

Sexual Dysfunction After Partial Penectomy for Penile Cancer: Updated Report from A Vietnamese Patient Cohort

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Research Article

Keywords:

Posted Date: April 11th, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1525249/v1>

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Abstract

Objectives

This study sought to evaluate sexual dysfunction of patients who underwent partial penectomy for carcinoma of the penis.

Method

We included the individuals who aged 18 years and older and received the treatment with partial penectomy for penile carcinoma. Information on sexual function after partial penectomy were evaluated to be erectile dysfunction, premature ejaculation, frequency of sexual intercourse within one month, time to have sex again, delayed ejaculation, decreased sexual desire, partners's attitudes toward sex, and partner's sexual avoidance.

Results

Between January 2016 and December 2019, there were 22 eligible patients who received the treatment with partial penectomy, with the mean age at operation of 50.3 ± 11.6 years. Three (13.6%) patients had phimosis and one (4.5%) patient had genital warts. 17 patients were fully monitored postoperatively, 2 patients died and 3 patients were uncontactable. In 17 patients who were followed up after partial penectomy in this study, 13 of them had sexual intercourse after surgery (76.5%), when there were four patients who did not have sex again after surgery. There was significant decrease in the mean frequency of sexual intercourse within one month pre-operatively compared to post-operatively (7.6 ± 2.2 times vs. 3.4 ± 2.1 times). The average time to have sex again after surgery was 92.8 ± 92.5 days. In the sample of 13 patients having sexual intercourse again after partial penectomy, most them were no erectile dysfunction ($n = 11$; 84.6%). The degree of erectile dysfunction was mild in one patient (7.7%) and, mild to moderate in one patient (7.7%). There were delayed ejaculation in 12 (92.3%) patients and decreased sexual desire in 11 (64.7%) patients. 13 (76.5%) patients reported partners's disappointed attitudes toward sex after surgery. 9 (69.2%) patients reported partner's sexual avoidance after partial penectomy.

Conclusions

Besides the sexual dysfunction of penile carcinoma patients after partial penectomy was known, our preliminary findings suggest that notable sexual problems that patients experiencing after surgery were decreased frequency of sexual intercourse and satisfaction of both patient and partner.

Introduction

Of all urogenital cancers, sexual dysfunction was severely affected in patients undergoing penile cancer treatment [1]. Penile cancer is an uncommon genitourinary malignancy with an estimated prevalence of 0.1–1 per 100,000 men in high-income countries [2], and up to 2.8–6.8 per 100 000 of male malignancies in the developing countries [3]. Besides penile cancer can affect men of any age, patients diagnosed with penile cancer are psychologically devastating to them and can pose a challenge to the treating urologist. In a recent report, penile cancer is concluded to be associated with dramatic decrease in sexual function and quality of life, dependent on the invasiveness of the treatment [1]. It is estimated that in the United States there are 1290 new cases of invasive penile cancer and even 290 male deaths [4].

Early diagnosis and staging are imperative but patients frequently come to the clinic in the invasive stage. Main symptoms depend on penile cancer stages whether there are local and distant metastases [5]. The earliest appropriate possible treatment need be instituted when the patient is diagnosed with penile cancer [5]. Current treatment options for most men with penile cancers including surgery, topical chemotherapy or radiation therapy are based mainly on the stage and grade of the cancer [2].

Aggressive therapy with partial or total penectomy is still the conventional and first-line treatment for cancer of the penis [2, 6]. Partial penectomy affect the length of the penis, vaginal penetration, the ability to reach orgasm, erectile function and ejaculatory reflex [7–9]. In addition to sexual disorders, quality of life metrics in patient undergoing partial penectomy are also affected significantly including psychosexual parameters such as confidence, male self-image, and sexual function [10–13].

