Research Article

Surgical outcomes and complications of malleable Penile prostheses in patients with erectile dysfunction

Alayman H. Fathy Hussein, Mamdouh A. Abdel Raheem, and Abdelsalam A. Abdalla.
Department of Urology, Minia Faculty of Medicine, Minia University, Minia, Egypt.

Abstract
Objective: To evaluate surgical outcome, complications, and patients satisfaction with the malleable penile prosthesis with refractory erectile dysfunction (ED). Patients and methods: A total of ٤٢ patients who underwent the insertion of malleable penile prostheses were evaluated for surgical outcome and complications at our institute between December ٢٠١٢ and December ٢٠١٦ were reviewed. **Results:** Of the ٤٢ patients, who received malleable penile prostheses at our institute, ١٢ were diabetics and ٩ ad Peyronie's disease, ٤ were hypertensive, and ٣٢ were smoker mean age ٥٤.٥±٧and median follow-up ١٢ month. Complications included: cross over (٢/٤٢), superficial wound infection (١٢/٤٢), post-operative pain discomfort (٧٢٪), and penile prostheses infection (٥.٥٪). Moreover, using the (EDITS) questionnaire which has ٣months, ٦monthes to ٩months ٧٦.٩±١٨, ٨٠.٧±١٧and ٨٤.٣±١٧ respectively. **Conclusion:** malleable penile prostheses are associated with low complication and high satisfaction rates. DM correlated with increased Incidence of superficial infection.

KeyWords: penile prostheses, erectile dysfunction

Introduction
Penile prosthesis results have been satisfactory. Carson and colleagues[١٧] reported a satisfaction rate of more than ٩٠% with the AMS ٧٠٠CX prosthesis, and Levine and coworkers[١٨] reported similar patient/ partner satisfaction results for the two-piece Ambicor inflatable penile prosthesis Recently, Mulhall and colleagues used validated instrument including the International Index of Erectile Function (IIEF) and the Erectile Dysfunction Index for Treatment Satisfaction (EDITS) at ٣-month intervals following implantation of inflatable penile prostheses. This study of two- and three-piece prostheses followed patients for I year to assess outcomes. These investigators demonstrated that there was a continued improvement in scores for the IIEF and EDITS stabalized ٩ to ١٢ months following surgery. All variables, including erection, ejaculation, orgasm, and overall sexual satisfaction. Improved above baseline values at ١ year post surgery. At ٣ months following surgery, however, results were less satisfactory, suggesting that post-operative counseling and encouragement of patients is important to obtain ultimate satisfaction and positive outcomes at ٩ to ١٢ months. In the long-term multicenter study of the AMS ٧٠٠CX three-piece inflatable prosthesis, with a median follow-up of ٤٨ months, ٧٩٪ of patients were using their device at least twice monthly and ٨٨% would recommend the prosthesis to a friend or relative[١٨].

The most significant and severe complication following implantation of any prosthetic device is device infection[١٩]. Penile prosthesis infections result in the most morbidity of any postoperative outcome, often resulting in device loss and complete loss of erectile function. Infections are most commonly sustained within the first ٦ months following surgery and are most often caused by S epidermadis and other gram-positive organisms. Because the prosthetic devices are connected with a

tubing system, colonization and infection in one portion of the device is expected to affect all portions of the implant Bacteria such as staphylococci produce a glycocalix or biofilm that surrounds the prosthetic device.

Methodology

Our study is a prospective clinical study included ٤٢ patients, with severe ED who attended the outpatient andrology and urology clinic at Minia university hospital and urology & nephrology university hospital in the period from (December ٢٠١٢ to December ٢٠١٦).

We initially evaluate the entire patients with erectile dysfunction by medical and sexual history, SHIM questionnaire for ED, and physical examination carried out for all men in the office during the first visit, by this initial evaluation we distinguished patients who had severe ED and failed non-surgical treatment for further evaluation, all patients were underwent to the following:

 Laboratory evaluation done in the form of CBC, LFT, RFT, blood sugar, HbA١c (for diabetic patients), and testosterone (free and total testosterone). Pharmacologic Penile duplex ultrasound done in all patients, Twenty eight patients had subjected to ICI test, A total of ٤٢ patients who underwent the insertion of malleable penile prostheses were evaluated for surgical outcome and complications, patients satisfaction (EDITS) ٣, ٦ and ٩ months.

