A RETROSPECTIVE PATIENT CHART REVIEW OF VULVA CANCER MANAGEMENT AT MOI TEACHING AND REFERRAL HOSPITAL, ELDORET - KENYA

Chege H[1], Itsura P.M[1], Tonui P.K[1], Omenge E.O[1], Oyiengo V.N[2], Odongo B.E[3], Muliro N.H[3], Faiza A.N[1], Mburu A.W[1], Achia T[4], Rosen B[5]

Affiliation

1. Department of Reproductive Health, College of Health Sciences, Moi University School of Medicine, Eldoret, Kenya.
2. Garissa County Referral Hospital, Garissa, Kenya.
3. Moi Teaching and Referral Hospital, Eldoret, Kenya.
4. Division of Epidemiology and Biostatistics, School of Public Health, University of the Witwatersrand, South Africa.
5. Beaumont Hospital Dearborn, Michigan, USA.

Correspondence: chegehenrydr@yahoo.com

ABSTRACT

Background: Vulva cancer is a rare gynecological disease, and its management experience is limited to studies from a few tertiary centers. Most of these studies are retrospective. Vulva cancer usually affects postmenopausal women, but there is an increased incidence in younger women with Human Papilloma Virus (HPV) infection.

Objective: To determine the treatment outcomes in patients diagnosed with vulva cancer at the Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya.

Methodology: This was a retrospective chart review of vulva cancer patients managed between 2010 and 2018 at the MTRH. Data were analyzed using the STATA software, version 15.

Results: Medical charts of 61 patients diagnosed with vulva cancer during the study period were reviewed. The mean age for the patients was 54.3 (SD 15.1). The majority, 52.5% (n=32) of the patients, were married. The HIV positivity rate was high, 63.9% (n=39). Pain was the most common presentation symptom, 44.3% (n=27), followed by irritation at 32.8% (n=20). Squamous cell carcinoma was the most common histological type, 68.9% (n=42). Labia majora and minora were the most common tumor sites, 47.5% (n=29). The majority of the patients presented in stage II or higher 50.9% (n=31). Most patients, 75.4% (n=46) were managed surgically followed by chemo-radiation 6.6% (n=4). Thirty patients were referred for radiotherapy, but only 12 received it. Postoperative complications were reported in five patients. Postoperatively, 20 patients had positive inguinal nodes. The most common site for recurrence was local in six patients.

Conclusion: Many patients present with advanced-stage vulva cancer. Positive outcomes are low in vulva cancer as a majority of patients are lost to follow-up. Limited expertise and radiotherapy worsen treatment outcomes.

Keywords: Vulva cancer, histological types, complications, HPV, radiotherapy

INTRODUCTION

Vulva cancer is a relatively rare disease comprising 3-5% of all gynecological cancers. Most published reports on vulva cancer are based on retrospective clinicopathologic reviews (1). The diagnosis of vulva cancer is usually at an advanced stage attributed to patient and physician delaying factors, poor referral systems, and patients seeking alternative treatments (2). Vulva cancer predominantly affects older women, mostly postmenopausal (1-2). There is an increasing trend towards younger age at diagnosis, associated with the oncogenic Human Papilloma Virus (HPV) and chronic immunosuppression (3). Pruritus is the most common initial symptom. However, vulva cancer may be asymptomatic.

Squamous Cell Carcinoma (SCC) is the most common histological type, followed by melanoma, Paget's disease, basal cell carcinoma, and adenocarcinoma (4). Most SCCs occur on the labia majora but may also occur on the labia minora, clitoris, and perineum. Histological type is essential in determining the likelihood of lymph node metastasis. Lymphovascular Space Invasion (LVSI) is associated with an increased local recurrence rate. Vulva cancer spreads by direct extension to adjacent structures, lymphatic extension, and hematogenously. The lymphatic route is the primary mode of spread (2, 4). Vulva cancer is classified as either primary or secondary depending on the primary site of the tumor. Primary tumors originate from the vulva or involve both the vulva and vagina, while secondary tumors metastasize from other genital and extragenital sites. Vulva cancer is staged surgicopathologically using the International Federation of Gynecology and Obstetrics (FIGO) staging system (5).

