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Penile Prosthesis Implantation for the Treatment of Erectile Dysfunction

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Objective: To evaluate the outcome of penile prosthesis implantation.

Setting: Salmaniya Medical Complex, urology unit.

Design: Retrospective study.

Method: The data of Patients who underwent penile prosthesis implantation for the treatment of erectile dysfunction from 10/01/2003 to 01/01/2008 were reviewed. The patients were operated by a single surgeon using the same technique.

Result: Fifty-three patients underwent penile prosthesis implantation surgery for ED. The mean age was 56 (ranged between 27-81 years). The implanted prosthesis is manufactured by the American Medical Systems. Thirty-three patients had AMS 650 Malleable penile prosthesis and 20 patients had AMS Ambicor inflatable penile prosthesis.

The most common complication was superficial wound infection in 3 patients, erosion in 2 patients and urinary retention in one patient. Forty-seven patients (88%) were satisfied with the outcome, more with inflatable devises. The dissatisfaction was mainly due to cosmetic factors, high expectations and glans penis flaccidity.

Conclusion: Penile prosthesis surgery is a safe and effective treatment for patients with erectile dysfunction in whom medical treatment had failed. It has a high patient satisfaction rate.

In our study, the satisfaction rate was 88% and we encountered few minor complications.

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Erectile dysfunction (ED) is a common condition in aging population, Massachusetts Male Aging Study (MMAS) estimated that 52% of men between 40 and 70 years were found to have some degree of ED. MMAS and other studies found that the likelihood of developing ED increases significantly with age. The vast majority of ED is primarily of organic and vascular cause, although psychological factors play a role in most cases.

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ED has been shown to compromise overall quality of life and is associated with depression, anxiety and loss of self-esteem[1,2].

Several treatment modalities have been established for patients with ED. Phosphodiesterase type-5 inhibitors (PDE5 inhibitors) are the first line treatment option which are successful in 70-80% of men[3]. For non-responders or who cannot take PDE5 inhibitors, the vacuum constrictive device, although became gradually out of fashion continues to serve as a treatment option. Despite high dropout rate, intra-cavernosal injection is the most effective treatment especially in diabetic ED[4]. Penile prosthesis introduced as the first effective and the most successful organic treatment for ED when other treatment options have proven unsatisfactory[5,6].

The aim of this study is to evaluate our experience and the outcome of penile prosthesis implantation surgery for the treatment of ED.

METHOD

This is a retrospective study evaluating patients' data who underwent penile prosthesis implantation surgery for ED. All the patients are operated by the same surgeon and using the same technique from period 10/01/2003 to 01/01/2008. The files were reviewed for patients' characteristics, cause of ED, type of implantation, complications and satisfaction.

RESULT

Fifty-three patients underwent penile prosthesis implantation surgery for treatment of ED. Patients age ranged 27-81 years (mean 56 years).

The cause of ED was related to diabetes in 32 patients (60.3%), vascular/hypertension in 19 patients (35.8%), pelvic surgery in one patient (1.8%), and spinal cord injury in one patient (1.8%).

All patients were implanted with the prosthesis manufactured by the American Medical Systems (AMS, Minnetonka, Minnesota, USA). Malleable prosthesis (AMS 650) was implanted in 32 patients and the 2-piece inflatable Ambicor prosthesis in 20 patients. Forty-seven patients had primary prosthesis implanted and 6 had revision implants, out of which 3 Ambicor prosthesis exchanged to Malleable (AMS 650), one Ambicor to the same type and one Malleable to Malleable.

All patients were admitted one day before surgery for proper evaluation, glycemic control and were kept on prophylactic antibiotics (third generation cephalosporin) which was continued for one day postoperatively and then given oral preparations for two weeks.

The primary malleable prosthesis was implanted through ventral-distal penile incision, while Ambicor was implanted through a penoscrotal incision. Intra-operatively, corporal wash done with mixed solution of Cefuroxime and Gentacin, Vancomycin was added in cases of revision implants.

