

Vulvar Cancer – What Do We Know About Our Patients?

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ABSTRACT

Introduction: Vulvar cancer is uncommon in Singapore and to date there have been no local reports on this rare cancer. This is a descriptive study that aims to evaluate our patients' profiles, their management and their outcomes.

Materials and Methods: Between January 1981 and December 1998, there were 35 patients with vulvar cancer treated at KK Women's and Children's Hospital. The case records of these patients were reviewed. Survival was calculated using the Kaplan-Meier method.

Results: The modal age at diagnosis was 74.0 years (range 17.0 - 89.0 years). Chinese patients accounted for 88% of the study group, Malays for 6%, Indians for 3% and other races made up 3% of the study group. The most common presenting symptom was an ulcer or lump (83.8%). Squamous cell carcinoma was the most common histological type (80.0%). Vulvar intraepithelial neoplasia III was found in 20% of the cases. There were five patients with other lower genital tract malignancies. Surgery was the most common treatment modality and wound breakdown was the most common complication. The overall five year survival was 75.9%. For stage 1&2 disease, the five year survival was 90.0%. For stage 3&4 disease, the five year survival was 26.0%.

Conclusion: The rarity of vulvar cancer makes it best treated in a tertiary centre. There is a definite survival advantage in early diagnosis and treatment of vulvar cancer. Lymph node surgery was associated with a longer operating time and a higher chance of wound breakdown.

Keywords: vulvar cancer, squamous cell carcinoma, lymph node surgery, surgery, radiotherapy

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INTRODUCTION

Vulvar cancer is uncommon in Singapore. From 1981 to 1998, there were 35 patients with vulvar cancer treated in the KK Women's and Children's Hospital. This accounted for 1.5% of all the gynaecological cancers during this period. To date, there have been no local reports on vulvar cancer. There has been a dearth of regional reports as well. This is a descriptive study that aims to evaluate our patients' profiles, their management and their outcomes.

MATERIALS AND METHODS

Between January 1981 and December 1998, 35 patients with vulvar cancers were treated at KK Women's and Children's Hospital. The patients' case records were reviewed. The data was analysed using the Statistical Package for the Social Sciences. The survival was calculated using the Kaplan-Meier method.

RESULTS

I. Epidemiology

Overall, two patients were treated at our centre per year. From January 1981 to December 1990, there were nine patients. From January 1991 to December 1998, there were 26 patients.

The modal age at diagnosis was 74.0 years (range 17.0 - 89.0 years). There were two patients who were less than 40 years old, while there were 33 patients who were 40 years old and older. The mean parity was 4.3 (range 0 - 13.0). There were five nulliparous patients and 30 multiparous patients. The distribution of race reflects the racial distribution in the local population. Chinese made up 88% of the study group. Malays comprised 6%, the Indians comprised 3% and other races comprised 3% of the study group. The smoking status was stated in 11 of 35 patients; one was a smoker while 10 were non-smokers.

The most common presenting symptom was an ulcer or a lump. This occurred in 83.8% of the patients (Table I). The mean duration of the presenting symptoms was 7.2 months (range 1.0 - 36.0 months). Lateral lesions occurred in 51.4% of the patients, while

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Table I. Clinical features of the vulvar cancers.

	Number of patients (%)
Histology	
Squamous cell carcinoma	28 (80.0)
Adenocarcinoma	4 (11.4)
Malignant melanoma	1 (2.9)
Granular cell tumour	1 (2.9)
Presenting Symptom	
Ulcer/Lump	29 (83.8)
Itch	7 (20.0)
Bleeding	4 (11.4)
Others	2 (5.7)
Location	
Right	12 (34.3)
Left	6 (17.1)
Periclitoral	11 (31.4)
Posteromidline	6 (17.1)
Method Of Diagnosis	
Punch Biopsy	18 (51.4)
Excision Biopsy	13 (37.1)
Wedge Biopsy	3 (8.6)
Not Stated	1 (2.9)
Preinvasive Disease	
Nil	22 (62.9)
VIN 3	7 (20.0)
VIN 2	5 (14.3)
VIN 1	1 (2.9)
Paget's Disease	2 (5.7)

Table II. Correlation between clinical evaluation of lymph node status and histological evaluation.

	Histo negative	Histo positive	Histo unknown	Total
Clinically negative	10	3	13	26
Clinically positive	4	2	3	9
Total	14	5	16	35

midline lesions accounted for 48.6% of the lesions (Table I). The punch biopsy was the most common method of diagnosis. It was used in 51.4 % of the cases. The next most commonly used method was the excision biopsy, which was used in 37.1% of the cases (Table I).

II. Histopathology

Squamous cell carcinoma accounted for 80.0% of the cases (Table I). Four patients (11.4%) had adenocarcinoma and 1 patient (2.9%) had a malignant melanoma. One patient (2.9%), a 17-year-old Indian girl, had a granular cell tumour. This histological type has an unknown malignant potential⁽¹⁾ and was thus not included in the rest of the data analysis.