Surgery is the primary management protocol for vulva cancer. Surgical excision should achieve lateral margins of at least one cm. Treatment is personalized based on lesion location to minimize treatment-related morbidity. Wound breakdown is a significant complication of vulva surgery (6). The two types of recurrent vulva cancer include those that recur at the local site and distant sites. Local recurrences occur at an earlier interval than distant recurrences. The response of vulva cancer to chemotherapy is variable. Chemo-radiation and Neo-adjuvant Chemotherapy (NACT) is associated with high morbidity than either treatment protocol alone (7). This study aimed to determine the treatment outcomes in patients diagnosed with vulva cancer at the Moi Teaching and Referral Hospital (MTRH), Eldoret, Kenya.

METHODOLOGY

This was a retrospective analytical study carried out at the Moi Teaching and Referral Hospital. A review of medical records of patients diagnosed with vulva cancer managed in the facility between 2010 and 2018 was done. Ethical clearance was sought and obtained from the Moi University and Moi Teaching and Referral Hospital Institutional Research and Ethics Committee (IREC) (FAN: IREC 3330). The participant variables: age at diagnosis, clinical presentation, tumor histological type and stage, treatment modalities, complications, follow-up, and survival rates were extracted into a data collection form. Statistical analysis was carried out using the STATA software, version 15. Statistic summaries were reported for patient demographics, histology, and treatment outcomes and presented in tables. Independent variables were also stratified by the outcome and absolute counts and proportions.

RESULTS

A total of 76 patients were diagnosed with and managed for vulva cancer during the study period. Eight medical charts were missed, 68 were retrieved, and seven were incomplete and thus excluded. Therefore, a total of 61 patient records were included in this review.

The range for the study participants was between 23 - 86 years. The mean age was 54.3 (S.D 15.1). The majority, 52.5% (n=32), 90.2% (n=55) and 85.2% (n=52) of the patients were married, non-smokers and from other counties, respectively. The HIV positivity rate was high, 63.9% (n=39) (Table 1).

Pain was the most common symptom at presentation, 44.3% (n=27) followed by irritation 32.8% (n=20), vaginal bleeding 6.6% (n=4), and swelling 8.2%(n=5). Twenty-three, 23.0% (n=14) of the patients sought treatment after 6-12 months (Table 2).

A majority, 73.7% (n=45), of the patients presented with a large mass, measuring greater than two (>2 cm). Late-stage presentation was common as 50.9% (n=31) presented in stage II or higher. Surgery was the primary management protocol in 75.4% (n=46) of all patients, followed by chemo-radiation, 6.6% (n=4) patients. Of the 30 patients referred for radiotherapy, 18 never received the service, 12 received the service, and only six completed the treatment. Postoperative complications occurred in five patients. Squamous cell carcinoma was the most common diagnosis, 68.9% (n=42) followed by adenocarcinoma 4.9% (n=3) and sarcoma 1.6% (n=1). However, no diagnoses of basal cell, melanoma, and verrucous types were reported (Table 3).

Table 1: Sociodemographic characteristics of patients managed for vulva cancer at the Moi Teaching and Referral Hospital (MTRH) between 2010 - 2018

Sociodemographic characteristics	Number (N=61)	Percentage (%)
Age (years)		
20-29	3	4.9
30-39	5	8.2
40-49	6	9.8
50-59	24	39.3
60-69	13	21.3
70-79	7	11.5
80+	3	4.9
Marital status		
Single	8	13.1
Married	32	52.5
Widowed	9	14.8
Not indicated	12	19.7
Education level		
None	1	1.6
Primary	9	14.8
Secondary	8	13.1
University/college	12	19.7
Not indicated	31	50.8
Residence		
UasinGishu	8	13.1
Other counties	52	85.2
Not indicated	1	1.6
Smoking		
Yes	2	3.3
No	55	90.2
Not indicated	4	6.6
Place of first contact		
Clinic	56	91.8
Ward	5	8.2
HIV status		
Positive	39	63.9
Negative	18	29.5
Unknown	3	4.9
Not indicated	1	1.6

Table 2: Clinical presentation of patients managed for vulva cancer at the Moi Teaching and Referral Hospital between 2010 - 2018

Characteristic	Number (N=61)	Percentage (%)
Presenting symptom		
Pain	27	44.3
Irritation	20	32.8
Bleeding	4	6.6
Swelling	5	8.2
Other	3	4.9
None	2	3.3
Symptom duration		
< 6 months	5	8.2
6-12 months	14	23.0
1-2 years	8	13.2
Not indicated	25	40.9

