Asian Journal of Research and Reports in Urology

3(4): 5-9, 2020; Article no.AJRRU.60948

Sexual Function and Quality of Life in Penile Cancer Patient after Partial Penectomy

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Authors' contributions

This work was carried out in collaboration between both authors. Author RP contributed to the conception and design of the article, analysis and interpretation of data; drafting the article or revising it critically for important intellectual content and final approval of the version to be published. Author YS contributed to the conception and design of the article, drafting the article or revising it critically for important intellectual content. Both authors have read and approved the manuscript.

Article Information

Editor(s):
(1) Dr. Muhammad Ujudud Musa, Federal Medical Centre, Nigeria.
Reviewers:
(1) Etebong Clement, University of Uyo, Nigeria.
(2) Sompol Permpongkosol, Mahidol University, Thailand.
Complete Peer review History: http://www.sdiarticle4.com/review-history/60948

Original Research Article

Received 15 July 2020
Accepted 20 September 2020
Published 22 October 2020

ABSTRACT

Introduction: Urological cancers are increasing in number, but one of them is quite rare, which is penile cancer. In Indonesia, penile cancer was ranked thirtieth. The management often caused sexual problems for the patients. This study would like to find out the sexual function of the patients after partial penectomy.
Methods: This study was conducted in Haji Adam Malik General Hospital from 2017-2018. Patients underwent partial penectomy patients were included in the study. Data were obtained preoperative and 3 months postoperative by using IIEF and EORTC QLQ-C30 questionnaires.
Results: We found 10 partial penectomy for penile cancer cases in Haji Adam Malik General Hospital Medan. Mean of age is 48 ± 16,26 and smoking was noted in 8 (80%). IIEF questionnaire shows significant correlation in erectile function (9,0±0,94 p<0,05), orgasmic function (2,6±1,17 p<0,05), sexual desire (4,5±0,70 p<0,05), intercourse satisfaction (3,5±0,70 p<0,05), and overall satisfaction (4,6±0,69 p<0,05). EORTC questionnaire stated that quality of life (18,32±6,58 p<0,05), fatigue (17,78±11,94 p<0,05), and sleep (73,36±14,04 p<0,05) significantly affected. Other variable such as physical, role, emotional, cognitive, and social functioning shows no difference.

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Conclusion: Penile cancer management, even with organ-sparing technique, still brings drawbacks to the patients, in the whole domain of the IIEF questionnaire and impairs the quality of life of the patients.

Keywords: Sexual functions; partial penectomy; IIEF; EORTC; penile cancer.

1. INTRODUCTION

Malignancy in urology are growing in number, such as prostate, bladder, kidney, and testis which ranked sixth, twelfth, and eight-teenth respectively [1,2]. One of the rare malignancy in urology is penile cancer. Penile cancer is more common in parts of Asia, Africa, and South America, reaching up to 10% of cancers in men, compared to the United States [3]. Most penile cancers occur in uncircumcised men and arise on the prepuce or glans penis [4]. In Indonesia, generally most penile cancer are found at the age of 40-50 years (26.1%), with the majority having no circumcision history (47.8%) with the location of the primary lesion at the glans penis (18.8%), penile shaft (15.9%), and a combination of glans penis-penis shaft (34.8%). Management of penile cancer in Indonesia includes both partial (33.6%) and total (49.3%) penectomy [5]. This cancer is one of the cancers that most affects men because penile cancer adversely affects sexual function. Men receive a variety of treatments for cancer that can impact their sexuality and often they may receive multiple kinds of treatments. Surgical interventions are a treatment of choice for a number of types of cancer [6,7]. Partial penectomy provides excellent local control in the management of penile cancer. The recurrence rate and morbidity are low after partial penectomy, and both urinary and sexual function can be well maintained.[8] With careful patient selection and meticulous follow-up, most patients with invasive penile carcinoma can be offered penile-preserving surgery [9]. Innovative surgical techniques can now preserve as much penile tissue and functional integrity as possible, without compromising oncological control. This minimizes the impact of disease and its treatment on the quality of life of the patient [10]. This study would like to find out the sexual function of the patients after partial penectomy.

