

Testicular prosthesis: Patient satisfaction and sexual dysfunctions in testis cancer survivors

Francesco Catanzariti ¹, Benedetta Polito ², Massimo Polito ¹

¹ Polytechnic University of Marche, Faculty of Medicine, Department of Odontostomatologic and Specialized Clinical Sciences, Urology Clinic, Department of General and Specialized Surgery, University Hospital, Ancona, Italy;

² Degree in Educational and childhood Psychology, Salesian Pontifical University, Rome, Italy.

Summary *Purpose: We studied patient satisfaction about sexual activity after prosthesis implantation using validated questionnaires with the aim to discover if testicular prosthesis could be responsible of sexual dysfunctions (erectile dysfunction or premature ejaculation). Materials and Methods: We evaluated a total of 67 men who underwent radical orchiectomy for testicular cancer and a silicon testicular prosthesis implantation from January 2008 to June 2014 at our Hospital. These patients completed 5 validated questionnaires the day before orchiectomy and 6 months after surgery: the International Index of Erectile Function 5 (IIEF5), the Premature Ejaculation Diagnostic Tool (PEDT), the Body Exposure during Sexual Activities Questionnaire (BESAQ), the Body-Esteem Scale and the Rosenberg Self-Esteem Scale. We also evaluated 6 months after surgery any defects of the prosthesis complained by the patients. Results: The questionnaires completed by patients didn't show statistically significant changes for erectile dysfunction ($p > 0.05$) and premature ejaculation ($p > 0.05$). On the contrary the psychological questionnaires showed statistically significant change for the BESAQ ($p < 0.001$) and the Body Esteem Scale ($p < 0.001$), but not for the Rosenberg Self-Esteem Scale ($p > 0,05$). A total of 15 patients (22.37%) were dissatisfied about the prosthesis: the most frequent complaint (8 patients; 11.94%) was that the prosthesis was firmer than the normal testis. Conclusions: Testicular prosthesis implantation is a safe surgical procedure that should be always proposed before orchiectomy for cancer of the testis. The defects complained by patients with testicular prosthesis are few, they don't influence sexual activity and they aren't able to cause erectile dysfunction or premature ejaculation.*

KEY WORDS: Testicular cancer; Testicular prostheses; Sexual dysfunction; Patient satisfaction.

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INTRODUCTION

Testicular cancer is one of the most frequent carcinoma in young males. In USA about 8000 men discover to be affected by testicular cancer every year and about 400 men of these die for this disease in a year, but fortunately the five-year survival rate of patients with testicular cancer is 95% (1). Peak incidence is in the third decade of life for non-seminoma, and in the fourth decade for pure seminoma (2), so that this disease occurs during the

most important period of life for sexual activity. The find of being affected by cancer of the testis and the following loss of the testis from the scrotal sac after orchiectomy are both responsible of a great psychological trauma in these young men, as described in literature (3). The implantation of testicular prostheses could be the solution, but even if good aesthetic results can be obtained, the presence of an artificial testis can be cause of shame and loss of self confidence during sexual activity.

Most of the papers in literature analyse patient satisfaction for testicular prosthesis just about aesthetic side (size, texture, weight, position), in our study, on the contrary, we studied patient satisfaction after prosthesis implantation about sexual activity using validated questionnaires with the aim to discover if testicular prosthesis could be responsible of any sexual dysfunction (erectile dysfunction or premature ejaculation).

METHODS

In lieu of a formal ethics committee, the principles of the Helsinki Declaration were followed. A total of 95 men underwent radical orchiectomy for testicular cancer from January 2008 to June 2014 at our Hospital. Of these patients, 67 underwent also a silicon testicular prosthesis implantation.

This group of patient completed 5 validated questionnaires the day before orchiectomy and 6 months after surgery: the International Index of Erectile Function - 5 (IIEF-5) (4) to evaluate erectile function; the Premature Ejaculation Diagnostic Tool (PEDT) (5) to assess premature ejaculation; the Body Exposure during Sexual Activities Questionnaire (BESAQ) (6) a 28 item scale to measure anxiety during sexual activity and to evaluate desires and attempts to selectively avoid exposing one's body (or parts of one's body) to sexual partners; the Body-Esteem Scale (7) and the Rosenberg Self-Esteem Scale (8) those are respectively 35 and 10 item scales created to measure self confidence of each patient towards sexuality and other general aspects of life.

