Original article

Malleable Penile Implant As An Optional Treatment For Erectile Dysfunction . Our Experience InPrince Hussein Ben Abdulla II Center Of Urology And Organ Transplant

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Abstract

Background: To Assess satisfaction rate , outcome ,and complications of using malleable penile implants as a treatment of erectile dysfunction .

Methods: a study was carried out in Prince Hussein Bin Abdullah II centre from 2010 to 2015 on 75 patients who underwent penile implants . We used a questionnaire for erectile dysfunction on those patients and compared their satisfaction before and after the operation .

Results: All patients and their partners were satisfied with the results which improved their quality of life , an exception was with seven patients who had psychological rejection to implant which was removed after 2 weeks from operation .

Conclusion: It is a simple invasive procedure with high rate of success (95%) and minimal complications and contraindications , so it can be considered as definite treatment for erectile dysfunction in most cases . But psychologically preparing the patient is recommended in this procedure .

Keywords: *Erectile Dysfunction , penile prosthesis, satisfaction*

Introduction

Erectile dysfunction could be defined as inability of a person to start or maintain erection during intercourse(1)(2) , it is one of the popular problems that affect the life style of men , but at the same time , it is difficult to assess how much it is common because many people are shy to seek help for this problem , which can lead to relationship problems (it is one of the most common causes of divorce) , inability to get partner pregnant , etc. (3).

There are many causes for erectile dysfunction , which can be divided into 2 main groups ; physical causes , including : heart disease , HTN , DM , obesity , smoking , drugs , alcohol , peyronies disease and Parkinson disease , and psychological causes like depression and stress (3) , (5) , (6) .

The male sexual arousal is a complex physiological process that starts with stimulations , these stimulations cause the periventricular nucleus in the brain to start sending signals down the spinal cord to nerves in the penis , the nerves in the penis release a chemical called nitric oxide , which cause muscle fibers in the corpus cavernosa to relax , the signals also tell muscle fibers in arteries that supply blood to penis to relax which lead to large rush of blood to the organ , as the corpora cavernosa chambers inflate , the tunica sheath around the penis begins to tighten which cuts off the veins that transport blood out of the penis , now blood is trapped in the chamber causing an increase in pressure in penis during an erection , So any problem affecting one of these steps will lead to erectile dysfunction (3) (4) (7) .

There are major treatment options for erectile dysfunction, starting with first line options which include psychotherapy and oral therapy like

(Viagra) , invasive options like vaccum devices and intracavernosal injection of prostaglandins that can be performed if the first line options fail , followed by operative methods with penile implant (8) (9) .

Penile implants are primarily used for patients suffering from erectile dysfunction due to causes previously mentioned ,who don't respond to other treatment types or in whom other treatment options are contraindicated .

Mainly there are two types of penile implants : semi rigid and inflatable .

This study was conducted to explore our experience in semi rigid penile implants operations and to assess the patient's satisfaction .

Method

This retrospective study was conducted in the Department of Urology at Prince Hussien Bin Abdu Allah II from 2010 – 2015 . 75 patients who underwent penile implant operations were included in this study .

Data were retrieved from the 75 patients files and direct communication with patients and their partners , patients underwent a Questionnaire to assess their erectile function before and after the surgery .

We used the international index of erectile function (IIEF-5) Questionnaire because it is easy , short , effective .

1. How do you rate your **confidence** that	Very low 1	Low 2	Moderate 3	High 4	Very high 5
2. When you had erections with sexual	Almost never/never	A few times (much less	Sometimes (about half	Most times (much more	Almost always/always
3. During sexual intercourse, **how**	Almost never/never	A few times (much less	Sometimes (about half	Most times (much more	Almost always/always
4. During sexual intercourse, **how**	Extremely difficult 1	Very difficult 2	Difficult 3	Slightly difficult 4	Not difficult 5
5. When you attempted sexual	Almost never/never	A few times (much less	Sometimes (about half	Most times (much more	Almost always/always

- IIEF-5 scoring :
- The IIEF-5 score is the sum of the ordinal responses to the 5 items.
- 22-25 : No erectile dysfunction
- 17-21 : Mild erectile dysfunction
- 12-16 : Mild to moderate erectile dysfunction
- 8-11 : Moderate erectile dysfunction
- 5-7 : Severe erectile dysfunction

BMI	**number**
19/8>	42(%10/5)
26-19/8	183(%45/8)
29-26/1	83(%20/8)
29<	92(%23)

Beside the Questionnaire , patient's information included patient profile , causes of erectile dysfunction ,which types of treatment were used before surgery and complications .

Results

A total of 75 patients were included in this study , the mean age was 54 years , 35 patients had erectile dysfunction due to DM , 20 patients due to cavernosal venous leak and 20 patients developed erectile dysfunction after radical cystoprostatectomy due to malignancy .

According to results of the Questionnaire IIEF-5 , 60 patients had severe erectile dysfunction and 15 patient had moderate erectile dysfunction before surgery . All patients had normal erectile function after the implantation .

Regarding other types of treatments before penile implants , 20 patients underwent venous embolization for cavernosal venous leak , 20 patients were using vaccum devices and medical treatment for 3 years and 35 patients preferred surgery as first choice of treatment .

As any other surgery , complications happened , 5 patients developed penile abscesses treated with incision and drainage , 4 patients had urinary obstruction treated with folys catheter insertion and 7 patient had psychological rejection after 2 weeks from implantation treated with removal of implant .

At the end patients and their partners were satisfied from the results .