There was associated preinvasive disease in over 30% of the vulvar tumours. Vulvar intraepithelial neoplasia III (VIN III) was found in 20% of the cases (Table I). The depth of invasion was stated in 20 of 35 cases. The mean depth of invasion was 8.2 mm

(sd = 5.8 mm). Only one patient had 1.0 mm invasion. This patient was a 65-year-old Chinese lady who had postmenopausal bleeding for one month. There was a 2.0 cm diameter warty lesion on the right vulva and a 2.5 cm diameter ulcerative tumour of the cervix (FIGO stage IIA). The vulvar biopsy showed early invasive squamous cell carcinoma with 1.0 mm invasion and VIN III. The cervical biopsy revealed grade 2 squamous cell carcinoma. The lymph node status of this patient was not surgically evaluated as she opted for radiotherapy to treat both her cancers.

On clinical evaluation, nine patients were thought to have positive groin lymph nodes and 26 patients were thought to have negative groin lymph nodes. Of the 35 patients, 19 had histological evaluation of the lymph nodes. Among the 26 patients with clinically negative lymph nodes there were three that were proven to be histologically positive. As for the nine patients who were thought to have clinically positive lymph nodes, four actually were negative and two patients were positive on histology. The remaining three patients did not have histological evaluation of their lymph nodes. Of these patients, two were treated with radiotherapy and one had inadequate data in the casenotes regarding lymph node evaluation. Overall, five patients had histologically positive nodes and 14 patients had histologically negative nodes (Table II).

In the study, five patients had other lower genital tract malignancies. Three patients had synchronous cancers of the cervix. Two patients had cancer of the cervix 20 and 30 years before the diagnosis of the vulvar cancer respectively.

III. Treatment

Sixteen patients had a radical vulvectomy, eight patients had a radical local excision, one patient had a simple vulvectomy, and one patient had an anterior exenteration. Eight patients were treated with radiotherapy (Table III). Fourteen patients had bilateral inguino-femoral lymphadenectomy, three patients had unilateral lymphadenectomy and one patient had debulking of enlarged lymph nodes (Table III).

The mean surgical time was 136.8 min (sd = 63.4 min). The mean surgical time for vulvar surgery without lymph node surgery was 81.4 min (sd = 61.7 min). The mean surgical time for vulvar surgery with lymph node surgery was 166.1 min (sd = 41.8 min). The mean hospitalisation stay for postoperative patients with lymph node surgery was 25.5 days (sd = 15.8 days), while those without lymph node surgery stayed 15.0 days (sd = 13.4 days) postoperatively.

The most common complication encountered postoperatively was wound breakdown, which occurred in nine patients. Of these nine patients, eight had lymph node surgery in addition to vulvar surgery. Two patients had urinary tract infection. One patient had bilateral lymphoedema (Table III).

IV. Survival

The patients were followed up for a mean period of 39 months (range 3-215 months). There were three patients who defaulted follow-up. For stage 1 disease, there were no mortalities (Table IV). The overall 5-year survival was 75.9%. The median survival time was 167.0 months (Fig. 1).

The numbers of patients within each stage of disease was too few to allow individual stage comparisons. The survival data were thus compared between stages 1 & 2 disease and stage 3 & 4 disease (Fig. 2). For the stage 1 & 2 disease, the median survival was 167.0 months. The 5-year survival was more than 90.0%. In the stage 3 & 4 disease, the median survival was 45.7 months. The 5-year survival was 26.0%.

DISCUSSION

From January 1981 to December 1990, there were only nine patients (1.0 per year) while from January 1991 to December 1998 there were 26 patients (2.9 per year). The number of patients reported to have vulvar cancers in Singapore during this period of time was 166 (figure obtained from the Singapore Cancer Registry). This appeared to be lower than that quoted in other studies^(2,3). The reason for this is not known but may reflect a racial predilection for vulvar cancer in the West. There was an increase in the number of patients over the past nine years. This could be due to a true increase in the number of patients with vulvar cancer, an increase in the number of referrals or to improved diagnosis and better cancer patient registration. The racial distribution of the disease reflects the racial distribution in the population and was thus not more common in any particular racial group. The modal age at diagnosis was 74.0 years. This is a cancer that tends to affect older patients as shown in other studies^(3,4). This is one of the reasons for an individualised approach towards treating these cancers.

Other studies showed a high proportion of nulliparous patients (25% to 38%) but our study had a nulliparous proportion of 14.3%⁽³⁾. Smoking is an important predisposing factor for vulvar neoplasia⁽⁵⁾. Unfortunately, the smoking status was only documented in 11 of the 35 patients. Out of these

Table III. Modality of treatment and postoperative Complications.

