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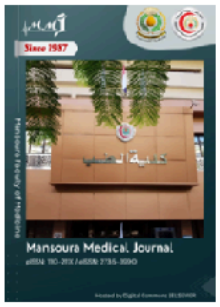

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EVALUATION OF SEMIRIGID PENILE PROSTHESIS IN MANAGEMENT OF PATIENTS WITH ERECTILE DYSFUNCTION (STUDY OF 20 CASES)

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ABSTRACT

Objective : To study the results of semirigid penile prosthesis implantation in management of patients with erectile dysfunction (ED).

Patients and Methods : A total number of 20 patients presented with ED were included in this study. These patients were subjected to penile prosthesis implantation of the semirigid type. They presented with psychogenic, neurogenic and/or vascular erectile dysfunction and failed to give a response after using the less invasive nonsurgical treatment modalities. All patients were followed up for a period of one year at the 3rd, 6th month, and 1st year postoperatively. During follow up all patients were subjected to clinical examination to record any postoperative complications and a questionnaire (modified from Marcos at al, 1998) (1), was answered by all patients preoperatively and at each visit. All patients answered the questionnaire in the outpatient clinic as part of the preoperative evaluation and again at the 3-,6- , and 12-month visits and the answers were recorded.

Results : Patients in this study were balanced regarding the different variables. There were no postoperative complications in our patients. The patients perceived in their erectile ability and libido. Concern about obtaining and maintaining an erection during intercourse was significantly al-

leviated. There was an increase in the frequency of sexual activity and an improvement in satisfaction with sex life. A decrease in feelings of of sadness, depression, anxiety, anger, frustration, and embarrassment related to sexual activity was also noted.

Conclusion : Despite the shift to medications and vacuum erection devices to restore erectile ability, penile implants are still widely chosen option for managing ED. Patients with poor penile blood supply or anatomic abnormalities and those who fail conservative treatment will require implant insertion. Technical advances in prosthetics and improved surgical techniques have led to the increased use of penile prosthesis in the rehabilitation of men with ED. In our study, we were able to document psychosexual improvement up to one year after insertion of semirigid penile prosthesis. Semirigid penile prosthesis placement was associated with a significantly increased improvement in patients satisfaction.

INTRODUCTION

Erectile dysfunction (ED), which has replaced the term impotence since the National Institute of Health (NIH) Consensus Conference in 1988, is defined as the consistent inability to obtain and/or maintain a penile erection sufficient for satisfactory sexual relations(2) .

ED is a condition with profound psychological consequences and may interfere with a man's overall well-being, self-esteem, and interpersonal relationships(3).

Several treatment modalities for ED are now available (i.e, sildenafil, intraurethral prostaglandin, intracavernosal injections, vacuum devices, penile implants). Most of these treatment modalities have been shown to make sexual intercourse possible; however, few data are available to evaluate the effectiveness of these methods in terms of psychosexual well-being(4). Therefore, it is imperative that all treatment modalities for ED be subjected to critical analyses, not only in terms of quality of erections, but also in terms of psychological benefit.

Despite the shift to medications and vacuum erection devices to restore erectile ability, penile implants are still widely chosen option for managing ED. Patients with poor penile blood supply or anatomic abnormali-

ties and those who fail conservative treatment will require implant insertion. Technical advances in prosthetics and improved surgical techniques have led to the increased use of penile prosthesis in the rehabilitation of men with ED[5] . For many years, penile implant research focused on the mechanical and surgical effectiveness of such treatments in creating an erection adequate for sexual intercourse. Now that the mechanical and technical problems have been minimized, it is vital to evaluate the impact of prosthesis implantation on a patient's psychosexual well-being. ED is often associated with depression, loss of self-esteem, and a poor self-image[6]. Some investigators noted an excellent level of satisfaction in patients after penile prosthesis implantation[7,8]. However, others have reported that the penile implant surgery is sometimes followed by psychological disturbances, and many patients continue to have irrational worries about the implant[7,9] . Much of the data available on psychosexual adjustment after penile prosthesis placement have been hampered by a retrospective study design[7,10]. We present our experience with the results of semirigid penile prosthesis implanted in 20 patients with ED.

PATIENTS AND METHODS

20 patients were subjected to penile prosthesis implantation of the semirigid type. They presented with psychogenic, neurogenic and/or vascular erectile dysfunction and failed to give a response after using the less invasive nonsurgical treatment modalities including vacuum devices, oral medications (sildenafil) and interacavernosal injections. In theses patients there was no mental problems or affective disorders. Also there was no evidence of hypogonadism or hyperprolactinaemia. Penile prosthesis were used inpatients with vascular ED where there was contraindication to vascular surgical procedures e.g. diffuse arterial disease and mixed arteriogenic/venogenic impotence).

These patients were subjected to :

A-Careful history taking.

B-Thorough general and local clinical examinations.

C-Preoperative investigations including:

1- Hormonal analysis (FSH, LH and Testosterone)/

2- Combined injection and stimulation test.

3- Nocturnal penile tumescence "NPT" (RigiCompt or RigiScan).

4- Colored Duplex ultrasound.
5- Routine preoperative investigation.

D- A questionnaire (Table 3) was answered by all patients and the answers were recorded.

Postoperative follow-up :

All patients were followed up in the Endocrine Surgery Unit out-patient clinic at 1,3 and 6 month and 1 year postoperatively.

At the first month postoperatively before the patients attempted sexual intercourse, instructions regarding how to use the implant was explained to them. Physical examination was also done to record any postoperative complications.

At the 3rd, 6th month, and 1st year postoperatively, we used the following

Follow-up schedule for all patients:

1- Clinical examination to record any postoperative complications including, deformity e.g. penile curvature, buckling, lateral bowing or SST deformity, presence of infection whether minor or major, mechanical breakage of the prosthesis, implant extrusion and decreased sensation or numbness.

2- A questionnaire (Table 1) (modified from(1)), was answered by all patients preoperatively and at each visit. The questionnaire consisted of 12 items covering topics such as satisfaction with various aspects of sexual life and frequency of various sexual behaviors (Table 3). The questions were scored on a 5-point scale.

Patients selected a response that best represented their opinion of how closely each statement related to their experience within the previous 7 days. All patients answered the questionnaire in the outpatient clinic as part of the preoperative evaluation and again at the 3-,6- , and 12-month visits and the answers were recorded.

RESULTS

20 patients presented with erectile dysfunction, their age ranged between 28 to 59 years with a mean age of 46.55 years. The duration of marriage in these patients ranged between 5 to 33 years with a mean duration of 20.7 years as shown in Table (2). Penile prosthesis insertion was done for of them.

Table (3) shows the special habits of the patients who underwent penile

prosthesis insertion. No special habits were detected in 7 patients (35%) while 12 patients (50%) were smokers and one patient was alcoholic.

Table (4) shows the type of erectile dysfunction (ED) in the patients who underwent penile prosthesis insertion. ED was primary in two patients (10%) and secondary in 18 patients (90%).

The duration of secondary erectile dysfunction ranged between 3 to 8 years with a mean duration of 4.77 years as shown in table (5).