Discussion

In this study , we have shown that erectile dysfunction is a common problem that affects a large part of any population , we also explored social and psychological complications and how life style is affected , following that we analyzed major causes and types of treatment as medical or more invasive .

starting discussion with advantages , we have to mention that the semi rigid penile implant procedures are simple , easy , short and safe procedures that can be done by most of urologists , one of the important benefits of these procedures is that they can be done under local anesthesia as was concluded in the mentioned study , 93% of patients were operated under local anaesthesia by penile block , so it is optimal for old age patient who are at high risk for general anesthesia which is required for other types of implant insertion (1) , (10) .

In addition to being an easy and simple procedure , It is a day case surgery , with almost no contraindication for insertion the semi rigid implants and very rare chances of malfunction compared with other types of implants (1) , (11) .

Regarding the surgical technique , a circumferential incision is done , then degloving of the penile skin is carried out (in other centers degloving is not always used) .

Then a longitudinal incision is made in the corpus cavernosum on both sides and then dilators are used reaching the pubic symphysis proximally and the glans distally , Figure (1) .

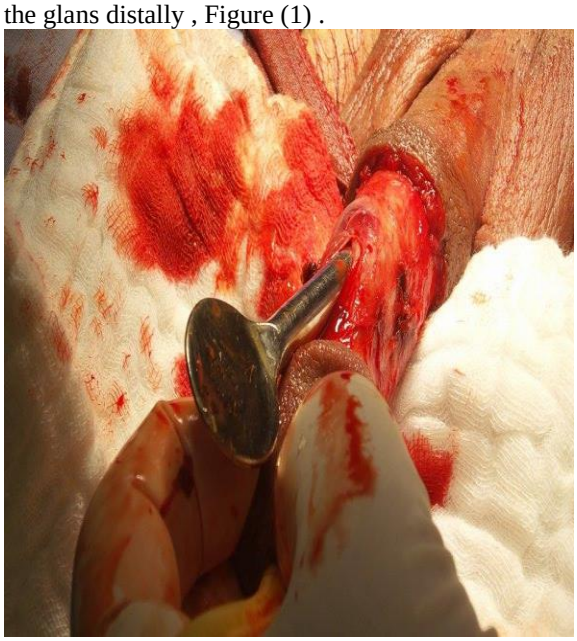

Figure 1 : Longitudinal incision in corpus cavernosum done on each side then using dilators (12 – 30 inch) to dilate the tract from pubic symphysis proximally up to glans distally .

then we measure the length of the corpus cavernosa using circular device from the symphysis pubis up to glans , then intra-operatively we prepare the implant and insert it into the corpus cavernosa , before that we irrigate the incision by anti-biotic (gentamycin for example) and then close the wound (figure 2) .

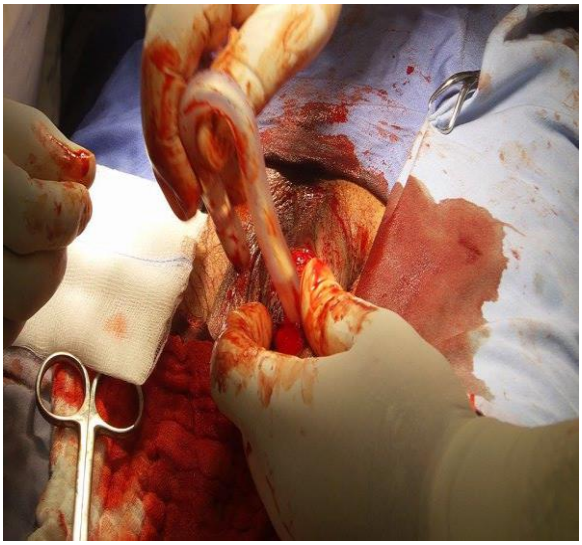

Figure 2 : Insertion the implant in the corpus cavernosum .

In addition to the simple surgical procedure the satisfaction rate is high compared to other types of treatment like medical or intracavernosal injection therapy (12) (13) (14) . In a study done in China on 224 patients who suffered from erectile dysfunction , the overall satisfaction rate from penile prosthesis was 89% and there were no differences between the malleable implant and the inflatable implant in partner survey (15) .

But as in any surgical procedure , complication happened , in our 75 patients 5 patients had penile abscesses treated by incision and drainage , one patient who was uncircumcised developed a serous collection around the glans that was treated by incision and drainage . Some researches approved that infection could be decreased by using antibiotic coated penile implants , skin preparation , draping and intra-cavernosal antibiotics irrigation (16) , (17) , (18) . Most studies found that the source of infection was the skin flora and the most common microorganism was Staphylococcus epidermidis (19) .

seven patients developed psychological rejection after 2 weeks from operation and seeked to remove the implant . That lead us to strongly recommend psychologically preparing both partners before surgery and follow up after it , so as not to overestimate the expected results from the implant (20) .

Finally the cost of the implant is considered an important issue , due to the low average income in most of our population , so the semi rigid penile implant compared with other types of implant (inflatable) is cheaper and available for most of patients , even if we compare the semi rigid implant to medical treatment it will be more economic for patients as published in a study done in Great Britan as we see below (1) , (10) .

The cost of various treatment options available for erectile dysfunction

Penile prosthesis * :
+ semi-rigid : £ 690 – 760
+ inflatable : £2438 – 3392
Alprostadil ** :
+ intra-cavernosal (10 µg) : £ 1848
+ intra-urethral (250 µg) : £ 2388
Viagra (50 mg) ** : £ 1158
Vacuum device : £ 250
* Price for device only , and does not include cost of operation .
** Based on use four times per month over 5 years .

Conclusion

Simi Rigid penile implant is a highly recommended solution to erectile dysfunction problems looking to cost issue , low complication rate and simple surgical procedure and the high satisfaction rate in both partners .

Psychological preparation is important to avoid any over estimation and psychological rejection in future .

Invasive treatment could be the first line treatment in patients who complain of severe erectile dysfunction .

Penile implant is the gold standard for treating erectile dysfunction if medical treatment failed .

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