Epidemiological Profile of Vulvar Carcinoma in Nepalese Women Managed at Bhaktapur Cancer Hospital

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Abstract

Introduction: This study aims to analyze the epidemiological risk factors and management outcomes of vulvar cancer in histologically confirmed cases based on tumor stage. Vulvar cancer is an uncommon form of cancer and presents a public health issue comparable to other types of malignancies. Cost associated with diagnosis, medical treatment, and psychological well-being of female.

Methods: This was a hospital-based retrospective descriptive study conducted over one month. Women with diagnosed case of vulvar carcinoma between 2021 to 2023 who were undergoing treatment at Bhaktapur Cancer Hospital in the Department of Gynecologic Oncology were included in this study. The risk factors, symptoms, stage, histological type, and treatment were recorded. The categorical variables obtained were summarized using frequency and percentage.

Results: total of 25 patients with biopsy confirmed vulvar malignancy were included in the study. The majority of the patients were postmenopausal, with ages exceeding 50 years, accounting for 18 (72%) cases, and were multiparous. Squamous cell carcinoma constituted 18 (72%) cases of the total histological types and was most common histological variant. The most frequently performed procedure was radical vulvectomy combined with bilateral pelvic lymphadenectomy which accounted for 14 (56%) of total procedure.

Conclusion: Vulvar carcinoma is a rare type of gynaecological malignancy in Nepal, and mainly affects women in their postmenopausal stage. The commonest type is the squamous cell carcinoma that is usually diagnosed in early cases. Risk factors were commonly parity and smoking. The primary therapy was surgery, particularly radical vulvectomy and lymphadenectomy.

Keywords: Cancer, Prognosis, Recurrence, Survival, Vulvectomy

Introduction

Carcinoma vulva is a rare malignancy and it account of 4% of among all gynecological malignancies.[1] Squamous cell carcinoma is most common histology followed by melanoma, Paget disease, basal cell carcinoma, and adenocarcinoma.[1]

The delay in diagnosis lead to poor disease outcome, and limited option of medical treatment, which in turn affects females psychosexual and psychosocial life.[2] Currently vulvar cancer increased by two fold.[3] Vulvar cancer has precursors lesion, like lichen sclerosus or lichen planus.[4] This cancer has long asymptomatic period, known risk factors and common anatomical access.[5] Due to above factors warrant more details study needed to establish standard approach for rare vulvar malignancy.

This study provides an insight about its risk factors and help in early detection and management plan. The aim of this study was to analyze epidemiological risk factors and the management outcomes of vulva cancer.

Methods

This was an observational retrospective descriptive study conducted at Bhaktapur Cancer Hospital, Gynecology Oncology Department, over one month

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from 6 February 2025 to 6 March 2025. The study was conducted after obtaining ethical approval from the Institutional Review Board, National Academy of Medical Sciences (NAMS), with reference number 1310/2081182. Randomly all cases with histology confirmed patients in the year 2021 to 2023 were included in the study, and 25 women with diagnosed case of vulvar carcinoma undergoing treatment was included in this study and patients without histological proof of vulvar carcinoma was excluded from the study.

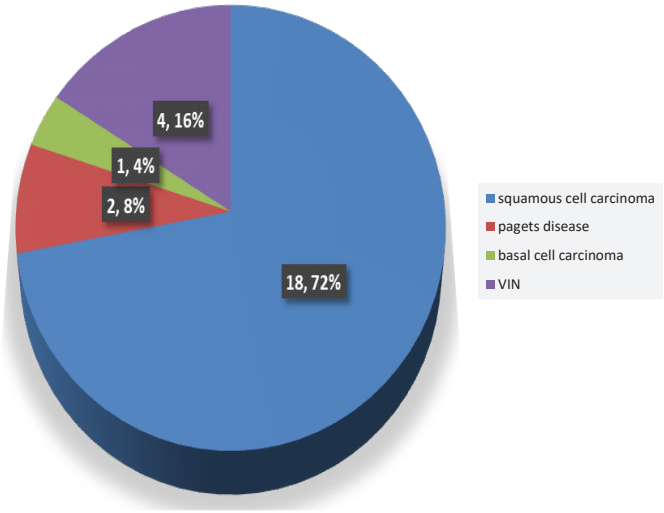
The data collected include demographic characteristics of the participants, histological classification of vulvar cancer, stage of the cancer and the treatment provided. Data were collected in the predefined data collection tool and entered in Microsoft Excel and analyzed by IBM SPSS 23 version. All the variables were entered, and descriptive statistics were used and measures of outcomes were represented as frequency and percentage.