We also evaluated any defects of the prosthesis complained by the patients within 6 months after surgery: pain, abnormal size of the prosthesis (larger or smaller than the normal testis), prosthesis texture (firmer than the normal testis), sense of coldness of the prosthesis and

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abnormal position of the prosthesis in the scrotal sac (higher than the normal testis).

Surgical technique

We used a silicone testicular prosthesis, with a protective suture guard for easy implantation. The size of the prosthesis to use was determined by ultrasound before surgery. All the implants were placed at the initial surgery via the inguinal approach and none was inserted after orchiectomy as a second procedure. The prosthesis was fixed in the scrotum with a non-absorbable suture.

Statistical methods

All the scores of questionnaires before and after surgery and defects of the prosthesis complained by the patients were collected into a database. General descriptive statistics were measured for categorical and continuous variables. We performed Student's t-test to compare mean score of all the five questionnaires (IIEF5, PEDT, BESAQ, Body-Esteem Scale and Rosenberg Self-Esteem Scale) before and after surgery. Student's t-test was considered significant if < 0.05. Statistical analyses were performed with IBM SPSS Statistics Base®.

RESULTS

From January 2008 to June 2014 we performed 95 orchiectomy for cancer of the testis and 67 (70.52%) patients of these decided also to undergo a silicone testicular prosthesis implantation. The remaining 28 (29.47%) patients refused testicular prosthesis for different reasons (Table 1): 15 (53.57%) patients were afraid of infection and of the need of a second surgery to repair it; 10 (35.71%) patients didn't care of remaining just with one testis in the scrotal sac; 3 (10.71%) patients didn't want prosthesis because they couldn't accept an artificial testis in the scrotal sac for psychological reasons (shame with the partner during sexual activity or bad memories evoked by self-palpation of the testicular prosthesis). Age

Table 1.
Reasons of refusal of testicular prosthesis implantation.

	No. (%)
Fear of infection	15 (53.57%)
Regardless of remaining with only one testicle	10 (35.71%)
Psychological reasons (shame with the partner or other)	3 (10.71%)

Table 2.
Age and marital status of patients who accepted testicular prosthesis implantation.

Mean age	34.39
Median age	33.00
Standard deviation of age	11.24
No. marital status at surgery (%):	
Single or divorced	45 (67.16)
Married or a partner in a steady relationship	22 (32.83)
No. marital status 6 months later (%):	
Single or divorced	48 (71.64)
Married or a partner in a steady relationship	19 (28.35)

and marital status of patients who accepted testicular prosthesis implantation are described in Table 2.

Between the 67 patients who underwent implantation two (2.98%) had inflammation with scrotal edema that healed in few days with anti-inflammatory and just one (1.49%) had a hematoma resorbed spontaneously without a second surgery. No major complications (extrusion or migration of the prosthesis) have been described (Table 3).

The questionnaires (Table 4) completed by patients before and 6 months after surgery (mean follow up: 49.42 months) didn't show statistically significant changes in the score for erectile dysfunction ($p > 0.05$) and premature ejaculation ($p > 0.05$). On the contrary the psychological questionnaires showed statistically significant change in the score for the BESAQ ($p < 0.001$) and the Body Esteem Scale ($p < 0.001$), but not for the Rosenberg Self-Esteem Scale ($p > 0.05$). We also collected data about dissatisfaction of patients about the prosthesis and defects of the prosthesis complained by the patients within 6 months from surgery (Table 5).

Fifteen patients (22.37%) were dissatisfied about the prosthesis: one (1.49%) patient reported chronic pain, six (8.95%) men reported abnormal size of the prosthesis compared to the normal testis (five patients reported that the prosthesis was larger than the normal testis and one patient reported that the prosthesis was smaller than the normal testis); eight (11.94%) patients reported that the prosthesis was firmer than the normal testis; two (2.98%) patients complained of sense of coldness of the prosthesis and four (5.97%) patients reported that the prosthesis was higher than the normal testis in the scrotal sac.

DISCUSSION

Our study is one of the few studies available in the literature about testicular prosthesis satisfaction after orchiecto-

Table 3.
Complications of testicular prosthesis implantation.