Figure (1) show the etiology of ED in the patients who underwent penile prosthesis insertion. ED was psychogenic in two patients (10%) and organic in 18 patients (90%). The etiology of organic ED was arteriogenic in 9 patients (50%), venogenic in 2 patients (11.1%), mixed arteriogenic/ venogenic in 4 patients (22.3%), neurogenic in one patient (5.6%) and idiopathic in two patients (11.1%).

Figure (2) show the associated medical illness in the patients who underwent penile prosthesis insertion. No associated medical illness was detected in 5 patients (25%). Diabetes millitus was detected in 6 patients (30%), hypertension in 3 patients (15%), hypertension and ischaemic heart disease in 3 patients (15%), ischaemic heart disease in one patients (5%), hypertension and diabetes millitus in one patients (5%) and neurological trauma in one patient (5%).

Figure (3) show the type of penile prosthesis used in the patients who underwent penile prosthesis insertion. The Acu-Form model of Mentor Corporation was used in 8 patients (40%) and the malleable model of Mentor Corporation was used in 12 patients (60%).

The operative time of prosthesis insertion ranged between 35 to 90 minutes with a mean time of 53.66 minutes. There was no significant difference in the operative time between the two models as shown in Table (6).

An improvement in satisfaction with sexual activity was observed after penile prosthesis implantation. Before penile implant surgery, all patients (20) reported being extremely dissatisfied or unhappy with their sex life. Of the 20 patients, 10% (2 of 20)) reported being extremely dissatisfied or unhappy with their sex life at 3 month, and no patients reported ex-

tremely dissatisfied or unhappy with their sex life at the 6-month and 12-month follow-up visits. Patients' satisfaction ratings of mostly satisfied or pleased with their general sex life were present in 70% (2 of 20), 85% (17 of 20), and 85% (17 of 20) of patients at 3, 6, and 12 months postoperatively respectively. This is shown in figure (4).

There was an increase in the frequency of sexual intercourse or activity as shown in figure (5). Before penile prosthesis surgery, 45% of patients (9 of 20) reported not having sexual intercourse within the previous month, with 55% (11 of 20) reporting that they had intercourse or activity less than two times per month. After prosthesis implantation, 70% of patients (14 of 20) at 3 months, 60% of patients (12 of 20) at 6 months, and 70% of patients (13 of 20) at 12 months after surgery were having sexual intercourse at a rate of two or more times per week.

Self-esteem was noted to improve quickly as shown in figure (6). Before penile implant surgery, 35% of patients (7 of 20) reported having very low self-esteem, and no patients were very confident in regard to their sexual potency. At 3 month after penile implant surgery, no patients reported having poor self-esteem, and 60% (12 of 20) reported being very confident, with high self-esteem after using their penile prosthesis. At 6 months and 12 months after surgery, the high self-esteem rate increased to 70% (14 of 20) and 85% (17 of 20), respectively.

Figure (7) show satisfaction when reaching orgasm before and after penile implant surgery. Before surgery, 5% of patients (1 of 20) were pleased with their orgasm, compared with 25% (5 of 20), 40% (8 of 20), and 65% (13 of 20) of patients being pleased with their orgasm at 3, 6, and 12 months after prosthesis implantation, respectively.

The mean values of the total score of psychosexual changes were 24, 36, 42.6, and 50.1 at preoperative, 3months, 6 months and 12 months visits, respectively. Comparisons of the mean values of the total score revealed significant improvement between preoperative and 3 months scores ($P<0.001$), 3 months and 6 months scores ($P<0.004$), and 6 months and 12 months scores ($P<0.021$) as shown in Table (7) and figure (8).

Table (8) and figure (9) show the Impact of penile prosthesis insertion regarding the frequency of sexual intercourse and penile rigidity (group A questionnaire). The mean values of the score of the frequency of sexual intercourse and penile rigidity were 4.3, 6.2, 7.2 and 7.5 at preoperative, 3months, 6 months and 12 months visits, respectively. Comparisons of the mean values revealed significant improvement between preoperative and 3 months scores ($P<0.001$), 3 months and 6 months scores ($P<0.021$), and 6 months and 12 months scores ($P<0.055$).

Table (9) and figure (10) show the impact of penile prosthesis insertion regarding quality of sexual intercourse (group B questionnaire). The mean values of the score of the quality of intercourse were 8.6, 12.4, 14.4 and 17.6 at preoperative, 3months, 6 months and 12 months visits, respectively. Comparisons of the mean values revealed significant improvement between preoperative and 3 months scores ($P<0.001$), 3 months and 6 months scores ($P<0.021$), and 6 months and 12 months scores ($P<0.001$).

Table (10) and figure (11) Impact of penile prosthesis insertion regarding self-esteem and mode (group C questionnaire). The mean values of the score of self-esteem and mode were 12.9, 18.6, 21.6 and 26.4 at preoperative, 3months, 6 months and 12 months visits, respectively. Comparisons of the mean values revealed significant improvement between preoperative and 3 months scores ($P<0.001$), 3 months and 6 months scores ($P<0.027$), and 6 months and 12 months scores ($P<0.002$).

Table I *Questions used in the study*

1- How would you rate the average or usual erections you have gotten in the recent past?

1) Soft
2) Slightly full, not enough for sex
3) Partially rigid, not enough for sex
4) Partially rigid, firm enough for sex
5) Full and rigid

2- How would you rate your sexual interest; that is, how often do you feel an urge to have sex?

1) Never feel an urge
2) Feel an urge once a month
3) Feel an urge twice a month
4) Feel an urge twice a week
5) Feel an urge more than twice a week

3- During sexual intercourse, do you currently ejaculate?

1) Never
2) Very rarely
3) Rarely
4) Most of the time
5) Always

4- Are satisfied when you reach orgasm?

1) Extremely dissatisfied
2) Unhappy
3) Mixed, satisfied about half the time
4) Mostly satisfied
5) Pleased

5- During sexual intercourse, how concerned are you about getting and maintaining an erection?

1) Very concerned
2) Quite concerned
3) Fairly concerned
4) Slightly concerned

5) No erection

6- How frequently do you and your wife have sexual intercourse or activity?

1) Never
2) Once a month
3) Twice a month
4) Twice a week
5) More than twice a week

7- How satisfied are you with your sexual life in general?

1) Extremely dissatisfied
2) Unhappy
3) Mixed. satisfied about halt the time
4) Mostly satisfied
5) Pleased

8- Does your sexual status cause you any embarrassment?

1) Most of the time
2) Frequently
3) Sometimes
4) Very rarely
5) Never

9- Does your sexual status cause you any anger/frustration?*

10- Does your sexual status cause you any anxiety, especially before attempting sex?*

11- Does your sexual status cause you any sadness/depression?*

12- How would you rate your self-esteem from a sexual point of view?