Table 3: Tumor characteristics and treatment of patients managed for vulva cancer at the Moi Teaching and Referral Hospital between 2010 - 2018

Characteristic	Number (N=61)	Percentage (%)
Tumor size		
≤ 2 cm	2	3.3
>2 cm	45	73.7
Not indicated	14	23.0
Tumor stage		
IA	2	3.3
IB	3	4.9
II	7	11.5
IIIA	4	6.6
IIIB	7	11.5
IVA	10	16.4
IVB	3	4.9
Not indicated	25	40.9
Primary treatment		
Primary vulvectomy	25	40.9
Surgery for recurrence	21	34.4
Chemo-radiation	4	6.6
Chemo then surgery	8	13.2
Surgery after sub-optimal surgery	1	1.6
Not indicated	2	3.3
Post operative complications		
Wound breakdown	3	5.0
Surgical site infection	1	1.6
Lymphocele	0	0
Lymphoedema	1	1.6
Deep Venous Thrombosis	0	0
Blocked drains	0	0
No complications	56	91.8
Histology		
Squamous cell	42	68.9
Melanoma	0	0
Basal cell	0	0
Adenocarcinoma	3	4.9
Sarcoma	1	1.6
Verrucous	0	0
Not indicated	15	24.6

Most tumors were located at the labia 47.5% (n=29). Inguinal lymphadenectomy results were available for 42.6% (n=26) of the patients, 32.8% (n=20) were positive. Lymph-vascular space invasion was positive in one patient. Surgical margins were positive in 6.6% (n=4), while 27.8% (n=17) had negative margins. Cisplatin was the most commonly used chemotherapy to downsize large tumors before the operation,19.7% (n=12) (Table 4).

Table 4: Surgical operative results of patients managed for vulva cancer at the Moi Teaching and Referral Hospital between 2010 - 2018

Characteristic	Number (N=61)	Percentage (%)
Tumor location		
Majora	18	29.5
Minora	11	18.0
Clitoris	5	8.2
Perineum	9	14.8
Anus	1	1.6
Rectum	2	3.3
Not indicated	15	24.6
Inguinal nodes		
Positive	20	32.8
Negative	6	9.8
Not indicated	35	57.4
Lymph-vascular invasion		
Positive	1	1.6
Negative	13	21.3
Not indicated	47	77.1
Surgical margins		
Positive	4	6.6
Negative	17	27.8
Not indicated	40	65.6
Chemotherapy for downsizing tumor		
Cisplatin	12	19.7
Carboplatin/Paclitaxel	3	4.9
Not indicated	46	75.4

Table 5: Recurrence and current disease status of patients managed for vulva cancer at the Moi Teaching and Referral Hospital between 2010 - 2018

Characteristic	Number (N=61)	Percentage (%)
Recurrence site		
Local	6	9.8
Distant	2	3.3
Both	3	4.9
Not indicated	50	82.0
Duration of recurrence		
Within 6 months	1	1.6
6-12 months	6	9.8
1-2 years	2	3.3
3 years	1	1.6
5 years	1	1.6
Not indicated	50	82.0
Current disease status		
Alive with disease	2	3.3
Alive with no evidence of disease	10	16.4
Dead	13	21.3
Lost to follow-up	33	59.0

Tumor recurrence at the local site was reported in six patients. Eleven percent (n=7) of the recurrences were reported within the first year after the operation. As of the study's close, 21.3% (n=13) of the patients had succumbed to the disease, while a majority, 59.0% (n=33), were lost to follow-up (Table 5).

DISCUSSION

The mean age and the range for vulva carcinoma reported in this study compared favorably to other studies in the Sub-Saharan African countries (2). In contrast, in Western Europe, the average ages for vulva cancer are over 70 (8). The median age in the Surveillance Epidemiology End Results (SEER) database study of the United States was 67 years, while the average age in Australia was 64 years (3). The variation in the mean age of diagnosis for vulva cancer between Sub-Saharan African countries and the developed countries may be attributed to the high rate of HPV and HIV infections in Sub-Saharan Africa (9). The highest incidence of vulva cancer in this study was reported in patients between 50-59 years, similar to a study conducted in China (10). Since this study was conducted in a tertiary referral center for gynecological oncology services, most of the patients were from the neighboring counties. This is attributed to insufficient expertise and equipment to provide oncology services in the country (11).