	No. (%)
Inflammation with scrotal edema	2 (2.98%)
Hematoma	1 (1.49%)

Table 4.
Score changes in the 5 questionnaires (IIEF-5, PEDT, BESAQ, Body Esteem Scale and Rosenberg Self Esteem Scale) at testicular prosthesis implantation (t^0) and 6 months later (t^1).

		Mean score ± SD	p value change
IIEF-5	t^0	22.83 ± 2.46	$p > 0.05$
	t^1	22.20 ± 2.84	
PEDT	t^0	7.79 ± 5.30	$p > 0.05$
	t^1	8.39 ± 5.27	
BESAQ	t^0	37.59 ± 11.5	$p < 0.001$
	t^1	46.17 ± 10.91	
Body Esteem Scale	t^0	85.14 ± 12.14	$p < 0.001$
	t^1	77.77 ± 10.24	
Rosenberg Self Esteem Scale	t^0	27.30 ± 3.04	$p > 0.05$
	t^1	26.45 ± 3.26	

Table 5.

Dissatisfaction of patients about the prosthesis and defects of the prosthesis complained by the patients 6 months after surgery.

	No. (%)
Dissatisfaction of patients about the prosthesis	15 (22.37)
Defects of the prosthesis complained by the patients	
Chronic pain	1 (1.49)
Abnormal size of the testicular prosthesis	
Larger than the normal testis	5 (7.46)
Smaller than the normal testis	1 (1.49)
Testicular prosthesis firmer than the normal testis	8 (11.94)
Sense of coldness of the prosthesis	2 (2.98)
Testicular prosthesis higher than the normal testis in the scrotal sac	4 (5.97)

my for testicular cancer. This is a great and serious lack in andrology if we consider that there is a great number of studies in literature about breast implants satisfaction after mastectomy. Moreover most of these few studies (9, 10) analyse just satisfaction about aesthetic factors (size, texture, weight, position) but not about sexual activity after testicular prosthesis implantation. Furthermore the few studies (11, 12) who analyse this aspect use simple and generic questions without using validated questionnaires. The only paper in literature analysing sexual activity after testicular prosthesis implantation with validated questionnaires is the study by *Turek et al.* (13). These authors used the same psychological validated questionnaires (BESAQ, Body-Esteem Scale and Rosenberg Self-Esteem) that we used in our study but they didn't use IIEF-5 and PEDT for the analysis of erectile dysfunction and premature ejaculation before and after testicular prosthesis implantation as we did. Moreover their study is about testicular prosthesis implantation not only after orchiectomy for cancer of the testis but also for torsion, trauma or agenesis of the didimus so that *Turek et al.* included in their work 73 children and 76 adults.

Our study demonstrated that testicular prosthesis implantation is a safe surgical procedure with few risks of complications as the other papers cited showed. The dissatisfaction rate is quite low (22.37%). The changes of the mean scores of psychological questionnaires are statistically significant for BESAQ and Body Esteem Scale ($p < 0.001$) but not for the Rosenberg Esteem Scale ($p > 0.05$) and the changes of the mean scores of IIEF-5 and PEDT before and 6 months after orchiectomy are not statistically significant. These results demonstrate that a testicular prosthesis implantation modifies psychological approach towards the partners during sexual activity because some patients with testicular prosthesis feel shame of it and they try to not show the prosthesis during sexual activity. We also showed that testicular prosthesis doesn't cause sexual dysfunction (erectile dysfunction or premature ejaculation). However our study has some limitations. First the follow up after testicular prosthesis implantation is short (6 months), second we didn't compare sexual activity satisfaction of our patients with sexual activity satisfaction of patients those refused testicular prosthesis implantation.

CONCLUSIONS

This study confirms that testicular prosthesis implantation is a safe surgical procedure that should be always proposed before orchiectomy for cancer of the testis because complications and defects complained by patients with testicular prosthesis are few.

We also showed for the first time that implant doesn't influence sexual activity and it isn't able to cause erectile dysfunction or premature ejaculation even if further studies with a control group are needed to confirm this.

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Correspondence

Francesco Catanzariti, MD
frenzis83@gmail.com

Massimo Polito, MD

Polytechnic University of Marche, Faculty of Medicine,
Department of Odontostomatologic and Specialized Clinical Sciences, Urology Clinic,
Department of General and Specialized Surgery, University Hospital, Ancona, Italy

Benedetta Polito, MD

Educational and Childhood Psychologist, Salesian Pontifical University, Rome, Italy