1) Poor
2) Poor to fair
3) Fairly well adjusted
4) Moderately well adjusted
5) Very confident

* Same criteria as for question 8

Table (2) Age and duration of marriage among patients who underwent penile prosthesis insertion

	Mean ± SD	Range (years)
Age	46.55 ± 8.51	(28 - 59)
Duration of marriage	20.7 ± 8.52	(5 – 33)

Table (3) Special habits of patients who underwent penile prosthesis insertion

Special habits	Number	Percent
No	7	(35)
Smokers	12	(60)
Alcoholic	1	(5)

Table (4) Types of ED among patients who underwent penile prosthesis insertion.

Type	Number	Percent
Primary	2	(10)
Secondary	18	(90)

Table (5) duration of secondary ED among patients who underwent penile prosthesis insertion

	Mean ± SD	Range (years)
Duration of secondary ED	4.77 ± 1.43	(3 – 8)

Table (6) operative time of penile prosthesis insertion

Time	Acu-Form	Maleable	Test of significance	Total time
Mean	61	48.75	t=1.98 P=0.063	53.66
SD	20.19	7.72		15.48
Range (minutes)	(35 – 90)	(35 – 60)		(35 – 90)

Table (7) Impact of penile prosthesis insertion regarding the total score of psychosexual changes

	Median	Mean ± SD	Range
Preoperative	25.8	24 ± 5.87	(12 – 36)
3-month post.	37.2	36 ± 7.68	(12 – 48)
6-month post.	48	42.6 ± 9.91	(12 – 60)
12-month post.	53	50.1 ± 9.99	(12 - 60)

Preoperative versus 3-month postoperative	t=6.2	P<0.001
Preoperative versus 6-month postoperative	t=5.17	P<0.001
Preoperative versus 12-month postoperative	t=6.51	P<0.001
3-month versus 6-month postoperative	t=3.33	P<0.004
3-month versus 12-month postoperative	t=4.21	P<0.001
6-month versus 12-month postoperative	t=2.43	P<0.021

Table (8) Impact of penile prosthesis insertion regarding the frequency of sexual intercourse and penile rigidity (group A questionnaire)

	Median	Mean ± SD	Range
Preoperative	4	4.3 ± 0.97	(2 – 6)
3-month post.	6	6.2 ± 1.28	(4 – 8)
6-month post.	8	7.2 ± 1.36	(4 – 10)
12-month post.	10	7.5 ± 1.75	(4 – 10)

Preoperative versus 3-month postoperative	t=4.02	P<0.001
Preoperative versus 6-month postoperative	t=6.3	P<0.001
Preoperative versus 12-month postoperative	t=7.15	P<0.001
3-month versus 6-month postoperative	t=2.4	P=0.021
3-month versus 12-month postoperative	t=2.76	P=0.011
6-month versus 12-month postoperative	t=0.60	P=0.055

Table (9) Impact of penile prosthesis insertion regarding quality of sexual intercourse (group B questionnaire)

	Median	Mean ± SD	Range
Preoperative	8	8.6 ± 1.95	(4 – 12)
3-month post.	12	12.4 ± 2.56	(8 – 16)
6-month post.	16	14.4 ± 2.72	(8 – 20)
12-month post.	20	17.6 ± 3.53	(8 – 20)

Preoperative versus 3-month postoperative	t=4.2	P<0.001
Preoperative versus 6-month postoperative	t=6.3	P<0.001
Preoperative versus 12-month postoperative	t=7.15	P<0.001
3-month versus 6-month postoperative	t=2.13	P=0.012
3-month versus 12-month postoperative	t=5.72	P=0.001
6-month versus 12-month postoperative	t=3.42	P=0.001

Table (10) Impact of penile prosthesis insertion regarding self esteem and mode (group C questionnaire)

	Median	Mean ± SD	Range
Preoperative	12	12.9 ± 2.93	(6 – 18)
3-month post.	18	18.6 ± 3.84	(12– 24)
6-month post.	24	21.6 ± 4.08	(12 – 30)
12-month post.	30	26.4 ± 5.29	(12 – 30)

Preoperative versus 3-month postoperative	t=5.28	P<0.001
Preoperative versus 6-month postoperative	t=10.2	P<0.001
Preoperative versus 12-month postoperative	t=12.05	P<0.001
3-month versus 6-month postoperative	t=2.41	P=0.027
3-month versus 12-month postoperative	t=5.72	P=0.001
6-month versus 12-month postoperative	t=3.21	P=0.002

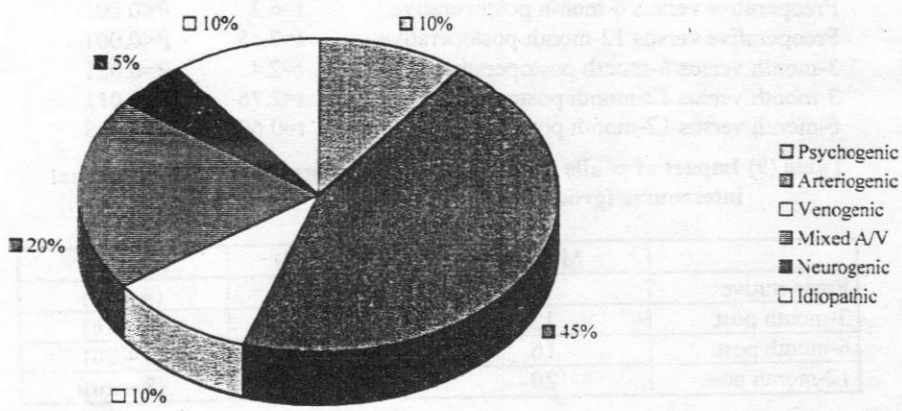

Fig. (1) : Etiology of ED among patients who underwent penile prosthesis insertion

Table (7) Impact of penile prosthesis insertion regarding the total score of psychosexual changes

	Median	Mean ± SD	Range
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3-month post.	37.2	36 ± 7.68	(12 – 48)
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Preoperative versus 3-month postoperative	t=6.2	P<0.001
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Table (8) Impact of penile prosthesis insertion regarding the frequency of sexual intercourse and penile rigidity (group A questionnaire)

	Median	Mean ± SD	Range
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12-month post.	10	7.5 ± 1.75	(4 – 10)

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Preoperative versus 6-month postoperative	t=6.3	P<0.001
Preoperative versus 12-month postoperative	t=7.15	P<0.001
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3-month versus 12-month postoperative	t=2.76	P=0.011
6-month versus 12-month postoperative	t=0.60	P=0.055

Table (9) Impact of penile prosthesis insertion regarding quality of sexual intercourse (group B questionnaire)

	Median	Mean ± SD	Range
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3-month post.	12	12.4 ± 2.56	(8 – 16)
6-month post.	16	14.4 ± 2.72	(8 – 20)
12-month post.	20	17.6 ± 3.53	(8 – 20)

Preoperative versus 3-month postoperative	t=4.2	P<0.001
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Preoperative versus 12-month postoperative	t=7.15	P<0.001
3-month versus 6-month postoperative	t=2.13	P=0.012
3-month versus 12-month postoperative	t=5.72	P=0.001
6-month versus 12-month postoperative	t=3.42	P=0.001

Table (10) Impact of penile prosthesis insertion regarding self esteem and mode (group C questionnaire)