Although penile cancer is more common in developing countries where have low neonatal circumcision and multiple risk factors related to socioeconomic conditions [3, 14], there is a paucity of data in the medical literature in such conditions describing sexual dysfunction after partial penectomy for penile cancer. Besides small patient sample size of previous studies, few studies provided psychological states after partial penectomy and their results were sparse to suggest a complete profile for these penile cancer patients. Particularly, in Vietnam, patients with penile cancer often come to the hospital at a late stage of disease, which can have profound effects on quality of life and the male psyche. To contribute the knowledge gap of the sexual function, this study sought to evaluate sexual dysfunction of patients who underwent partial penectomy for carcinoma of the penis.

Materials And Methods

Participants were recruited from Center For Andrology and Sexual Medicine, Viet Duc University Hospital in 2016–2019 period. We included the individuals who aged 18 years and older and received the treatment with partial penectomy for penile carcinoma. The exclusion criteria included non-surgical treatment or total penectomy, recurrence and/or metastasis and nonacceptance to participate in this study. Ultimately, the present study included 22 eligible patients with complete data.

The pre-operative patient variables studied included patient age, occupation, education, history of previous phimosis and genital warts. Information on sexual function after partial penectomy were evaluated to be erectile dysfunction, premature ejaculation, frequency of sexual intercourse within one

month, time to have sex again, delayed ejaculation, decreased sexual desire, partners' attitudes toward sex, and partner's sexual avoidance.

Erectile dysfunction was evaluated using the international index of erectile function (IIEF-5) – a multidimensional, self-reported questionnaire, including 15 items assigned to 5 domains (erectile function, orgasmic function, sexual desire, intercourse satisfaction and overall satisfaction). The possible scores for the IIEF-5 range from 5 to 25, and erectile dysfunction was classified into five categories based on the scores: severe (5–7), moderate (8–11), mild to moderate (12–16), mild (17–21), and no erectile dysfunction (22–25). Premature ejaculation was evaluated using the premature ejaculation diagnostic tool (PEDT) is a brief diagnostic measure to assess premature ejaculation. The PEDT has 5 items regarding control, frequency, minimal stimulation, distress, and interpersonal difficulty. The overall PEDT score varies from 0–20 was based the sum of the component scores of these components. A PEDT score of ≤ 8 means no premature ejaculation, 9–10 probable premature ejaculation, and ≥ 11 overt premature ejaculation. Remaining information on sexual function after partial penectomy was sequentially documented by binary interview questions.

The data were entered using Epidata version 3.1 software, and then all analyses were conducted using Stata 15 (StataCorp LLC, USA) for Windows. A visual inspection was first performed on all data for coding errors, outliers, or funky distributions. No imputation was made for missing data. Descriptive statistics were used of percentages, mean, min and max regarding the data analysis.

Results

There were 22 selected eligible patients in our study. Most were working as blue-collar workers ($n = 16$; 72.7%). The mean age of patients was 50.3 years, and most them were 40 years or over (77.3). Three (13.6%) patients had phimosis and one (4.5%) patient had genital warts (Table 1).

Table 1
Preoperative patient characteristics

CHARACTERISTICS	PATIENTS (N = 22)
Patient age	
Mean \pm SD – years	50.3 \pm 11.7
Range – years	29–67
Age group – %	
20–30	1 (4.5)
31–40	4 (18.2)
41–50	7 (31.8)
51–60	4 (18.2)
> 60	6 (27.3)
Occupation – %	
Blue-collar worker	16 (72.7)
White-collar worker	6 (27.3)
Education – %	
High school	14 (63.6%)
College/Tertiary and above	8 (36.4%)
Phimosis – %	
No	19 (86.4%)
Yes	3 (13.6%)
Genital warts – %	
No	21 (95.5%)
Yes	1 (4.5%)

Of the 22 initially eligible patients, we followed up and re-examined 17 patients. The average follow-up duration for 17 patients was 22.4 ± 10.6 months after partial penectomy, the shortest of 8 months and the longest of 44 months. The postoperative follow-up duration was mainly from 1 to 3 years (70.6%) (Fig. 1).

In 17 patients who were followed up after partial penectomy in this study, 13 of them had sexual intercourse after surgery (76.5%), when there were four patients who did not have sex again after surgery. There was significant decrease in the mean frequency of sexual intercourse within one month pre-

operatively compared to post-operatively (7.6 ± 2.2 times vs. 3.4 ± 2.1 times). The average time to have sex again after surgery was 92.8 ± 92.5 days (Table 2).

