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Outcome of Malleable Penile Implant and End Stage of Erectile Dysfunction Single Centre Experience

*Mir Abid Jan, Ishan Khan, Kifayat Tariq, Samiullah Opal, Naveed,
and Ikram Samiullah*



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¹Mir Abid Jan, ²Ishan Khan, ³Kifayat Tariq, ⁴Samiullah Opal, ⁵Naveed, and ⁶Ikram Samiullah

¹HOD, Assistant Professor, Andrologist and Urologist, Institute of Kidney Disease, Peshawar, Pakistan

^{2,4,5,6}Medical Officer, Institute of Kidney Disease, Peshawar, Pakistan.

³Assistant professor Institute of Kidney Disease Peshawar, Pakistan.

Corresponding Authors: ²Ishan Khan, ⁵Naveed

Corresponding Authors' Emails: [²ihsandru@gmail.com](mailto:ihsandru@gmail.com), [⁵khan199234@gmail.com](mailto:khan199234@gmail.com)

ABSTRACT

Background: The inflatable penile prosthesis (IPP) is typically the preferred implant for Peronei's disease (PD) and malleable penile prostheses (MPPs) have been discouraged.

Objective: To share experience of malleable penile implant in younger patients at institute of kidney disease Peshawar in a developing country.

Materials and Methods: Total of 24 Patients were included in this study who underwent malleable penile prosthesis surgery from July 2017 till June 2020 were included. They all counseled thoroughly regarding procedure, success statistics, possible complications and post-operative follow up. During follow up any problem if occurred and satisfaction documented. Data analysis done with SPSS version 22.

Results: mean age of 31.7 (27-65) years were included. The most common etiology of ED was vasculogenic (n=10, 41.7%). The comorbidities found were diabetes mellitus and hypertension in 12.5% each (n=3), these patients had no comorbidities (n=18, 75%). The mean size of penile prosthesis was 11.79mm (ranged from 9.5-13mm). We had four patients (16.7%) with unconsummated marriage due to ED. The post-operative problems noted were penile numbness (n=4, 16.7%), retarded ejaculation (n=4, 16.7%), penile pain (n=3, 12.55), hematoma (n=1, 4.2%) and lower urinary tract symptoms (n=1, 4.2%). Most of these patients were fully satisfied (n=15, 62.5%), some were partially satisfied (n=7, 29.2%), only two patients were not satisfied (8.3%) while all patients had their partner satisfaction with malleable penile prosthesis. Inappropriately, patients had presented initially to urologist, rest of all 24 patients were initially treated by quacks, general practitioners, homeopaths, spiritual healers, dermatologists, gynecologists and psychiatrists. All patients had no sense about erectile dysfunction. Patients have idea about discussion of specific field consultant. Their doctor only deal with urology, kidney and bladder pathologies.

Conclusion: Malleable penile prosthesis has great success rate in end point erectile dysfunction with acceptable complication rate. E.D is a global problem. There has been an incredible ignorance in the public about proper referral and management of Sexual dysfunction. Herbal medications are marginally effective and management of erectile dysfunction.

Keywords: *Erectile dysfunction, developing world, malleable penile prosthesis.*

INTRODUCTION

Erectile dysfunction is defined as the inability to attain and/or maintain penile erection which is sufficient for sexual intercourse for at least six months. After premature ejaculation it's 2nd most common male sexual dysfunction [1]. The prevalence of E.D according a meta-analysis is 1-10% and 2-9% men younger than 40 years age and 40 to 49 years age respectively [2]. The first line treatment option for the treatment of E.D is phosphodiesterase type-5 inhibitors, followed by intracavernosal injection as the second line for those who are not responding and not eligible for PDE5 inhibitors [3]. Penile prosthesis is 3rd line option for those who are not suitable for pharmacologic treatment or not responding, and currently considered the most effective way to attain artificial erection for satisfactory sexual intercourse. Successful treatment of erectile dysfunction (E.D) is associated with improvements in quality of life [4-6] though treatment utilization is sub-optimal (3) [7-9]. The current pharmaco-therapeutic researches in E.D focuses on underlying endothelial dysfunction as the root cause for E.D and introduction of phosphodiesterase type 5 inhibitors to potentiate nitric oxide (NO) action and cavernously smooth muscle vasodilation. [10-16] has revolutionized modern ED treatment over the past two decades. As a matter of fact, sex education in Pakistan is a social taboo, so common patients with sexual dysfunction are seen in clinics of quacks, Hakims, spiritual healers [17-22] dermatologist etc rather than being referred early to Urologists.