One patient developed urinary retention and required catheterization for 5 days. Retention was

noted mostly in malleable penile implants and in patients with previous history of benign prostatic enlargement with lower urinary tract symptoms.

Average hospital stay was 3 days (2-6 days), 65% discharged on the second day.

Postoperatively, two patients developed superficial wound infection; one was treated conservatively and the other needed secondary suturing. Minimal scrotal hematoma was noted in 2 patients. Two patients had severe penile pain, which responded will to non-steroidal anti-inflammatory drugs (NSAIDs). Two patients noted to have erosion, which was found early in one and was treated with local wound care and the second patient required extraction of the device. One patient with Ambicor penile prosthesis developed severe penile and scrotal edema and was treated conservatively. One patient had partial corporal suture disruption that needed corporal repair but without loss of the device.

Patients were followed up in the clinic until the wound healed and then referred to prosthesis training specialist to evaluate prosthesis function. Then patients were followed up biannually or annually. The mean follow-up was 36 months (6-60).

Fifteen patients (28.3%) lost for follow up after first year, 29 patients (54.7%) completed 48 months and are still on regular follow-up either for prosthesis or for other urological conditions.

Forty-seven patients (88%) were satisfied with the outcome and the prosthesis function. Satisfaction was more in patients with inflatable devises; the dissatisfaction was mainly due to cosmetic factors, high expectations of the patient and glans penis flaccidity especially with malleable prosthesis.

DISCUSSION

Beheri was the first in 1960 to use paired, intracorporeal polyethylene rods, and in 1966, he updated his experience with 700 patients. In spite of Beheri's extensive experience, the use of his prosthesis did not gain general acceptance[7,8].

However, recently because of the improvements and the advances of the penile prosthesis and the surgical techniques, the penile prosthesis implantation gained an important role in the treatment of ED and has been considered the gold standard treatment for irreversible ED of organic causes[9].

The incidence of ED is increasing in this region, which is mainly attributed to the high incidence and prevalence of diabetes and hypertension which are the etiological factors in ED[2,10].

The incidence of superficial wound infection in this study was similar to other published data[9,11].

Prosthesis infection represents the most serious challenging complication; the reported incidence is 0.8-8.9%[11,12]. In the present study, though our sample was small, but we did not encounter prosthesis infection, which required prosthesis reinsertion except for one patient due to erosion. In this study, the incidence of prosthesis infection is reduced due to the strict measures implemented to prevent this complication[13,14]. In our experience, thorough preoperative

scrubbing of the penis, scrotum and supra-pubic region with antiseptic solution, prophylactic and postoperative antibiotics use and the use of copious antibiotic solution wash for corporal and wound irrigation during the procedure. In addition, the short operative time reduced the incidence of prosthesis infection.

Penile prosthesis implantation has the highest satisfaction rates among all the available treatment options for erectile dysfunction. Salama reported that 70% of the patients and 57% of the partners were satisfied with the malleable penile prosthesis among couples in the Middle East[15]. McLaren et al reported that 83% of the patients and 70% of the partners were satisfied with the use of AMS 700 penile prosthesis[16].

In this study, overall 88% of the patients were satisfied with the outcome and prosthesis function. The satisfaction was more in patients with inflatable devises; the dissatisfaction was mainly due to cosmetic factors, high expectations from the patient and the glans flaccidity especially with malleable prosthesis. However, we could not get the satisfaction rate from the partners because of cultural reasons.

Erosion of penile prosthesis in spinal cord injury patients was due to diminished sensation. Intra corporeal injection or vacuum devices are better option in such patients except for young educated patients who can appreciate the seriousness of the complications.

CONCLUSION

Penile prosthesis surgery is a safe and effective treatment with high patient satisfaction rate for patients who failed medical treatment had failed, it should be considered as the gold standard treatment for irreversible ED of organic causes. In our study, the satisfaction rate was 88% and we encountered few minor complications.

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