2. MATERIALS AND METHODS

We reviewed a prospectively collected data from Haji Adam Malik General Hospital from 2017-2018 for all patients who underwent partial penectomy for squamous cell carcinoma of the Penis. Preoperative evaluation included clinical assessment of the genitalia and inguinal lymph nodes, followed by biopsy of the presenting lesion to confirm the diagnosis. Assessment of the tumor included size, location, degree of infiltration, and involvement of the corporal bodies. Imaging modality such as computed tomography was used. After that, we did sample collection by using International Index of Erectile Function (IIEF) and European Organisation for Research and Treatment of Cancer (EORTC) quality of life questionnaire (QLQ). There are 15 questions for IIEF questionnaire and 30 core questions for EORTC-QLQ questionnaire. IIEF questionnaire was then grouped into four domains, assessing erectile function, orgasmic function, sexual desire, intercourse satisfaction, and overall satisfaction represent domain A through E. Different measurement were concluded by EORTC QLQ. There are global health status (QoL), Physical functioning (PF), Role functioning (RF), Emotional functioning (EF), Cognitive Function (CF), Social Functioning (SF), Fatigue (FA), Nausea and Vomiting (NV), Pain (PA), Dyspnoea (DY), Insomnia (SL), Appetite Loss (AP), Constipation (CO), Diarrhoea (DI), and Financial Difficulties (FI). We did preoperative data collection and three months after surgery for the postoperative data collection during the first patient follow-up. The data collection is by interviewing the patients done the same interviewer for preoperative and postoperative data, Then we did a statistical analysis using paired t-test, and Pearson correlation analysis between preoperative and postoperative setting. $P < 0.05$ were considered as statistically significant.

3. RESULTS AND DISCUSSION

From 2017-2018, we found 10 patients underwent from Haji Adam Malik General Hospital Medan as our sample. We observed the clinical caractheristics of age and smoking history.

Table 1. Clinical characteristics of 10 patients

Characteristics		
Age (mean, SD)	48	± 16,26
Smoking History (n, %)	8	80%

Table 2. Preoperative and postoperative scores of IIEF-15

IIEF-15	Preoperative (mean, SD)	Postoperative (mean, SD)	p-value[a]
Erectile Function (A)	21,10 (±1,79)	12,10 (±1,79)	0,001
Orgasmic Function (B)	5,70 (±1,82)	3,10 (±0,99)	0,004
Sexual Desire (C)	8,10 (±0,99)	3,60 (±0,96)	0,014
Intercourse Satisfaction (D)	7,40 (±0,84)	3,70 (±0,67)	0,004
Overall Satisfaction (E)	7,40 (±0,96)	2,80 (±0,63)	0,027

[a]*p-value was analyzed with paired t-test; p-value <0,05 means significant*

Ten patients were categorized descriptively, the mean of age was 48 year-old (± 16,26). The youngest patient was 27 year-old, and the oldest was 79 year-old. Smoking was noted in 4 patients (80%).

IIEF domain was categorized into domain A (erectile function), B (orgasmic function), C (sexual desire), D (intercourse satisfaction), and E (overall satisfaction). The mean of preoperative domain A was 21,10 (±1,79) and postoperative was 12,10 (±1,79) and statistically significant (*p-value*= 0,001). Preoperative domain B was 5,70 (±1,82) and postoperative was 3,10 (±0,99) with significant result (*p-value*= 0,004). Sexual desire preoperative was 8,10 (±0,99) and postoperative was 3,60 (±0,96) and *p-value*= 0,014 which means statistically significant. Preoperative domain D, intercourse satisfaction was 7,40 (±0,84) and postoperative was 3,70 (±0,67), *p-value*= 0,004. Lastly, preoperative overall satisfaction was 7,40 (±0,96) and postoperative was 2,80 (±0,63), significant *p-value* was noted in this category (0,027). Correlation study found that there was a strong correlation on the sexual function assessment based on IIEF-15 questionnaire before and after the surgery and the results can be found in Table 3.

Table 3. Pearson correlation coefficient of IIEF-15 questionnaire variables

IIEF-15	*r*
Erectile Function (A)	0,862
Orgasmic Function (B)	0,813
Sexual Desire (C)	0,740
Intercourse Satisfaction (D)	0,820
Overall Satisfaction (E)	0,691

EORTG score is was consisted of 14 categories. Significant results were noted in quality of life, fatigue, and insomnia categories. Preoperative quality of life was 41,66 (±9,62) with postoperative 23,34 (±6,54), *p-value* was 0,016. In fatigue category, preoperative value was 57,78 (±15,53) and postoperative was 39,99 (±5,73), *p-value*= 0,015. Last statistically significant category was Insomnia. Preoperative value was 90,01 (±16,08) and postoperative was 16,65 (±17,55). Other categories were not statistically significant. Correlation study found that there was a strong correlation on the sexual function assessment based on EORTG questionnaire such as quality of life (r = 0,731), fatigue (r = 0,739), and insomnia (r = 0,655) before and after the surgery.