Prostheses are devices for penile implantation which help in providing rigidity simulating natural erection [23-24]. The technology of implants has advanced which resulted in greater acceptance both on part of physician and patient [25-26]. It has also substantially decreased the rate of complications. It has mainly two categories: the malleable (semi rigid, mechanical) and inflatable which differs in their structure and operation [27-29]. This study will be sharing experience of semi rigid penile implant in patients at tertiary care centre.

MATERIALS AND METHODS

Following the approval of ethics committee, all patients of erectile dysfunction who underwent malleable penile implant surgery in the Institute of Kidney Disease, Peshawar, Pakistan from July 2017 till June 2020 were included. Before surgery details of the procedure, efficacy and possible complications were explained to each patient and informed consent was taken. Patient's bio data, smoking history, any comorbidity, consumption status and post-operative complaints recorded. Patients' efficacy was noted as 1 for fully satisfied, 2 for partially satisfied and 3 for not satisfied terms. The data analysis was done with SPSS version 22 and used the (IIEF-5) rule for the attendance and grade of E.D

The survey consisted of fifteen queries that contained the areas of (M.S.F). These domains are;

- a. Erectile dysfunctions
- b. Orgasmic function
- c. Sexual desire
- d. Intercourse satisfaction
- e. General pleasure

The fifteen -inquiry (IIEF) Survey is confirmed, multi-dimensional, self-administered study that has been found valuable in the clinical valuation of E.D and management results of clinical trials. A total of 0-5 is given to each of the fifteen inquiry that examine the 4main domains of (M.S.F) and E.D, orgasmic function, sexual need intercourse satisfaction

RESULTS

Total of 24 patients were included and the mean age was 31.7 years (Std. Deviation 2.47), ranging from 27 to 35 years. Only one unmarried (4.2%) participant was included while all other were married (95.8%). The mean BMI of these patients was 22.08, with min of 20 and max 27. Cigarette smokers were 13 (54.2%) and non- smokers were 11(45.8%). Common founding to have no co-morbidities 18(75%), diabetes mellitus and hypertension was found in 3 (12.5%) patients each. The etiology of (E.D) found in these patients is shown in figure 1. The mean diameter of penile implant used was 11 mm with smallest measuring 9.5mm and largest measuring 13mm, while length ranged from 16mm to 21mm. Among these patients, 4 (16.7%) had unconsummated marriage and 20(83.3%) had consummated marriage. The patient satisfaction with these implants is shown in figure 2. Spouse satisfaction was found in 23 (95.8%) and only one patient reported partner dis-satisfaction. Post-operative complaints noted were penile numbness in 4(16.7%) and penile pain in 3 (12.5%), while 11(45.8%) patients had no post-operative complaints. Penile implant was removed in one of the patient which was suffering from depression and was unable to have satisfactory intercourse.

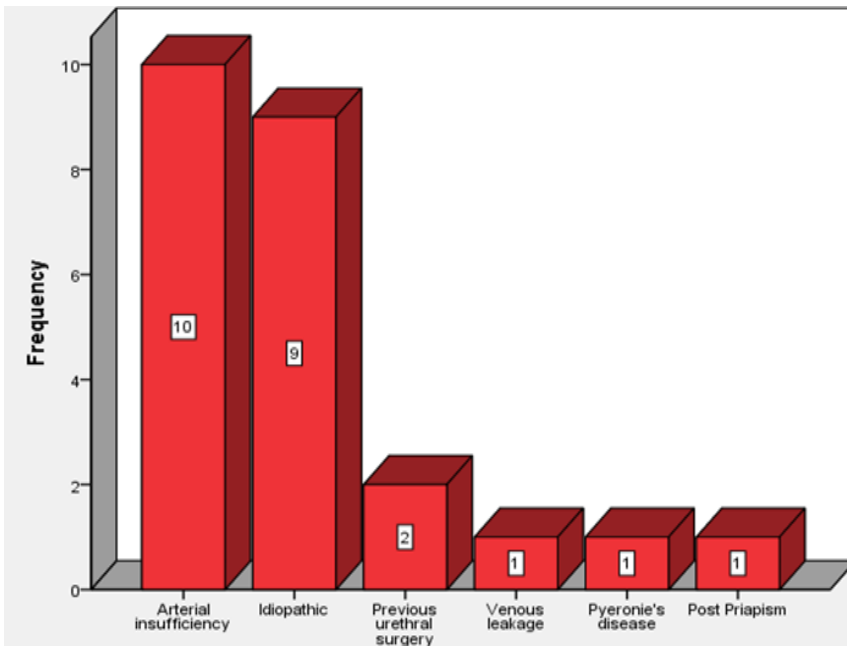


Figure 1: Etiology (E.D)