In the sample of 13 patients having sexual intercourse again after partial penectomy, most of them were no erectile dysfunction ($n = 11$; 84.6%). The degree of erectile dysfunction was mild in one patient (7.7%) and, mild to moderate in one patient (7.7%). We documented delayed ejaculation in 12 (92.3%) patients and decreased sexual desire in 11 (64.7%) patients. 13 (76.5%) patients reported partners' disappointed attitudes toward sex after surgery. 9 (69.2%) patients reported partner's sexual avoidance after partial penectomy (Table 2).

Table 2
Sexual function after partial penectomy

	PATIENTS
Sexual intercourse again after surgery	N = 17
No	4 (23.5%)
Yes	13 (76.5%)
Frequency of pre-operative sexual intercourse within one month	N = 17
Mean \pm SD – times	7.6 \pm 2.2
Range – times	5–12
Frequency of post-operative sexual intercourse within one month	N = 13
Mean \pm SD – times	3.4 \pm 2.1
Range – times	1–8
Postoperative time to have sex again	N = 13
Mean \pm SD – days	92.8 \pm 92.5
Range – days	21–360
Prevalence of postoperative erectile dysfunction – IIEF	N = 13
No erectile dysfunction (22–25)	11 (84.6%)
Mild (17–21 điểm)	1 (7.7%)
Mild to moderate (12–16)	1 (7.7%)
Moderate (8–11)	0 (0.00%)
Severe (1–7)	0 (0.00%)
Prevalence of postoperative premature ejaculation – PEDT	N = 13
No premature ejaculation (\leq 8)	11 (84.6%)
Probable premature ejaculation (9–10)	2 (15.4%)
Overt premature ejaculation (\geq 11)	0 (0.00%)
Delayed ejaculation	N = 13
No	1 (7.7%)
Yes	12 (92.3%)
Decreased sexual desire	N = 17

	PATIENTS
No	6 (35.3%)
Yes	11 (64.7%)
Partners's attitudes toward sex after surgery	N = 17
Disappointed	13 (76.5%)
Normal	4 (23.5%)
Partner's sexual avoidance	N = 13
No	4 (30.77%)
Yes	9 (69.23%)

Discussion

The mean age of our sample size was 50.3 years old. Mean age was lower in our study compared to Salvatore Sansalone's (61.5 ± 2.5 years) [15]. Another scarce study of Cui Yu in China reported the median age of 56 years [16]. In Suarez-Ibarrola R.'s study [17], the mean age of 9 patients undergoing partial penectomy was 57 ± 12.4 years of age at the time of diagnosis. We find that those diagnosed with penile cancer are more frequent in middle-aged men.

Besides poor penile hygiene, men with phimosis have a risk of developing penile cancer; in particular, phimosis is associated with as many as 90% of cases of penile cancer [18, 19]. Of 22 patients with newly diagnosed with penile cancer who were initially treated with partial penectomy, nineteen patients had phimosis. Prevalence rates of phimosis in male patients was 83.7% in an one-institution study in China of Cui Yu [16] and 48% in a multi-institutional study of Salvatore Sansalone [15]. The prevalence of phimosis in our study is consistent with Cui Yu's [16], showing that male phimosis accounts for a large proportion of patients with penile cancer. However, this figure was significantly lower in Salvator's study [15] than ours. In addition to the widely different prevalence of circumcision amongst countries, this may explain that European patients often care a lot about health and are often circumcised at a young age, while Vietnam or China are both Asian countries where no regular phimosis examination since childhood and early circumcision treated uncommonly. Genital wart is also one of the leading causes of penile cancer. In our study, only one patients had a history of genital wart, which then led to penile cancer, while 2 cases in Salvator's study [15] were reported.

