Does two-piece PPI provide improvement in patient-partner quality of life?

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**Summary**

Objective: The aim of this study is to retrospectively examine patient-partner satisfaction and changes in quality of life due to two-piece penile prosthesis implantation (PPI). There is no data about patient Quality of Life (QoL) related to two-piece PPI in the literature.

Material and Methods: SF 36 scale and modified Erectile Dysfunction Inventory of Treatment Satisfaction (EDITS), which were filled before two-piece PPI and at the sixth postoperative month follow-up by male patients (n = 45) and female partners (n = 45), were evaluated.

Results: We found patient-partner satisfaction rates as 80% and 86% respectively. The changes in all mean scores of SF 36 (mean total score, mean physical health score and mean mental health score) were statistically significant (p < 0.01). Again, the differences between all mean scores of SF 36 according to the level of patient-partner satisfaction were statistically significant (p < 0.01).

Conclusions: Two-piece PPI is an important option for ED treatment. It provides significant improvement in patient-partner QoL with high treatment satisfaction.

**Key Words:** Two-piece penile prosthesis implantation; Patient-partner satisfaction; Quality of life.

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**INTRODUCTION**

Erectile dysfunction (ED) is a benign disease and it affects physical and psychosocial health condition. It has an important effect on patient's and partner's quality of life. ED treatment consists of three steps. Lifestyle modification and risk factor modification should be performed either before or together with ED treatment. Oral phosphodiesterase 5 inhibitors (PDE5I), vacuum erection device, topical/intraurethral prostaglandin, and shock wave therapy are used in the first-line treatment. In the second-line treatment, intracavernoous injection of alprostadil or combination therapy is applied. For the third-line treatment, penile prosthesis implantation (PPI) is available (1). Treatment failure is seen in approximately 80% of patients due to their discontinuation with first-line and second-line treatment (2). PPI is therefore an important option for patients that do not comply with or respond to these therapies.

In the treatment of ED, PPI is a method that provides highest patient and partner satisfaction among all treatment options (3). In the literature, the rate of patient and partner satisfaction varies between 70 and 87% (4). The high satisfaction of the couples also increases the quality of their sexual lives (5).

**MATERIALS AND METHODS**

The data of 61 patients that underwent PPI due to organic ED between March 2016 and March 2020 were retrospectively reviewed. In total 45 patients and 45 partners agreed to voluntarily participate in the study. Inclusion criteria: male patients with placement of two-piece PPI and their female partners, having not received a psychiatric diagnosis and treatment before PPI in their anamnesis, postoperative follow-up period of at least one year. Depending on the medical history and socioeconomic status of the patients, the type of prosthesis to be applied was decided. The patients were informed about possible intraoperative and postoperative complications. Two-piece prosthesis implantation was performed under spinal anesthesia. In the perioperative period, the penoscrotal region was mechanically cleaned using chlorhexidine alcohol for 10 min. All operations were performed with a penoscrotal incision. Dual antibiotics (ciprofloxacin and amoxicillin-clavulanic acid) were continued for two weeks after hospital discharge. The patients were trained to use the prosthesis after one month and were allowed to use the prosthesis after six weeks.

No conflict of interest declared.
SF-36 scale was respectively administered before PPI and at the postoperative sixth month follow-up by face-to-face interviews. Modified Erectile Dysfunction Inventory of Treatment Satisfaction (mEDITS) was filled at the postoperative sixth month, too.

**Statistical analysis**

IBM SPSS Statistics 22.0 program was used for statistical analysis while evaluating the findings obtained in the study. While evaluating the study data, in addition to descriptive statistical methods (Mean, Standard deviation), Paired Samples t test was used for the pre-post comparisons of the parameters showing normal distribution. Student t test was used for comparisons between the two groups. Significance was evaluated at the p < 0.05 level.

**Results**

The mean age of 45 male patients was 49.7 (± 12) years, and the mean age of their female partners was 42.3 (± 10) years. The mean follow-up period was 40 (± 23) months. Diabetes mellitus (%42), radical prostatectomy (%14), penile vascular disease (%38) and Peyronie disease (%6) were the etiology of ED. Since there was no patient that presented to the hospital with priapism, we did not include it in the table. The American Medical Service (AMS®) two-piece penile prosthesis was implanted in 45 patients. The mean length of hospital stay was three days. In the early postoperative period, one patient developed scrotal hematoma and one developed soft tissue infection due to negligent antibiotic use. In two patients, penoscrotal pain lasted for two months postoperatively. At the fourth postoperative month, mechanical damage was observed in the two-piece penile prosthesis of one patient. The patient-partner satisfaction rates were evaluated using mEDITS at the sixth month. According to the results, 80% of the patients (n = 36) and 86.7% of the partners (n = 39) expressed satisfaction with PPI while 20% of the patients (n = 9) and 13.4% of the partners (n = 6) were dissatisfied with the procedure. SF36 scale can also be evaluated under two main subscales as “Physical Health” and “Mental Health”. Table 1 shows the evaluation of SF-36 scores before and after PPI. According to mean total score before PPI, the increase seen in mean total score after PPI was statistically significant (p < 0.01) in patients. And also the increases seen in mean physical health score and mean mental health score after PPI were statistically significant (p < 0.01).

