Assessment of ejaculatory function in men undergoing malleable penile prosthesis implant surgery

Original Article

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ABSTRACT

Background: Penile prosthesis (PP), or penile implant, is one of the oldest effective treatments for the condition of erectile dysfunction and a Penile implant is always seen as a tool to provide rigidity in the penis with no other effects regarding the ejaculation.

Aim of the study: To assess any change in ejaculatory function after penile prosthesis implantation (PPI)

Patients and Methods: 40 male patients with erectile dysfunction scheduled for malleable penile prosthesis implantation (PPI) were included in this study. The mean age of patients was (52.5 ± 12) years. Patients were married and in a stable relationship. We excluded patients with anejaculation or patients' candidates for re-implantation following a complicated PPI. All patients were asked to sign an informed consent, Stating the intravaginal ejaculation latency time (IELT) before PPI and after six months of regular coitus following the operation. Patients were asked to Fill-in the Index of Premature Ejaculation (IPE). and Premature Ejaculation Diagnostic Tool Questionnaire (PEDT) before PPI and after six months of regular coitus following PPI.

Results: Our study found PPI to increase ejaculation latency in patients who had IELT less than 12 minutes before PPI. This is especially important in patients with acquired premature ejaculation (who experienced a reduction in latency time usually less than 3 min.). In the current study, the percentage of premature ejaculation (PE) decreased from 8 patients (20%) before the operation to 3 patients (7.5%) after the operation with a highly statistically significant difference.

Conclusion: PPI does not interfere with ejaculation or orgasmic function in ED patients. Ejaculation latency time may be increased in men with rapid ejaculation (less than three minutes) or moderate ejaculation time (3-12 min), however, few men after PPI may still suffer PE. PPI for ED patients with concomitant PE may offer an added value in delaying ejaculation after the operation.

Key Words: Erectile dysfunction, penile prosthesis, premature ejaculation,Penile implantation, IIELT

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INTRODUCTION

Erectile dysfunction, also known as impotence, is the inability to achieve or sustain an erection for satisfactory sexual activity[1]. A penile prosthesis, or penile prosthesis implantation (PPI), is one of the oldest effective treatments for the condition of erectile dysfunction[2].

Currently available prostheses fall into two main groups: semirigid rods and inflatable devices. Both types have undergone many developments to combat problems that have arisen over time. Surgeon and patient preference together with cost considerations will determine which type of device is likely to be most suitable[3]. After insertion of PPI, the main problem of the patient, namely, erection, is solved. However, it is not clear if PPI affects ejaculation latency in these patients. This is because commonly the patient experiences premature ejaculation (PE)owing to associated anxiety from erectile dysfunction.

Some authors[4] have differentiated PE into two types: acquired and lifelong. PE is defined as 'a male sexual dysfunction characterized by the following:

(1) Ejaculation that always or nearly always occurs before or within about 1min of vaginal penetration from the first sexual experience (lifelong PE), or a clinically significant and bothersome reduction in latency time, often to about 3min or less (acquired PE).

(2) The inability to delay ejaculation on all or nearly all vaginal penetrations.

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(3) Negative personal consequences, such as distress, bother, frustration, and/or the avoidance of sexual intimacy.'

The intravaginal ejaculatory latency time (IELT) is often used as a method of quantifying the response to treatment and as a standardized method of comparing treatments within clinical trials. The IELT is defined as the time from vaginal intromission to intravaginal ejaculation.

PATIENTS AND METHODS

This study included 40 patients scheduled for malleable PPI. The patients were recruited from the andrology clinic, Kasr El-Aini Hospital, Cairo University, Egypt. Ethical approval was obtained from the ethical committee of the Department of Andrology, Faculty of Medicine, Cairo University, Egypt.

Inclusion criteria

Male patients with erectile dysfunction refractory to medical treatment, scheduled for PPI, were included.

Exclusion criteria

Patients with an ejaculation and patients candidate for re-implantation following a complicated implantation were included.

All patients were asked to sign an informed consent form.

Before PPI, IELT was measured by memory recall subjectively, whereas after PPI, it was measured using a stopwatch in most cases.

The patients stated the IELT before PPI and after 6 months of regular coitus following operation and if they noticed any change in ejaculation time, as measured by the self-estimated method (with the use of stopwatch if available).

Patients filled in the following questionnaires:

(1) The Index PE before and after 6 months of regular coitus following PPI[5].

(2) Premature ejaculation diagnostic tool questionnaire before and 6 months of regular coitus following PPI[6].

Statistical analysis

Data were collected and coded to facilitate data manipulation and double entered into Microsoft Access, and data analysis was performed using SPSS software, Copyright IBM corporation 2021, IBM corporation New Orchard, Road Armonk, NY 10504 produced in USA may 2021, version 18 for Windows.

(1) Simple descriptive data were presented in the form of numbers and percentages for qualitative data and arithmetic means as central tendency measurement andSDs as a measure of dispersion for quantitative parametric data.

(2) Inferential statistic tests were done as follows:

(a) For quantitative parametric data, paired *t*test was done for comparing two dependent quantitative data.

(b) For quantitative nonparametric data, Wilcoxon tests were used in comparing two groups of dependent data.