We followed up 17 out of 22 patients after surgery. These 17 patients had sex with their partners pre-operatively, and postoperatively 13 out of 17 patients had sex after surgery. Of the four patients who did not have sex again after partial penectomy, two patients are over 60 years old. At such an age that is considered elderly, their sexual needs and desires may not be high. Following undergoing partial penectomy, partly due to functional and psychological effects and low sexual desire, it is understandable

not to have sex again after surgery. The remaining two patients are all under 40 years old. Despite postoperatively high sexual desire, erectile function and possible vaginal penetratio [16, 17, 20], a psychological sense of inferiority and a reduction in the length of penis makes them less confident to have sex with their partner again. In Cui Yu's study [16], 35 out of 43 patients had sex again after surgery. Patients not having sex after surgery are related to age and psychological shame about the penis with partners as well as social prejudices. .

The mean frequency of sexual intercourse within one month after surgery was 3.4 ± 2.1 times, significantly less than before surgery (7.6 ± 2.2 times). According to Ancona's study [21] on 14 patients after partial penectomy, the frequency of sexual intercourse within one month after surgery decreased significantly after surgery. Also in Frederico Ramalho Romero's study [20], there was also a statistically significant reduction in the frequency of postoperative sexual intercourse.

Among 13 patients having sexual intercourse after surgery, 11 patients did not have erectile dysfunction (IIEF-5 from 22–25 points) (84.62%), mild erectile dysfunction (IIEF-5 from 17–21 points) in 1 patient, mild to moderate erectile dysfunction (IIEF-5 from 12–16 points) and no patient with moderate (IIEF-5 from 8–11 points) to severe erectile (IIEF-5 from 1–7 points). In 2 those with mild and moderate erectile dysfunction, preoperative assessment also showed this condition. In Cui Yu's study [16], of 43 study patients, 76.7% of patients did not have erectile dysfunction after surgery. Another study by Ancona [21] showed that 9 out of 14 patients after partial penectomy had normal erectile function. Thereby, we found that the erectile function is usually relatively good following partial penectomy. The difference between the studies may be because erectile function depends on many other factors such as age, preoperative erection ability, and comorbidities [1, 22].

Vaginal penetration after partial penectomy is frequently possible [23]. According to Romero's study [20], penile erection and ejaculation was documented in 55.6% of patients after partial penectomy. Premature ejaculation should also be a matter of concern when this is a common male sexual dysfunction with 30–40% of men affected [24]. We found the majority of patients (11 out of 13 patients) who were without complaints of premature ejaculation after partial penectomy had a total premature ejaculation diagnostic tool (PEDT) score ≤ 8 points. There are 2 patients with total PEDT score of 9–10 points. For the patient with total PEDT score of 9 points, this patient was very worried that the time of ejaculation did not satisfy the partner (3 points), the patient had a loss of premature ejaculation (2 points). For the remaining 3 questions of PEDT, the scores were from 1 to 2 points. We found that most of the patients had no complaints about premature ejaculation. The patients of suspected premature ejaculation with total PEDT scores of 9–10 points had a common feature that their psychology was very worried about their ejaculation status to be able to make their partner satisfied, thereby they felt frustrated when having premature ejaculation. From that, it can be seen the important role of the andrologists and psychologists in providing psychological counseling as well as treatment for these patients. Regarding delayed ejaculation, only one patient experienced delayed ejaculation out of thirteen patients who had sex again after surgery, when another patients had no complaints about delayed ejaculation. The main reason for delayed ejaculation in resuming sexual intercourse appeared to be related to feelings of shame owing to

the small penile size and absence of glans penis, and psychological anxiety of pathology of penile cancer. Delayed ejaculation is probably the least studied of male sexual dysfunctions after partial penectomy, with an estimated prevalence of 1–4% of the male population [25–27]. Our study initially contributed to the empirical understanding of this sexual dysfunction after partial penectomy.

