibitors, and 28% and 24%, respectively, had tried intracavernosal injections before PPI. None of the patients had previously tried a vacuum in both groups. The most common intraoperative complications were corporeal crossover, corporeal perforation, and urethral perforation. In the case of urethral perforation, the patient was catheterized and the operation was postponed for a second session. The complications are summarized in Table 1. There was no statistically significant difference between

Table 1 Intraoperative and postoperative complications.

Complications	RP	Vasculogenic	*p*
Intraoperative, total	4 (6.6)	3 (3.6)	0.456
Corporeal crossover	2	1	
Corporeal perforation	1	1	
Urethral perforation	1	1	
Postoperative, total	5 (8.3)	8 (9.7)	0.772
Infection	2	2	
Erosion	1	3	
Mechanical complications	2	3	

Data are presented as *n* (%).
RP = radical prostatectomy.