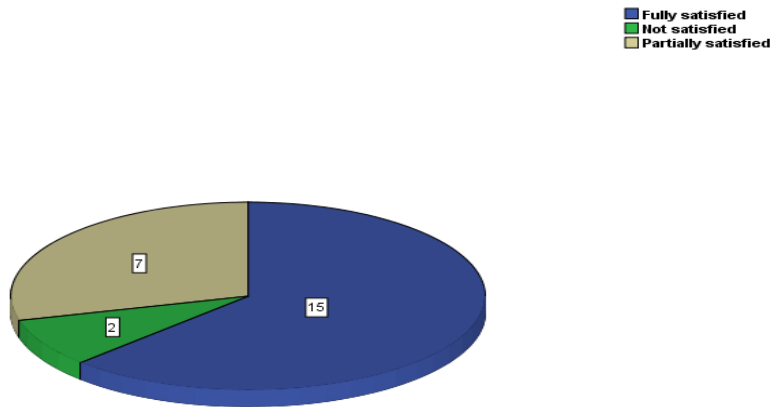


Figure 2: Patient’s satisfaction

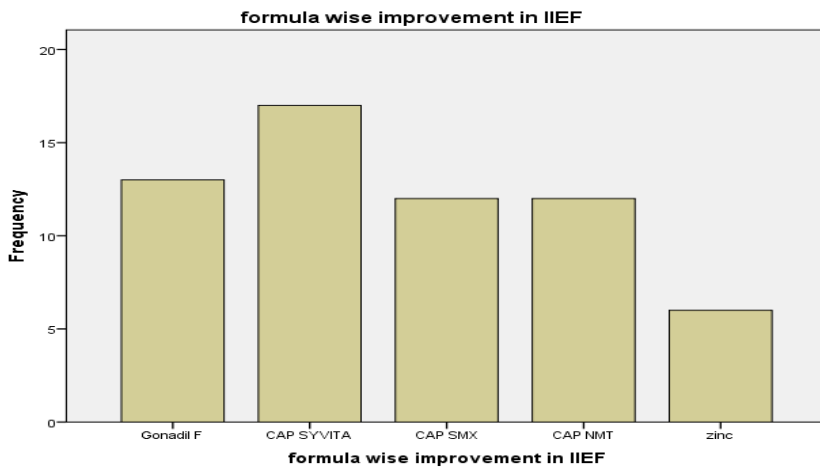


Figure 3: Formula wise improvement in IIEF

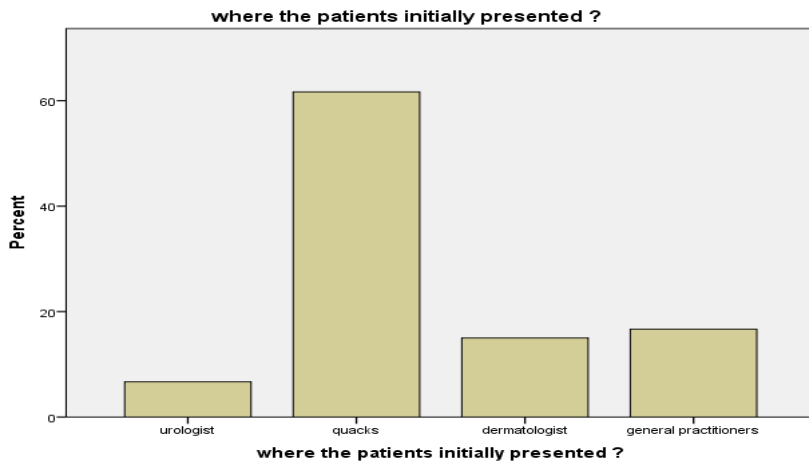


Figure 4: Formula wise satisfaction

DISCUSSION

E.D is difficult syndrome. It affect physical, mental and social health. It can be reason of lackof self-confidence amongst men since it is a disheartening and difficult disorder ^[1-3]. It can be a threat to relations too. E.D have multiple etiology when time it progress. Penile erection is a neurovascular event that rest on the reduction of smooth muscle in the erectile bodies ^[4-5]. The reduction of flat muscle involves the relief of nitric oxide and other intermediaries, which motivate the creation of intracellular cyclic nucleotides that cause relaxation. With the relaxation of corporal smooth muscle, rapid arterial filling begins resulting in engorgement of the sinusoids in the cavernosa and veno-occlusion. This happens due to the compression of the sub tunicalvenules against the tunica albuginea for morethan 40 years. The prevalence of ED in men aged 40-70 years is 52%, with somewhat higher in older than70 years ^[6]. The literature shows that the age of patients with penile implant surgery in different countries is mainly above 50 years. In the study of Hibous et al; the mean age was 56.6 years ^[7]. Jorissen et al; has 58.32 years ^[8]. Mulhall et al; has 56 years ^[9]. Rogel et al; has 60 years and Parikh et has mean age of 68 years ^[10-11].