	Median	Mean ± SD	Range
Preoperative	12	12.9 ± 2.93	(6 – 18)
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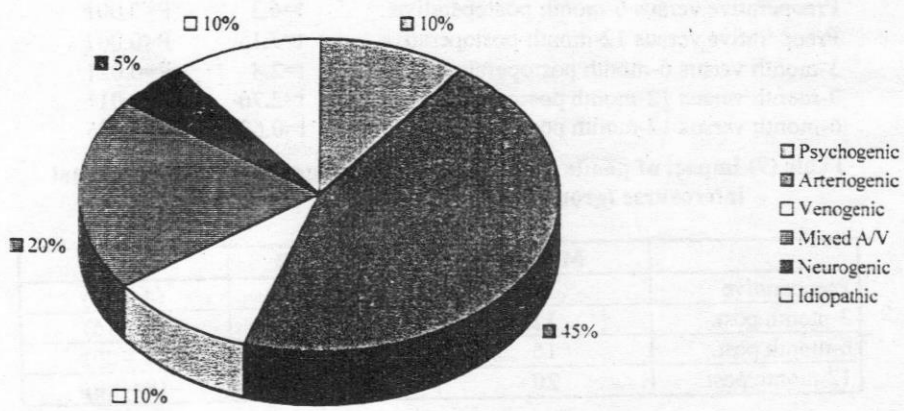


Fig. (1) : Etiology of ED among patients who underwent penile prosthesis insertion

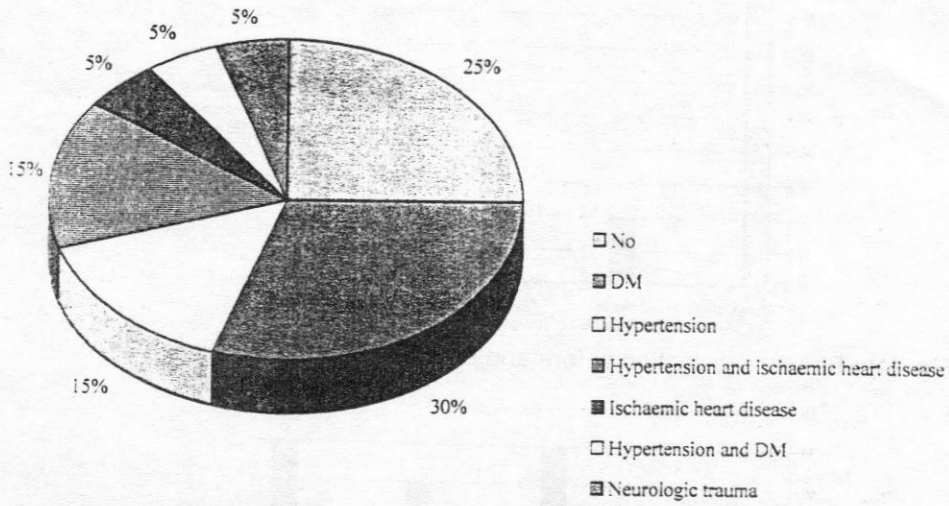


Fig. (2) : Associated medical illness among patients who underwent penile prosthesis insertion

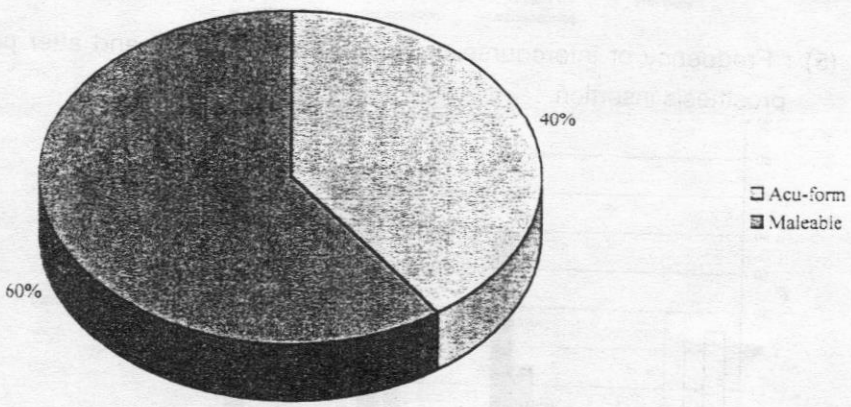


Fig. (3) : Type of penile prosthesis used in the study.

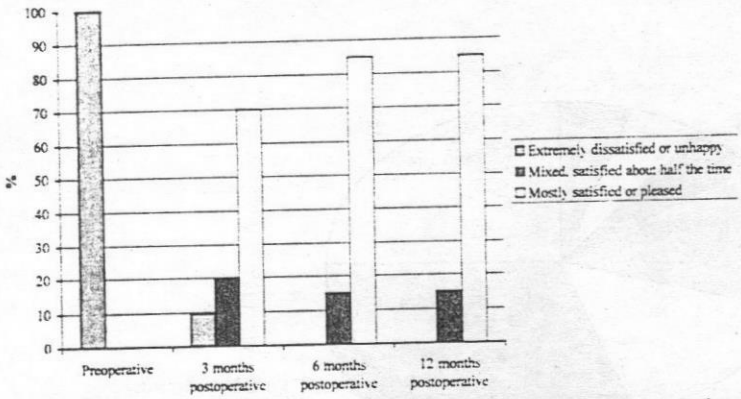


Fig. (4) : Sexual satisfaction before and after penile prosthesis insertion

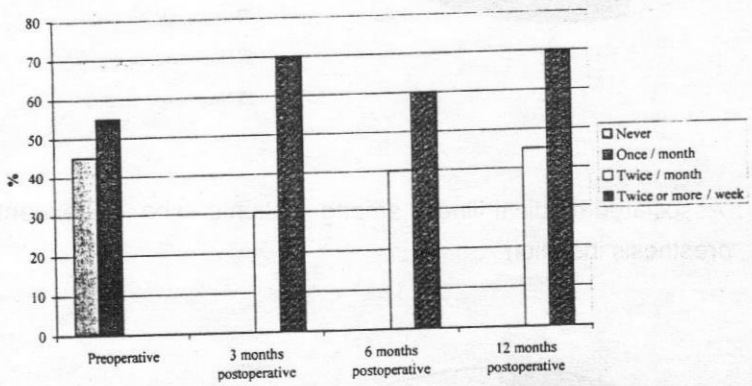


Fig. (5) : Frequency of intercourse or sexual activity before and after penile prosthesis insertion.

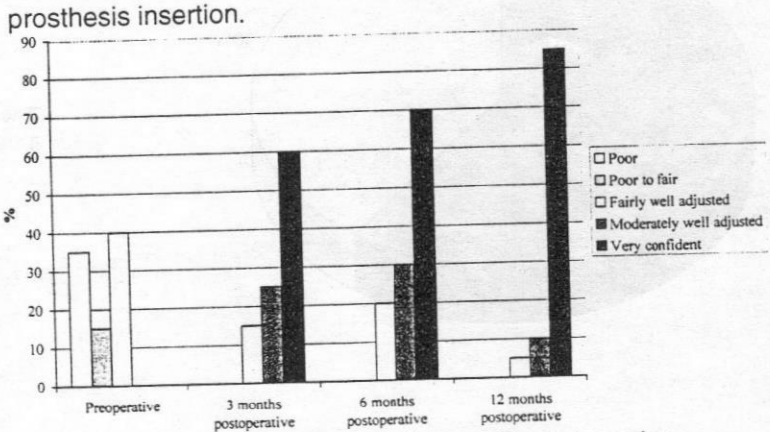


Fig. (6) : Self-esteem before and after penile prosthesis insertion.