(c) Bivariate Pearson correlation test was done to test association between variables.

(3) *P* value less than or equal to 0.05 was considered the cutoff value for significance.

RESULTS

A total of 40 patients aged 36–73 years, with a mean age of 52 years, scheduled for malleable PPI were included in this study. All patients were in a stable marital relation for at least 6 months (range, 1–40 years, with a mean of 20.3 years). A total of 14(35%) patients were smokers. Screening for comorbidities showed that 35% of patients had comorbidities in form of 22.5% hypertension, 5% cholecystitis and HCV, and finally, 2.5% had cardiomegaly. All patients tolerated the operation well with no infection or other short-term complications noticed in the early follow-up period.

Comparison between ejaculatory function scores before and after penile prosthesis operation within study group (Table1) shows that there is no statistically significant difference in the Index PE total score or score in the domain of control or domain of distress. However, there was a significant statistical change in the domain of sexual satisfaction after PPI compared with the status before the operation.

Table 1: Comparisons of ejaculatory function scores before and after penile prosthesis operation among the study group

	Before Operation		After Operation		*P* value	Significance
	Mean	SD	Mean	SD		
The Index of Premature Ejaculation	7.1	1.1	6.9	1.8	0.6	NS
Control	5.48	0.87	4.66	0.74	0.2	NS
Distress	2.99	0.47	2.42	0.38	0.6	NS
Satisfaction	4.87	0.77	3.47	0.5	0.02	S
Premature ejaculation diagnostic tool	5.9	4.9	4.3	4.1	0.08	NS
IELT	12.7	9.5	16	13.9	0.1	NS

IELT, intravaginal ejaculatory latency time.

Moreover, there was no significant statistical difference in the premature ejaculation diagnostic tool score before and after PPI. The mean IELT of patients had no change of statistical significance; however, looking closely at change in ejaculatory latency after PPI, all patients with IELT less than 3min before operation (i.e.PE) as well as patients who had IELT less than 12min before operation had an increase in latency time, with a highly significant difference compared with before PPI (P<0.05), whereas no statistically significant change was noted in patients who had IELT of more than 12min before operation (Table2). This means that in patients with short IELT (<3min)and weak erection, PPI can improve both IELT and rigidity, and the same applies for patients with normal IELT 3–12 min.

Table 2: Comparisons of intravaginal ejaculatory latency time before and after penile prosthesis implantation

	IELT ö≤3 (n=8)		IELT >3–12< (n=10)		IELT ≥12 (n=22)	
IELT	Mean	SD	Mean	SD	Mean	SD
Before operation	1.9	1.2	6.3	2.2	19.6	7.1
After operation	7.8	3.1	14.3	9.7	19.8	16.5
P value	0.001		0.01		0.9	
Significance	HS		S		NS	

IELT, intravaginal ejaculatory latency time.

DISCUSSION

Although PPI has been a common procedure, rare studies have been performed regarding ejaculatory function after PPI. This may be explained by the common assumption that PPI has little or no effect on ability of the patient to achieve or delay ejaculation or orgasm[3].Therefore, patients are assumed to continue to achieve their 'regular' ejaculation as before PPI. This seems a reasonable assumption based on clinical observation. However, ejaculation is a complex process involving neurophysiological mechanisms, muscle integrity, and above all psychological factors[7]. Patient self-confidence, anxiety with sex, and perhaps frequency of intercourse change after PPI and hence may affect the ejaculatory domain.

In our study, many patients showed increase ejaculation latency after PPI, especially who had IELT less than 12min before PPI. This may be explained by decreased anxiety in sexual act and increased mindfulness in the sexual experience rather than worrying about losing erection. Furthermore, a low coital frequency frequently encountered with ED may decrease ejaculatory latency, which is resolved by PPI.

This finding, of prolonging ejaculation latency, is especially important in patients with acquired PE (who experienced reduction in latency time usually <3min). PPI for ED patients with concomitant PE may therefore include an added value in delaying ejaculation after the operation.

In the current study, the incidence of PE among the study group decreased from eight (20%) patients before operation to be three (7.5%) after operation, with a highly significant difference (P<0.05). This finding is important as it shows there are PEs after PPI. These patients may need attention and/or medication to delay ejaculation if it is annoying to them. For our knowledge, there were some correlations between pharmacological treatment for erectile dysfunction and the IELT. Studies using vardenafil compared with placebo[8] or sertraline[9], in men with lifelong PE, showed a significant increase in IELT with vardenafil as well as improvements in other patient reported outcome measures. This gave many researchers the understanding that improving erection in ED patients will in turn improves ejaculation as well. However, these findings are different from the results found by Bae *et al.*[10], who reported no changes in ejaculation domain of Male Sexual Health Questionnaire in patients after PPI whether inflatable or noninflatable. A total of 32 patients who underwent PPI were asked to fill-in Male Sexual Health Questionnaire before and after PPI and through 5 years of follow-up but showed no statistically significant difference.

CONCLUSION

Ejaculation latency should be discussed with candidates for PPI together with other aspects of the operation. However, larger studies with longer follow-up periods should be done.

CONFLICT OF INTEREST

There are no conflicts of interest.

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