Results

In this study, demographic parameters shows that 72% of cancers belonged to age group over 50 years. Most common age group for vulvar malignancy at our center was the age more than 50 years, and the least common prevalence at our center was age less than 40 years. Malignancy occurs more commonly in patients having greater than four parities. Smoking was also associated with 60% of vulvar malignancy in this study (Table 1).

Table 1. Demographic Characteristics of Participants (n=25)

Category	Frequency (n)	Percentage (%)
Age < 40 years	3	12%
Age 40–50 years	4	16%
Age > 50 years	18	72%
Parity 0	1	4%
Parity 1	1	4%
Parity 2	0	0%
Parity 3	0	0%
Parity > 4	23	92%
Smoker (Yes)	15	60%
Smoker (No)	10	40%



Figures 1: Histological types of vulva cancer

The pie chart (figure 1) shows that the most common histological type at our center was squamous cell carcinoma, which account for 18 (72%) cases, whereas the least common variant was basal cell carcinoma, which account for 1(4%) of cases, and others types lie in between.

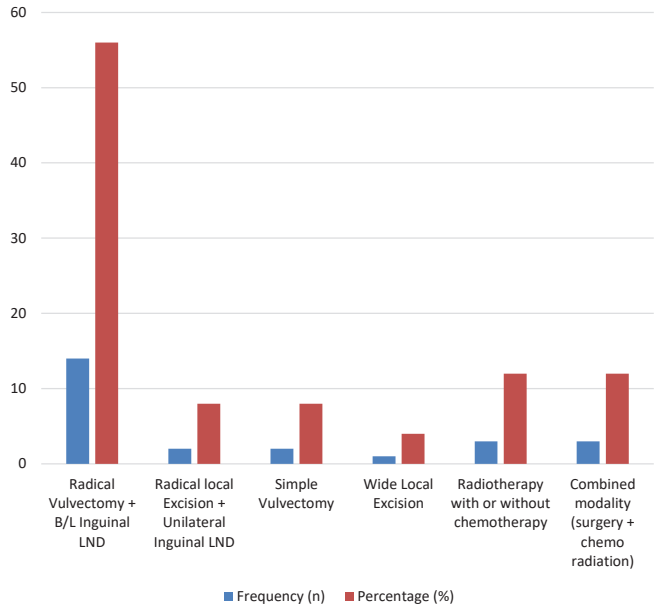


Figure 2: Various treatment provided for vulvar cancer in our study

In this study, radical vulvectomy and bilateral inguinal lymphadenectomy was the most common procedure done, accounting for 14 (56%) of all cases, and wide local excision was the least common procedure, accounting for 1 (4%) of all cases. Combined modality (surgery + chemo radiation) was done in 12% of the cases.

Table 2: Distribution of Participants by Stage of Carcinoma of Vulva

Stage	Frequency (n)	Percentage (%)
Stage I	17	81%
Stage II	2	9%
Stage III	0	0%
Stage IV	2	9%
VIN I	1	25%
VIN II	1	25%
VIN III	2	50%

In this study, the distribution of participants according to stage of carcinoma shows that the most common stage in malignant cancer is Stage I vulvar cancer, whereas the least common stage was Stage III. Among benign variants, VIN III was the most common finding and account for 50% of all benign variants.

Discussion

In our study, about 72% cancer occurred in the age group over 50 years, and 60% of vulvar cancers were associated with smoking. This finding is comparable to a similar study that shows that higher occurrence of cancer in those over 50 years of age and the an incidence of vulvar cancer in that study was 0.8%.[6]Another similar study done in 2023 in India showed that incidence of approximately 0.45% of total malignancy diagnosed in women, and the common group ranged from 30 to 90 years with mean age of 63.4 years. Most of the cases lie in the seventh and eighth decades of life, which account for 49% of all cases.[7] A similar study in the Department of Obstetrics and Gynecology, St, Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia, shows the majority of the patient were older than 40, belonged to rural area, and were multiparous.[8] A long-term multicenter, retrospective observational study in France shows that age is a risk factor for larger tumor size and more chance of radical surgery. In advanced age there is more chance of recurrence and impact on overall survival.[9] A comparable finding was observed in our study as well.