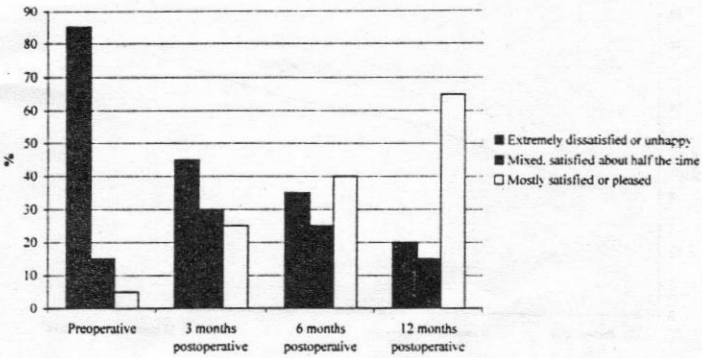


Figure. (7) : Satisfaction when reaching organism before and after penile prosthesis insertion.

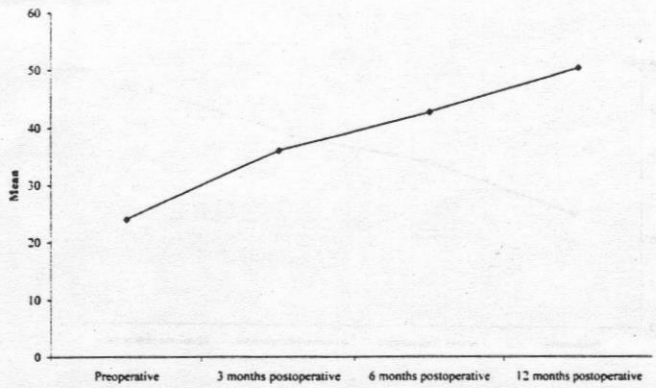


Figure. (8) : Impact of penile prosthesis insertion regarding the total score of psychosexual changes.

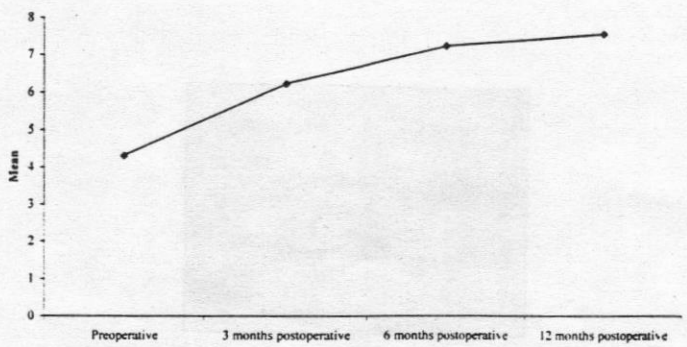


Figure. (9) : Impact of penile prosthesis insertion regarding the frequency of sexual intercourse and penile rigidity (group A questionnaire).

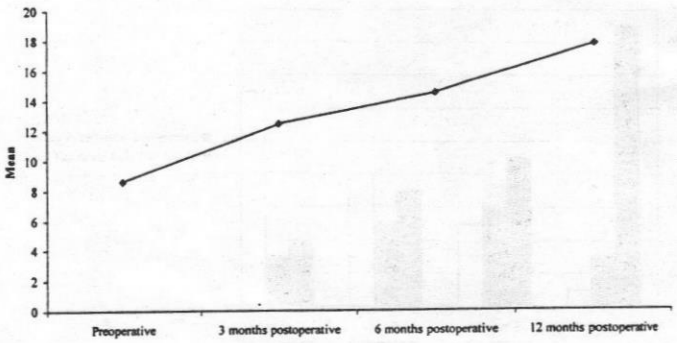


Figure. (10) : Impact of penile prosthesis insertion regarding quality of sexual intercourse (group B questionnaire).

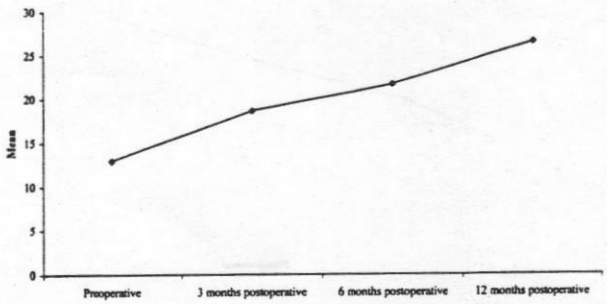


Figure. (11) : Impact of penile prosthesis insertion regarding self esteem and mode (group C questionnaire).

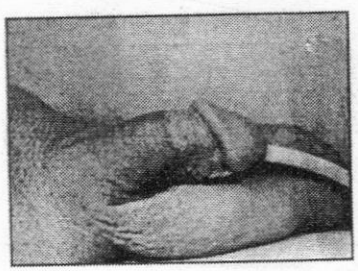


Figure. (12) : Penile catheter inserted preoperatively.

Figure. (13) : Undersurface of the penis and penoscrotal junction. The glans is fixed by a stitch to the anterior abdominal wall

Figure. (14) : Penoscrotal skin incision (about 2 inches) along the median raphen.

Figure. (15) : Incision of dartos muscle and fascia in the same line of the skin incision.

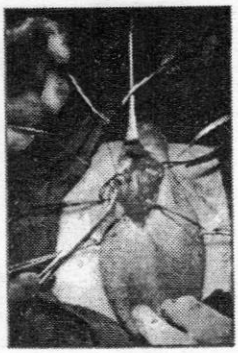


Figure. (16) : Stay suture in right corpus cavernosum

Figure. (17) : Application of graduated Hegar's dilator distally in the corpus cavernosum starting with no. 10 diameter.

Figure. (18) : Application of graduated Hegar's dilator proximally in the corpus cavernosum starting with no. 10 diameter.

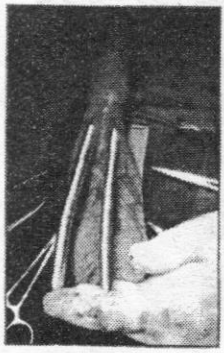


Figure. (19) : Two Hegar's dilators of the same size applied in the distal part of both corpora cavernosa.

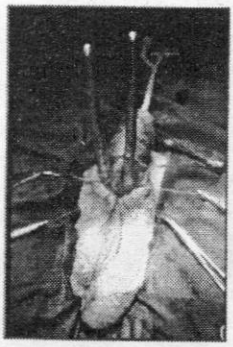


Figure. (20) : Two Hegar's dilators of the same size applied in the proximal part of both corpora cavernosa.