What this study has dealt with is a younger population who opted for penile implant. The age ranged from 25 to 35, multiple factors are responsible which are contributing in causing this difference. First of all is the cultural and socioeconomic aspect. The age more than 40 years has often completed or near completed their family and for them the sex means fatherhood. More ever, even if they seek treatment for ED, they meant treatment as only medicines^[12]. People have limited awareness about the implant surgery and only young patients who are much concerned about their sexual life after marriage are who often agree with such advanced treatment after failed medications. This could have an impact on the follow up of such young population ^[13-14]. The possible complications and durability of implant will be of much concern as they have a large sexual life left.

The younger men with ED often suffer from vaculogenic type of organic erectile dysfunction. This study found that the vaculogenic type as the most prevalent cause of erectile dysfunction, a similar finding which is found in the following studies. In a study by Caskurlu et al; they found that arteriogenic ED causing 40.5% and venogenic 10%, Donatucci et al; had 72% vaculogenic ED and Karadeniz et al; noticed 45% as vaculogenic etiology ^[15]. The fact that ED and cardiovascular disease are the two clinical presentations of same systemic disease and ED precedes the cardiovascular event, which makes ED as initial sign of subsequent event ^[16]. This has special importance in this young age population who are mainly concerned about theirpenile manifestation of systemic vascular problem. These particular patients need proper counseling about this issue alongside the problem of erection in their subsequent followup.

Cigarette smoking, diabetes and hypertension were the identified as the main risk factors in current study. In study by Ponholzer et al, which included 2896 patients with ED, they found diabetes, hyperlipidemia, lower urinary tract symptoms and hypertension as risk factors ^[17]. In a Korean study by Ahn et al, they had a notice of positive correlation of diabetes, hypertension, heart disease and obesity with ED and Shamloul et al noticed diabetes mellitus, hypertension, obesity, limited physical exercise and smoking as the risk factors. These are the known risk factors which need to be addressed in the management plan of those patients who present early for the treatment of ED for their better outcome^[18].

The common etiological factors for non-consummation of marital relationship with significant psychological and social impact on both the partners are erectile dysfunction, premature ejaculation and vaginismus [22-24]. This study had four such cases which underwent penile implantation after failed initial therapy^[19]. In the studies of Javaad Zargooshi, Mohammad addar and Özdemir et al, they found ED as the cause of un-consummated marriage in 86%, 11% and 10% of cases respectively^[20]. The erectile dysfunction has a known and well established role in such cases to a significant extent. This needs proper management while dealing such patients and always be asked in newly married who present to sexual clinic with the complaint of ED^[21-22]. Penile prosthesis is one the most successful procedure in achieving highly level of satisfaction in patients with erectile dysfunction, moreover the technical advances has reduced the complication to minimum acceptable level^[23-24]. This study had high success rate of penile implant regarding patient and partner satisfaction. Such outcome is almost universal evident from different studies like in the studies of Lindeborg et al; Minervini et al; Carvalheira et al; and Song et al; the satisfaction rate was 85%, 71%, 79% and 89% respectively^[25].

The problems associated with penile prosthesis placement are divided into non-infectious (organ damage, implant malfunctioning etc.) and infectious complications^[26]. A number of factors associated with surgical complication are defined which include; proper patient selection, patient assessment, intra-operative strict protocols and recommended post-operative precautions^[27]. Our experience with prosthesis placement shows penile numbness, retarded ejaculation as the most common complaints while other less frequent problems were penile hematoma and hematuria. In this study, none of the patient had corporal, urethral injury or prosthesis infection. This indicates that the malleable prosthesis is a valuable tool for end stage impotence having low cost compared to inflatable prosthesis with acceptable complication rate^[28].

CONCLUSION

Erectile dysfunction is 2nd most common male sexual health problem after premature ejaculation. The malleable penile implant is the cost effective and successful surgical procedure for patients with end stage ED in the developing countries. Around the incredible unawareness in the community about correct appointment and management of Sexual dysfunction, herbal treatments are slightly effective in management of E.D.

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