Regarding decreased sexual desire, among 17 patients in this study, 11 of 17 patients had decreased sex drive postoperatively compared to preoperatively (64.7%). Once interviewing these patients, we found the causes of decreased libido to be psychological anxiety about illness, guilt related to the penis after penectomy, low self-esteem of both the patient and the partner, in addition can be related to age and comorbidities. We also followed up and compared partners' attitudes toward sex before and after surgery. It can be seen that the partner's frustration and distress in having sex with patients after partial penectomy compared with before partial penectomy is significantly different. The most common causes of partner's frustration and distress in relationships with these patients might be psychological discomfort when having sex with cancer patient, a reduction in the length of penis, and decreased sensations of orgasm and sexual satisfaction. In Ancona's study [21] on 14 patients following partial penectomy, 9 patients reported their sexual partners felt uncomfortable and dissatisfied with sex (64.29%). Another study of Romero FR [20] with a study sample of 18 patients indicated that only 33.3% of partners were satisfied with their sexual relationship after surgery, and 66.7% of partners were dissatisfied and disappointed. Thus, it can be seen that our result was consistent with above studies [20, 21].

We acknowledged relatively small size sample, however, comparable to previous studies. Multivariate models with confounding factors for sexual dysfunction were not reported due to the statistical significance of present sample size. A larger multicentre sample size is required to perform subgroup analyses of the sexual function of penile carcinoma patient after partial penectomy.

Conclusions

Besides the sexual dysfunction of penile carcinoma patients after partial penectomy was known, our preliminary findings suggest that notable sexual problems that patients experiencing after surgery were decreased frequency of sexual intercourse and satisfaction of both patient and partner.

Declarations

Ethics Approval And Consent to Participate:

This study was approved by the institutional ethical review committee of the Viet Duc University Hospital. Written informed consent was obtained from each patient. All methods were carried out in accordance with relevant guidelines and regulations of Helsinki declaration.

Consent for Publication:

Not applicable.

Availability of Data and Materials:

The datasets generated during the current study are available from the corresponding author on reasonable request.

Competing Interests:

The authors declare that they have no competing interests.

Funding:

This research received no external funding.

Authors' Contributions:

Q.N. and V.-Q.B. conceived and designed the study; Q.N. and V.-Q.B. performed the study; V.-Q.B. and H.-L.V. analyzed the data; all the authors (Q.N., V.-Q.B. and H.-L.V.) wrote the article. All authors (Q.N., V.-Q.B. and H.-L.V.) have read and approved the submitted manuscript.

Acknowledgments:

We sincerely thank the patients, their families, the members working at Center For Andrology and Sexual Medicine of Viet Duc University Hospital and Board of Directors of Viet Duc University Hospital for their support.

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Figures

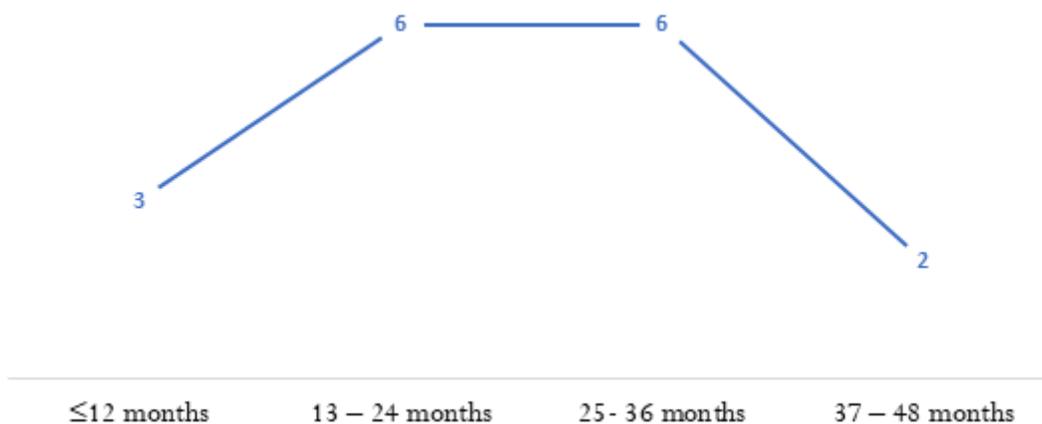


Figure 1

Post-operative follow-up duration.