Figure. (21) : Measurement of the corporal lengths by the sizer.

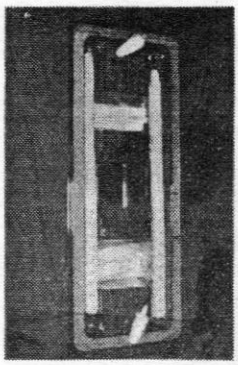


Figure. (22) : Penile prosthesis before application. (Accu-Form type of Mentor Corporation).

Figure. (23) : Application of the penile prosthesis: the left completely applied and the right applied proximally.

Figure. (24) : Application of penile prosthesis: the right applied distally.

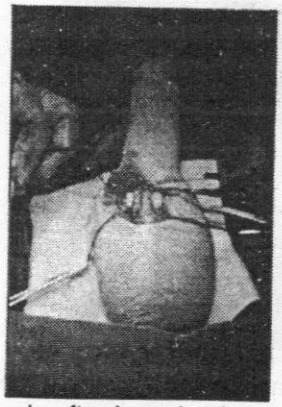


Figure. (25) : Penile prosthesis after insertion into both corpora cavernosa.

Figure. (26) : Closure of dartos muscle and fascia.

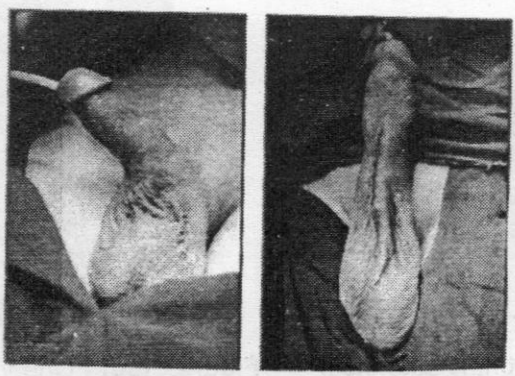


Figure. (27a) : Penis after insertion of penile prosthesis and slsure of skin m (ventral aspect).

Figure. (27b) : Penis after insertion of penile prosthesis and closure of skin (lateral aspect).

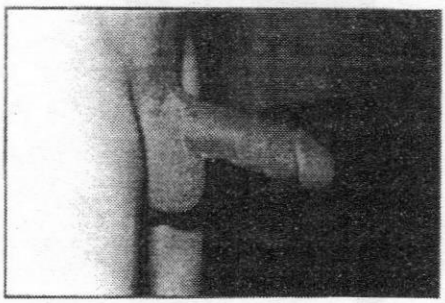


Figure. (28) : Lateral view of the penis one month after insertion of penile prosthesis.

Figure. (29) : Six months after insertion of penile prosthesis.

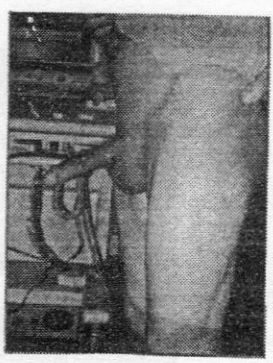
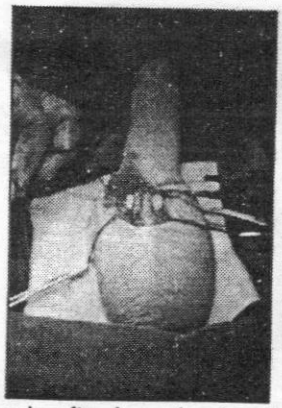


Figure. (30) : One years after insertion of penile prosthesis.



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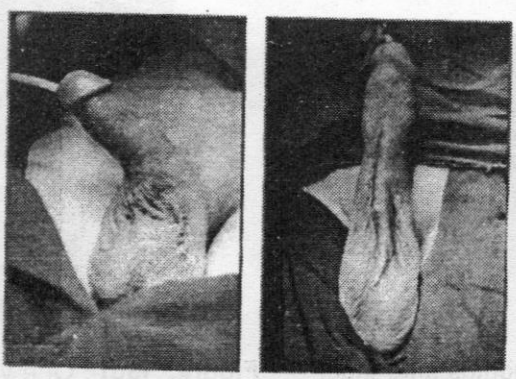

Figure. (27a) : Penis after insertion of penile prosthesis and slsure of skin m (ventral aspect).

Figure. (27b) : Penis after insertion of penile prosthesis and closure of skin (lateral aspect).

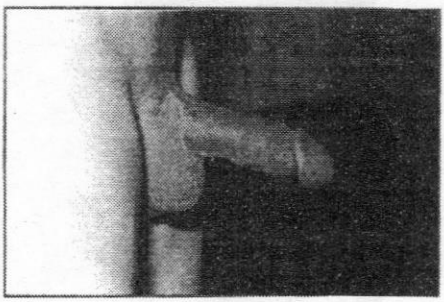

Figure. (28) : Lateral view of the penis one month after insertion of penile prosthesis.

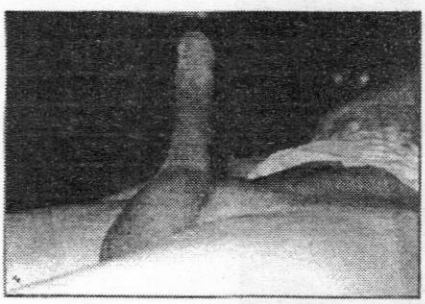

Figure. (29) : Six months after insertion of penile prosthesis.

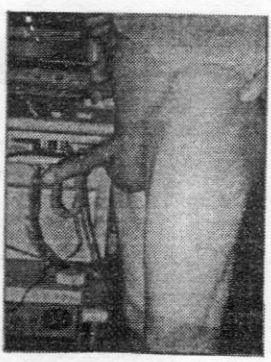

Figure. (30) : One years after insertion of penile prosthesis.

Discussion:

Erectile dysfunction (ED), which has replaced the term impotence since the National Institute of Health (NIH) Consensus Conference in 1988, is defined as the consistent inability to obtain and/or maintain a penile erection sufficient for satisfactory sexual relations[2]. ED is a condition with profound psychological consequences and may interfere with a man's overall well-being, self-esteem, and interpersonal relationships[3].

In the present study, 20 patients presented with ED. All of them underwent penile prosthesis insertion after fulfilling the selection criteria offered by[11], which suggested that the treatment of ED should begin with the least invasive, least morbid treatment, including vacuum constriction devices, pharmacological manipulation, and intracavernosal injections, followed by penile prosthesis in patients who fail to respond to these treatments or find them unsatisfactory[11]. Today the less invasive alternatives have multiplied, and include oral medications (as Sildenafil "Viagra") used immediately before coitus and the medicated uretheral system for erection (MUSE).

Our patients chose a prosthesis after the inflatable and semirigid models were demonstrated and explained. All patients chose the semirigid prosthesis. The Mentor Corporation malleable and Acu-form models were used. Postoperative follow up was continued for one year for all patients.