In this study, a more common incidence was found in the postmenopausal age group, and mothers having higher parity showed more vulvar cancer occurrence, and this finding is comparable with a study that shows, among all cancer patients, around 78% of patients (n=37) were postmenopausal at the time of diagnosis, and only 7 patients (15%) were nulliparous.[7]

In our study, the most commonly diagnosed stage was stage one, and a similar study at B. P. Koirala Institute in 2021 shows that the squamous cell carcinoma (93%) and 62% were stage I.[10] In similar study, they took a total of 96 cases with vulvar malignancy. Most of the cases diagnosed as Stage I were followed by Stage III. Similarity in findings could be due to pattern of malignancy, natural course, and common risk factors.

In this study, squamous cell carcinoma was the most common histological pathology, and stage I was the most common presentation at diagnosis, and a similar finding was found in a study done by Jeldu M.et al. in 2024 on the topic clinical characteristics and treatment outcomes of vulvar cancer patients at a tertiary setting in Ethiopia: a 6-year review.[8] Similarly, another study in 2024 shows vulvar cancer was a rare gynecological cancer, which account for nearly 5%–8% of all gynecological cancers in the United States. Almost 75% of vulvar cancer cases, the most prevalent histological type was squamous cell carcinoma (SCC).[11]

In our study, the most commonly performed surgery was radical vulvectomy with bilateral inguinal lymphadenectomy, which account for about 56% of cases, wide local excision 4%, radiotherapy with or without chemotherapy 12%, and combined modality 12%. This finding is comparable with the study done in the year 2021 by Alexander B. on the treatment of vulvar cancer, in which the predominant management is surgical, particularly for squamous cell carcinoma, but in advanced cancer, concurrent chemo-radiation is effective. Chemotherapy and immunotherapies are usually reserved for metastatic or palliative settings.[12]Another similar study shows 32% were treated primarily with surgery, 34% primarily with concurrent chemo-radiation and 28% with combined modality.[10] Similar finding was observed in a study done by Cheng H et al. on the analysis of treatment outcomes in advanced vulvar malignancy. In that study, surgery was the mainstay of treatment, but postoperative radiotherapy was used in advanced stages with margin positive.[13]

Study done by Singhal S et al. 2024 in Department of Radiation Oncology, Dr. BAIRCH All India

Institute of Medical Sciences, New Delhi, India. Total 82 cases were enrolled in the study and their management patterns differ widely, with the majority undergoing surgery (73.2%), followed by definitive radiotherapy with or without chemotherapy (10.9%), neoadjuvant radiotherapy and subsequent surgery (4.9%), and palliative care (10.9%). Post-operative radiotherapy was administered in 31.7% of cases. The disease-specific recurrence rate was found to be 32.9%, and the mortality rate was 30.5%.[14]

Another study done in the year 2025 recommends that vulvar tumors should be removed through radical local excision with histologically clear margins and both inguinal and femoral nodes should be removed. If a lymph node remains intact, it was associated with a higher risk of groin recurrence.

According to NCCN guidelines, the recommended follow-up should be performed every 3–6 months for the first 2 years, then every 6–12 months for 3–5 years, and yearly after that.[15]

In our study, we find similar incidence and comparable age groups to other multiple studies done in different parts of the world. Age specific findings and risk factors are similar to other studies done in this region. Our study findings seemed standard according to existing finding in different articles. This article provides details about epidemiological factors of vulvar cancer at Bhaktapur Cancer Hospital. It may help in understanding factors associated with vulvar malignancy in Nepal.

Similarly, the most common histological type in this study was squamous cell carcinoma, which is most commonly diagnosed in stage one, and similar findings are there in different articles. In our study, the most common surgical procedure was radical vulvectomy and bilateral inguinal lymphadenectomy. These finding are comparable with other studies.

There are a limited number of studies available on this topic in our part of the world. Thus, this article may act as a basis for scientific study of epidemiological risk factors of vulvar malignancy and will help for further extensive and multicenter research. This study contains few limitations. This study was done at a single center, and random sampling was done with a limited time period.

Conclusion

In Nepal, vulvar carcinoma is a relatively uncommon but critical gynecology malignancy that had been majorly diagnosed in postmenopausal females although a considerable percentage is also reported in younger populations. The most common histological subtype is Squamous cell carcinoma with the most common diagnosing stage being the Stage I probably because it is diagnosed early. The risk factors among the research sample were high parity and smoking. The most widely used type of treatment was radical vulvectomy with bilateral inguinal lymphadenectomy.

This is because of the limited regional data with regard to vulvar cancer and hence the study helps us to have valuable information with regard to the epidemiology and management of the disease in a Nepalese context. Multicentric and longitudinal testings are necessary to find unified methods of treatment to achieve better results in patients

Acknowledgement

We are extremely grateful to the department, colleague, operation team, and entire hospital family for their support in facilitating the article paper work.

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