Penile cancer is one of the rare urogenital malignancies. Data from American Cancer Society shows that penile cancer account for 2.320 estimated new cases in 2018, or the fewest three in male malignancies. The risk factors are higher in uncircumcised men. Although the incidence quiet low, the management of the disease often becomes a burden for the patients, for example with total penectomy, even with partial penectomy or organ sparing surgery. The affected men with the management often demonstrate sexual function impairment. In this study we want to analyze the correlation between partial penectomy for penile cancer and the sexual function. We record the data using International Index of Erectile Function (IIEF) and European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC-QLQ). Out of 10 patients included in this study, the mean of the age is 48 years old (±16,26) and 8 patients with history of smoking. This data related with Harish [11] which stated the use of tobacco is a significant risk factor for penile carcinoma, and the use of more than one form of tobacco

Table 4. Preoperative and postoperative scores of EORTG

EORTG	Preoperative	Postoperative	*p*-value
Quality of Life	41,66 (±9,,62)	23,34 (±6,54)	0,016
Physical Functioning	41,33 (±16,27)	38,00 (±15,08)	0,069
Emotional Functioning	56,66 (±26,29)	55,01 (±16,75)	0,182
Cognitive Functioning	43,33 (±26,26)	51,67 (±19,95)	0,146
Sexual Functioning	46,66 (±17,24)	44,99 (±8,06)	0,111
Fatigue	57,78 (±15,53)	39,99 (±5,73)	0,015
Nausea and Vomting	53,33 (±23,30)	43,33 (±14,05)	0,189
Pain	66,66 (±22,22)	53,33 (±20,48)	0,709
Dyspnoea	46,66 (±35,83)	63,33 (±24,59)	0,164
Insomnia	90,01 (±16,08)	16,65 (±17,55)	0,040
Appetite Loss	53,33 (±42,16)	40,00 (±26,29)	0,713
Constipation	46,68 (±28,12)	30,00 (±29,19)	0,106
Diarrhoea	43,33 (±31,63)	50,00 (±17,60)	0,760
Financial Difficulties	46,66 (±32,20)	49,99 (±23,57)	0,653

Table 5. Pearson correlation coefficient of EORTG questionnaire variables

EORTG	*r*
Quality of Life	0,731
Physical Functioning	0,595
Emotional Functioning	0,459
Cognitive Functioning	0,494
Sexual Functioning	0,535
Fatigue	0,739
Nausea and Vomting	0,452
Pain	0,136
Dyspnoea	0,476
Insomnia	0,655
Appetite Loss	-0,134
Constipation	-0,542
Diarrhoea	-0,111
Financial Difficulties	-0,163

increases this risk. Cigarette smoking was a risk factor for penile carcinoma (OR 1,44), and the risk was greater for those who smoked >10 cigarettes daily (OR 2,14) [12]. Associated with our result, 80% of our sample has history of smoking. From IIEF questionnaire of all-5-domain shows significant results, *p-value*= 0,001; 0,004; 0,014; 0,004; and 0,027 respectively. This results show the same conclusion from Yu C, *et al*. That the sexual function after partial penectomy was significantly reduced. Significant results also noted from Sansalone S, *et al*. (2018). From this study, all domains are significantly related to partial penectomy. Other parameter is EORTC-QLQ questionnaire. From our study we found three significant categories, quality of life, fatigue, and insomnia. Further follow-up is necessary for the patients and it should be done every three months for the first two years and every six months until five years after the surgery. There is a limitation of the study was small sample size due to low number of penile cancer patient, and there can also be information bias because of the patient educational level that affects the level of understanding of the questionnaire.

4. CONCLUSION

Penile cancer management, even with organ-sparing technique, still brings drawbacks to the patients, in the whole domain of the IIEF questionnaire and impairs the quality of life of the patients.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/60948