The increasing incidence of ED with age was noticed by Kinsey in 1948: I of 50 patients at age of 40 but 1 of 4 by age of 65 were impotent[12]. A recent study reported from the Massachusetts Male Aging Study showed a combined prevalence of minimal, moderate, and complete impotence in 52% of men aged 40 to 70 years. The prevalence of complete impotence tripled from 5% to 15% between the ages of 40 and 70 years[13]. In our study, the age of patients ranged from 18 to 59 years with a mean age of 46.55 years. Out of the 20 patients, 2 patients were 28 and 30 years. Theses 2 patients presented with primary ED, which explains the younger lower limit of the range of age (28 to 59 years).

No special habits were recorded in 35% of our patients, while 50% of patients were smokers and 5% were alcoholic. This is in agreement with[13],

who reported that cigarette somking was associated with a greater probability of complete impotence in men with heart disease and hypertension.

The associated medical illness in our patients were: diabetes mellitus (DM) in 30% of patients, hypertension in 15%, hypertension and cardiac ischaemia in 15%, cardiac ischaemia alone in 5%, hypertension and DM in 5% and neurological trauma in 5% of patients. DM, although the most common endorinologic disorder, causes ED through its vascular, neurologic, endothelial, and neurologic complications rather than through hormone deficiency per se as reported by[12]. DM with its related vasculopathy is associated with a higher incidence of impotence at all ages compared to general population. The prevalence of impotence in all-comer diabetics has been variably estimated at between 35% and 75% as reported by[14].

Vascular disorders including hypertension and cardiac ischaemia as a risk factor for ED were confirmed by[15], who reported that analysis of 400 impotent men, demonstrated that 80% of these men had physiokogic abnormalities and that vascular risk factors were more common in this group compared to the general population.

An improvement in satisfaction with sexual activity after penile prosthesis insertion was observed and documented in our study. Before penile implant surgery, all patients [20] reported being extremely dissatisfied or unhappy with their sex life. Of the 20 patients, 10% (2 of 20)) reported being extremely dissatisfied or unhappy with their sex life at 3 month, and no patients reported extremely dissatisfied or unhappy with their sex life at the 6-month and 12-month follow-up visits. Patients' satisfaction ratings of mostly satisfied or pleased with their general sex life were present in 70% (2 of 20), 85% (17 of 20), and 85% (17 of 20) of patients at 3, 6, and 12 months postoperatively respectively. This is in agreement with the results reported by[16], who mentioned that 85% of their patients were mostly satisfied at 6 and 12 months after penile prosthesis insertion. Our results are not as high as the results reported by[1], who reported that patients satisfaction ratings of mostly satisfied or pleased with their sexual life were present in 77.1%, 91.4% and 91.4% at 3, 6, and 12 months penile prosthesis insertion. Our results are also not as low as the results of [17], who re-

ported that 60.3% of their patients were satisfied after penile prosthesis insertion. Our study showed increase in the level of satisfaction with time, presumably due to adjustment by the couples to the prosthesis. Also, we have not encountered any postoperative complications after penile prosthesis insertion in our patients up to one-year follow up.

There was an increase in the frequency of sexual intercourse or activity. Before penile prosthesis surgery, 45% of patients (9 of 20) reported not having sexual intercourse within the previous month, with 55% (11 of 20) reporting that they had intercourse or activity less than two times per month. After prosthesis implantation, 70% of patients (14 of 20) at 3 months, 60% of patients (12 of 20) at 6 months, and 70% of patients (13 of 20) at 12 months after surgery were having sexual intercourse at a rate of two or more times per week. The results of the present study are in contradiction to results reported by(16), who mentioned that 33.3% and 53.8% of their patients were having an intercourse at a rate of one or more times per week at 6 and 12 months postoperatively respectively. The cause of this contradiction may be due to the higher complication rate reported by the authors. However our results are in agreement with(1), who reported that after penile prosthesis surgery, 62.8% of patients at 3 months, 60% of patients at 6 months and 62.8% of patients at 12 months were having intercourse at a rate of two or more times per week.

Satisfaction when reaching orgasm was also compared before and after penile prosthesis surgery. Before implant surgery, 5% of patients (1 of 20) were pleased with their orgasm, compared with 25% (5 of 20), 40% (8 of 20), and 65% (13 of 20) of patients being pleased with their orgasm at 3, 6, and 12 months after prosthesis implantation, respectively. 35% of our patients were not satisfied when reaching orgasm at 12 months after surgery, this is because it may take up to 1 year before the patient will be able to relax enough to reach a climax with the prosthesis in place. Prolonged foreplay to achieve greater intimity will help hasten the return. The patient should be stressed preoperatively that erection has nothing to do with libido or orgasm(5). Our results are comparable with the results of(1), who reported that before prosthesis implantation, 5.7% of their patients were pleased with their orgasm, com-

pared to 31.4%, 31.3%, and 31.4% of patients being pleased with their orgasm at 3, 6, and 12 months after surgery respectively. (17), reported an improved ability to reach orgasm after implant surgery by 29% of patients, while no change in orgasmic function was reported by 47% of patients.

Self-esteem was noted to increase quickly. Before penile implant surgery, 35% of patients (7 of 20) reported having very low self-esteem, and no patients were very confident in regard to their sexual potency. At 3 month after penile implant surgery, no patients reported having poor self-esteem, and 60% (12 of 20) reported being very confident, with high self-esteem after using their penile prosthesis. At 6 months and 12 months after surgery, the high self-esteem rate increased to 70% (14 of 20) and 85% (17 of 20), respectively. Our results are in agreement with the results reported by(1), who reported improvement in self-esteem by 68.6%, 71.4% and 85.7% of their patients at 3, 6, and 12 months after penile implant surgery.

Although regarded as a benign disorder, impotence has a profound impact on the quality of life of many men(13). Impotence has been shown to lead to depressive symptoms. Low self-esteem and other signs of psychological distress(4). One goal of our study was to evaluate whether there is a significant change in the psychosexual profile of patients with ED who are candidate for semirigid penile prosthesis implantation. This was done by measuring psychological changes to document variability between preoperative and 3-month, 6-month, and 1-year postoperative questionnaire ranking. There was significant improvement of the total score of psychological well-being between the preoperative (baseline) and 3-month postoperatively, between 3-month and 6-month postoperatively as well as between 6-month and 12-month postoperatively. These changes demonstrate considerable psychosexual improvement in these patients after undergoing surgery for insertion of semirigid penile prosthesis. (1) also reported a significant improvement of psychosexual profile (well-being) in their patients who underwent penile prosthesis insertion between the preoperative and 3-month postoperatively, as well as between 3-month and 6-month postoperatively. However their study in contradiction to our study, failed to document significant improvement between 6-month and 12-

month postoperatively.

Persistent improvement was noted when we analyze the group of questions regarding frequency of intercourse and penile rigidity (group A questionnaire), quality of sexual intercourse (group B questionnaire), and self-esteem/mode (group C questionnaire).