Results

Mean patient age were ٥٤.٥ ±٧.٣, the duration of ED before surgery was ranged from (٣-٩) years, mean was (٤.٦±٢.٣), Patients had many risk factors and the most prevalent risk factor was smoking (٣٢/٤٢), (١٢/٤٢) patients was diabetic, ٤ patients was hypertensive and Peyronie's disease detected in ٩ patients three of these patients has DM also.

Complication

Intra-operative Cross over detected only in ٢ patients, early post-operative discomfort pain reported in (٧٢%) of cases, Post-operative oedema detected in ٩ patient, three patients had DM and Peyronie's, ٣ had Peyronie's disease only, and the difference in comparison between patients had Peyronie's and other risk factors was statistically significant (p value=٠.٠٠١), superficial infection detected in ٨ patients and mange successfully, five patients with superficial infection was diabetic and the difference in comparison with other risk factors was statistically significant (p value = ٠.٠١) .

Post-operative pa ti ent's satisfaction

We evaluate patients' satisfaction using the Modified Erectile Dysfunction Inventory of Treatment Satisfaction (EDITS) questionnaire which has gradual increase in means from ٣ months, ٦monthes to ٩months ٧٦.٩±١٨, ٨٠.٧±١٧ and ٨٤.٣±١٧ respectively. All risk factors except age were not associated with significant reduction patient sexual satisfaction.

Discussion

Pharmacotherapy is the first-line of treatment for ED, but in a case of failure, penile prosthesis (inflatable or malleable) implantation can be considered[٢٢]. Although, malleable penile prostheses are easy to implant with a low risk of mechanical failure they are associated with a permanent penile erect state, a risk of chronic pain, difficult concealment, and erosion[٢٣]. Patients with DM are more liable to infection than non-diabetics because of polymorphonuclear leucocyte dysfunction with subsequent impairment of the natural phagocytic and bactericidal activity.

Moreover, diabetic-induced microangiopathy results in poor delivery of monocytes and polymorphonuclear leucocytes to the site of infection[٢٤].

As regard Intra-operative complications in our series cross over detected only in ٢ patients, both were distal crossover. We

managed these crossover intra-operatively successfully this results better than done by Ibrahim et al., (٢٠١٥)[٢٥], were corporeal crossover (٥ in SPP, ٢ in IPP), In our study as regard post-operative superficial infection, inspite of NO touch technique (Eid ٢٠١١)[٢٦], in our study the superficial infection occur in ٨(١٩%) patients, and managed successfully, while in a study done by Dhabuwala et al., (٢٠١١)[٢٧], from ٨١ patients, ٨ patients developed infection (٤.٤%), two of the eight patients were diabetic and one of these two was also on corticosteroid therapy for control of thrombocytopenia, In our series we using the Modified Erectile Dysfunction Inventory of Treatment Satisfaction (EDITS) (Althof et al., ١٩٩٩; Levine et al., ٢٠٠١)[٢٨] questionnaire after٣,٦,and ٩months post- operative mean EDITS score was ٧٦.٩±١٨, ٨٠.٧±١٧ and ٨٤.٣±١٧ respectively, in comparing with the data base obtained from Casabé et al (٢٠١٦)[٢٩]overall mean EDTIS score being ٧٧.١٪ and ٧٥.٦٪ for Genesis and Spectra malleable prostheses respectively

Conclusion

According to our results and results of many previous studies suggested that semi-rigid penile prostheses is a safe and effective modality of treatment for patients who had severe ED and failed non-surgical treatment.

Penile prostheses implantation appears to be associated with a low complication rate and good satisfaction of patients in all age groups

No touch technique, and prolonged proper antibiotics correlate with reduce risk of severe implant infection.

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