Pain was the most common symptom of presentation reported in this study. This compares unfavorably to Nigerian and Ghanian studies, which reported pain in 17.8% and 2% of all study participants, respectively (2, 12). Most patients presented after having had symptoms for 6-12 months, which compares favorably to a South African study, whose median duration of symptoms before diagnosis was six months (3). The delay in seeking medical treatment is attributed to the vague nature of the symptoms and patients seeking alternative treatment (2, 12). In this study, the presentation of patients in stages III and IV was 39.4%. This is lower than the rates reported in South Africa (53.3%), Ghana (45.5%), and Nigeria (81.8%) (3, 12-13). The higher rates in the Nigerian and Ghanaian studies could be attributed to the low study populations. Physicians might also contribute to delayed diagnosis by not

making the right diagnosis on time due to the rarity of vulva cancer (12).

A minority, 3.3%, of patients in this study gave a history of tobacco smoking. This is in keeping with the low prevalence of tobacco smoking in women in our population, 4.5% (14). Tobacco smoking, a risk factor for HPV acquisition, was reported by 62.4% of women with vulva cancer in a South African study. However, the population was urban-based and composed of Caucasian descendants (3). The rate of HIV positivity in this study was high, 63.9%, higher than the adult national prevalence of 4.9%: women 6.6% (15). In South Africa, HIV infection was diagnosed in 23.7% of women with vulva cancer. Vulva cancer is linked to persistent high-risk HPV infection. HIV infection is a predisposing factor for persistent high-risk HPV infection. Thus, higher incidence rates of vulva cancer are reported in high HIV and HPV prevalence settings (3). Squamous cell carcinoma was the most common histological diagnosis in this study. This is similar to other published works (2, 12). The majority of the tumors were located on the labia, followed by the perineum and clitoris. This is similar to other findings published elsewhere (1, 4). The tumor site determines whether the lymphadenectomy will be unilateral or bilateral. There was high positivity of inguinal nodes in this study after lymphadenectomy. This is consistent with the advanced stage disease presentation by the majority of patients in this study. Patients with positive groin nodes need postoperative radiation in the groin region (1).

Surgery is the primary treatment protocol for vulva cancer. Neoadjuvant chemotherapy is also in advanced-stage cancer and large tumors to downsize the tumor to ensure safe and effective surgical excision (3, 16). Preoperative chemotherapy shrinks the tumor sufficiently to render an otherwise inoperable tumor operable (4). This study reported a high default rate in patients referred for radiotherapy, similar to a Ghanaian study where one-third of the patients did not start treatment or defaulted during radiotherapy (2). This study's default rate may be attributed to the patients having to travel to the nation's capital, Nairobi, to access the only public institution with radiotherapy services. Postoperative complications after groin lymph node dissection were reported in five patients. This is comparable to a study in Nigeria, where nine patients had postoperative complications (8). Groin lymphadenectomy is associated with significant short and long-term morbidities, including wound infection, wound breakdown, and lymphoedema (17). Most of the recurrences are at the local site and are related to the nodal status at the time of primary surgery. However, distant and recurrences at both the local and distant sites have been reported (2, 4). Moreover, 80% of recurrences are reported within the first year following treatment (2-4). Recurrence is an indicator of poor prognosis (3). Follow-up is essential to detect recurrence early and at a potentially curable state. The follow-up period for most centers is every three months for the first year, six-monthly for the second year, and yearly after that (4). However, a majority of the patients are lost to follow-up (2).

Study limitations

The study is limited by its retrospective nature, small patient numbers, missing patient records and data, and loss to follow-up. This being a single institution study bias cannot be ruled out.

CONCLUSION

Many patients present with advanced-stage vulva cancer. Positive outcomes are low in vulva cancer as a majority of patients are lost to follow-up. Limited expertise and radiotherapy worsen treatment outcomes.

RECOMMENDATIONS

Vulva examination should be considered in HIV screening programs. Loss-to-follow-up programs should be put in place in vulva cancer treatment programs. Besides, access to expertise and radiotherapy services in low-resource settings should be increased.

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