As regards the impact of penile prosthesis insertion on the frequency of intercourse and penile rigidity, our study showed a significant contrast between preoperative and 3-month postoperative scores, between 3-month and 6-month postoperative scores, and between 6-month and 12-month postoperative scores. There fore, increasing the frequency of sexual intercourse can be used as a global index of therapeutic success of semirigid penile prosthesis as efficacious treatment approach. In addition, increased sexual activity was accompanied by a decrease in patient concern about obtaining and maintaining an erection. (13) found that a man who has experienced a recent pattern of ED night be expected to be anxious, depressed, and lacking self-esteem. In our study, there was a significant abrupt improvement in self-esteem and feeling of depression, anger and anxiety related to sexual intercourse after penile prosthesis placement at 3 and 6 months postoperatively, which was maintained up to one year. Therefore, the loss of ability to have erections means more than loss of ability to have sexual intercourse; it also means loss of manhood(1). This finding is in agreement with other published repots by (1,18,19), which established a correlation between sexual potency and quality of life.

Our results also support the observation that penile prosthesis implantation leads to increased satisfaction with sexual intercourse. Although no significant changes occurred in the patient ability to ejaculate and experience climax, we did observe an increase in patient satisfaction regarding orgasm. It seems like a prosthesis does lead to renewed feeling of confidence and wholeness.

In the present study, septal crossover occurred in 2 patents during insertion of the penile prosthesis. Septal crossover occurred distally in onr patient and proximally in the other one. Both were corrected by rerouting the dilator into the proper locations

and placement of the penile prosthesis was continued. No postoperative complications were recorded in our patients up to one-year follow up postoperatively.

A criticism of the present study is that we did not address the partner's responses before and after penile prosthesis insertion. Several studies have demonstrated that partner satisfaction rates appear to be lower than the mechanical success of the device itself. (17), reported that overall satisfaction rates with prosthesis placement were 83.5% for the patient and 69.8% for the partner. In another study by(20), satisfaction rates were 80% for the patient and 60% for the partner. (5), have shown that the most important factor for the patient and partner satisfaction is preoperative education that may limit the development of unrealistic expectations after implantation and improve psychosexual outcome.

A limitation of the present study was the relatively small number of patients evaluated from a single department. Although the sample was small, statistically significant improvements were consistently seen after prosthesis placement. On a short-time basis (up to one year after insertion), placement of semirigid penile prosthesis is associated with a significantly increased improvement in patient satisfaction. Whether this satisfaction and psychosexual well-being will be maintained for longer than one year needs to be determined as well.

Conclusion :

Despite the shift to medications and vacuum erection devices to restore erectile ability, penile implants are still widely chosen option for managing ED. Patients with poor penile blood supply or anatomic abnormalities and those who fail conservative treatment will require implant insertion.

Technical advances in prosthetics and improved surgical techniques have led to the increased use of penile prosthesis in the rehabilitation of men with ED.

In our study, we were able to document psychosexual improvement up to one year after insertion of semirigid penile prosthesis. Semirigid penile prosthesis placement was associated with a significantly increased improvement in patients satisfaction.

Penile prosthesis surgery did not merely make sexual intercourse possible, but also reduced patient suffering regarding sex life.

A longer term psychosexual study with a larger number of patients that also evaluate other available treatment options and sexual partner satisfaction should be done to determine the ultimate changes in psychosexual status of patients undergoing treatment for ED.

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تقييم إستعمال دعامات القضيب من نوع متوسط الصلابة فى حالات العنة عند الرجال

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ط. تامر يوسف (٥)

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قسم الجراحة العامة (٣) قسم التحاليل الطبية (٤)
- كلية الطب - جامعة المنصورة

أجريت هذه الدراسة فى وحدة جراحة الغدد الصماء ببمستشفى المنصورة الجامعى فى الفترة من يونيو ١٩٩٨ إلى مايو ٢٠٠٠م على عشرون (٢٠) مريضاً يعانون من العنة أو عدم القدرة على الانتصاب وذلك نتيجة أسبابيب متنوعة بعد إستبعاد الحالات الناتجة عن الحالة النفسية أو عن إختلال فى النظام الهرمونى بالجسم . تم تركيبب دعامات إصطناعية فى القضيب للعشرين مريضاً الذى إشتملهم الحث.

في هؤلاء المرضى تم عمل :

١- دراسة كاملة للتاريخ المرضى

٢- فحص إكلينيكى كامل.

٣- فحوصات إشتملت على قياس نسبة الانتصاب ليلاً عند هؤلاء المرضى عن طريق جهازى الريجيسكان والريجيكومب.

٤- قياس نسبة هرمونات الذكورة فى الدم.

٥- أشعة موجات فوق صوتية ملونة .

تم إعطاء علاج تحفظى لهؤلاء المرضى وأثبت عدم فاعليته. اشتمل العلاج التحفظى على إستخدام أجهزة التفريغ الهوائى حول القضيب (أجهزة الفاكيوم) وأقراص الفياجرا والحقن الموضعى فى القضيب.

وقد قمنا فى هذا البحث باستخدام الدعامات النصف صلبة (سيمى رجيد) من إنتاج شركة منتور الأمريكية.

تم متابعة جميع المرضى بعد إجراء الجراحة فى عيادة جراحة الغدد الصماء بمستشفى المنصورة الجامعى عند شهر وثلاث شهور وستة شهور و ١٢ شهراً من تاريخ إجراء العملية وقد اشتملت المتابعة على فحص إكلينيكى لتسجيل أى مضاعفات بعد الجراحة وبحث مكون من ١٢ سؤال يقوم المريض بإجابتهم عند كل زيارة وقد تم تسجيل جميع الإجابات.

هذا وقد إتضح من دراسة المرضى الذين يعانون من العنة ودراسة آثار إستعمال الدعامات الاصطناعية للقضيب على الآتى :

لم يحدث أى مضاعفات جراحية للمرض بعد تركيب دعامة القضيب .

بالرغم من الإتجاه العام لاستخدام الطرق العلاجية الأكثر تحفظاً فى علاج حالات العنة، مازلت دعامات القضيب تشكل إختباراً أساسياً للمرضى الذين يفشل معهم العلاج التحفظى بسبب تصلب شرايين القضيب أو تسريب شديد الدرجة فى أوردة القضيب أو المرضى الذين يفشل معهم العلاج النفسى.

التقدم التكنولوچى فى صناعات دعامات القضيب الاصطناعية أدت إلى نتائج مرضية ومشجعة للجراح والمريض فى أن واحد.

قد أثبتت الدراسة تحسن كبير وملحوظ فى التغيرات النفسية المصاحبة لمرضى العنة عند الرجال فمن المتابعة للمرضى قبل وبعد إجراء الجراحة تبين تحسن ملحوظ فى القدرة على الاستمتاع بالعملية الجنسية وفى الثقة بالنفس والحالة المزاجية العامة.

أن دعامات القضيب الاصطناعية كعلاج العنة عند الرجال لاتؤدى فقط إلى القدرة على ممارسة العملية العملية الجنسية ولكن إلى تقليل المعاناة والإحباط الذى يعانى منه هؤلاء المرضى بالنسبة للعملية الجنسية.

لكل هذا يوصى البحث بإستخدام دعامات القضيب الاصطناعية كعلاج لحالات العنة عند الرجال بعد تجربة العلاجات التحفظية أولاً حيث أنه علاج مثالى فى مثل هذه الحالات.