According to Table 1, the statistical results of the partners were similar to the statistical results of the patients (p < 0.01). Table 2 shows the evaluation of SF-36 scores according to satisfaction status. The mean total score of the satisfied group after PPI was significantly higher than the dissatisfied group (p < 0.01). Again mean mental health score and mean physical health score of the satisfied group after PPI were significantly higher than the dissatisfied group (p < 0.01). According to Table 2, the statistical results of partners showed to be similar to the statistical results of the patients (p < 0.01).

**Discussion**

Two-piece prostheses are preferred in patients who have undergone or are scheduled to undergo organ transplantation in the pelvic region, those with a history of radical pelvic surgery or pelvic radiotherapy, and cases that pose difficulty in terms of reservoir placement in the Retzius region (9). Other reasons for the preference of two-piece prostheses include their simple application, which makes it easier for the physician to guide the patients in terms of their use and also the full cost coverage of a two-piece penile prosthesis by Turkish Social Security Institution (10). Lastly, in socioeconomically and socioculturally developed countries, three-piece prostheses are the most preferred type since they can mimic erection as close to nature as possible and have a more cosmetic appearance (11). The disadvantages of three-piece prostheses are that mechanical damage complicates cases and they are more expensive than other types of prosthesis (12). In this study, we used two-piece prostheses for their ease of use and socioeconomic reasons, as well as due to the presence of radical pelvic surgery history in the study population.

The most common cause of dissatisfaction after PPI is shortening of the penile length, which is generally 1 to 2 cm (13). In a previous study, the satisfaction rate of patients that underwent prosthesis implantation due to priapism was observed to be 60% due to the complaint of penile shortening (14). Patients with Peyronie’s disease that undergo PPI may require additional surgical procedures to maintain penile length (15). Other reasons for patient dissatisfaction include the development of postoperative infections, mechanical damage, erosion, penile pain, short prosthesis, and soft glans syndrome (13). Presence of DM, spinal cord injury, revision surgery, steroid-dependent patients and complicated PPI procedure increase the risk of postop infection. When prosthe-

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### Table 1.
**Evaluation of SF-36 scores before and after PPI.**

<table>
<thead>
<tr>
<th></th>
<th>Before PPI Mean ± SD</th>
<th>After PPI Mean ± SD</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Physical health</td>
<td></td>
<td></td>
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<tr>
<td>Male patients</td>
<td>63.25 ± 9.36</td>
<td>82.11 ± 16.63</td>
<td>0.001**</td>
</tr>
<tr>
<td></td>
<td>Mental health</td>
<td>58.35 ± 13.65</td>
<td>81.89 ± 18.55</td>
</tr>
<tr>
<td></td>
<td>Total scores</td>
<td>60.80 ± 10.69</td>
<td>82.01 ± 17.46</td>
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<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Female partners</td>
<td>62.06 ± 10.43</td>
<td>84.52 ± 15.21</td>
<td>0.001**</td>
</tr>
<tr>
<td></td>
<td>Mental health</td>
<td>55.34 ± 13.92</td>
<td>80.09 ± 19.52</td>
</tr>
<tr>
<td></td>
<td>Total scores</td>
<td>58.69 ± 11.69</td>
<td>82.31 ± 17.36</td>
</tr>
</tbody>
</table>

Paired Samples t test: *p < 0.01.

### Table 2.
**Evaluation of SF-36 scores according to satisfaction status.**

<table>
<thead>
<tr>
<th></th>
<th>Unsatisfied Mean ± SD</th>
<th>Satisfied Mean ± SD</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Male patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical health</td>
<td>52.33 ± 13.47</td>
<td>69.56 ± 4.61</td>
<td>0.001**</td>
</tr>
<tr>
<td>Mental health</td>
<td>46.42 ± 8.23</td>
<td>90.77 ± 3.55</td>
<td>0.001***</td>
</tr>
<tr>
<td>Total scores</td>
<td>49.37 ± 10.67</td>
<td>90.16 ± 3.83</td>
<td>0.001***</td>
</tr>
<tr>
<td>Female partner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical health</td>
<td>49.10 ± 10.63</td>
<td>89.97 ± 4.96</td>
<td>0.001**</td>
</tr>
<tr>
<td>Mental health</td>
<td>35.38 ± 10.17</td>
<td>86.96 ± 1.96</td>
<td>0.001**</td>
</tr>
<tr>
<td>Total scores</td>
<td>42.24 ± 10.39</td>
<td>88.47 ± 6.46</td>
<td>0.001**</td>
</tr>
</tbody>
</table>
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**References**


18. Salama N. Satisfaction with the malleable penile prosthesis among the couples from the Middle East- is it different from that reported elsewhere? Int J Impo Res. 2004; 16:175-180.


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