	No. of patients
Primary Treatment	
Radical Vulvectomy (RV)	16
Simple Vulvectomy (SV)	1
Radical Local Excision (RLE)	8
Anterior Exenteration (AE)	1
Radiotherapy (RT)	8
Lymph Node Surgery	
Bilateral Inguino - femoral lymphadenectomy	14
Unilateral Inguino - femoral lymphadenectomy	3
Debulking of lymph nodes	1
Lymph Node Biopsy	1
Complications of Surgery	
Wound Infection	9
Urinary Tract Infection	2
Bilateral Lymphoedema	1

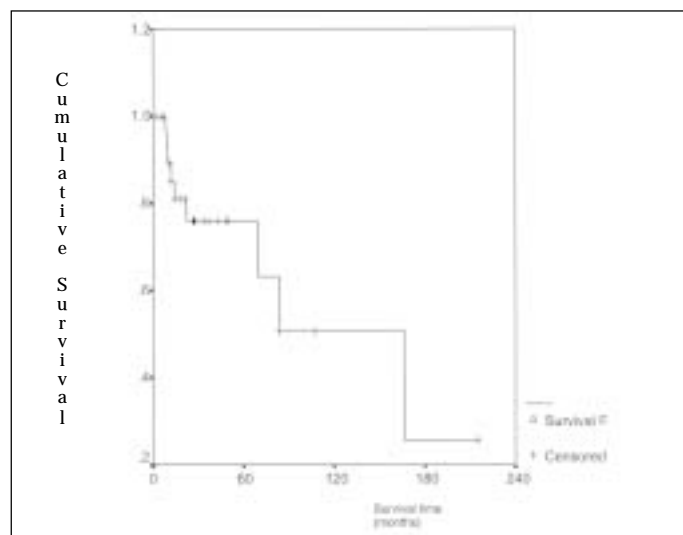


Fig. 1 The Overall Survival of the Vulvar Cancer Patients.

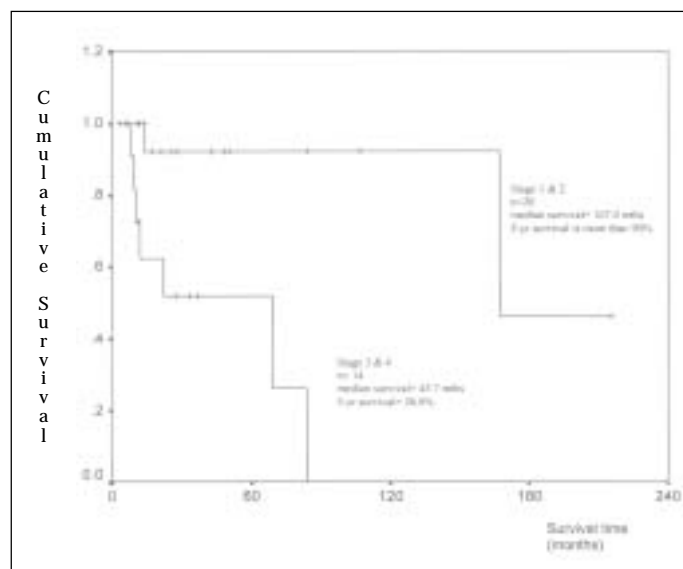


Fig. 2 Survival of Stage 1 & 2 Disease vs Stage 3 & 4 Disease.

Table IV. Number of deaths among patients with vulvar cancer.

Stage	n	Number of Deaths	Died of Disease
1	5	0	0
2	15	2	2
3	9	5	4
4	5	2	2

11 patients, only one was a smoker. Hence, the prevalence of smoking in our study population was low.

The most common presenting symptom was a lump or ulcer and this occurred in 83.8% of the patients. The mean duration of the presenting symptoms was 7.2 months. One patient had vulvar itch for 36 months before the diagnosis was made. When she was diagnosed, she already had stage 2 disease. The delay in the diagnosis was similar to that quoted in other studies⁽³⁾. This can be reduced by greater patient and physician education regarding the symptoms of vulvar cancer.

Squamous cell carcinoma was the most common histological type occurring in 80.0% of the cases. This was similar to the proportion quoted in other studies⁽²⁾. There was preinvasive disease associated with more than 30% of the vulvar cancers. In 20% of the cases, there was associated vulvar intraepithelial neoplasia grade III (VIN III). The natural history of VIN is not well documented because it is usually treated with complete excision⁽¹⁾. Up to 30% of patients with VIN have associated cervical or vaginal intraepithelial neoplasia⁽¹⁾. This implies that VIN should be followed up with diligence to detect lower genital tract neoplasms. Before any treatment is carried out on patients with vulvar cancer a colposcopy of the cervix and the vagina should be done.

The depth of invasion is an important prognostic factor. A review of the literature shows that the only patients with insignificant risk of lymph node metastasis are those with a depth of invasion of 1 mm or less^(2,4). There was only one patient in the study with 1 mm or less depth of invasion. She had

a concurrent cancer of the cervix and required radiotherapy for treatment. Unfortunately, there were too few cases of early vulvar cancer in our study to comment on the management of this entity.

Nineteen of the 35 patients with vulvar cancer had their groin nodes evaluated histologically. It was interesting to note that in 7(36.8%) of these patients the histological assessment did not correlate with the clinical one.

With respect to treatment, surgery was the main modality. A radical vulvectomy was done most often. Radical local excision was done in eight patients. One patient had a simple vulvectomy. She was 87 years old at diagnosis and had a stage 2, grade 1 squamous cell carcinoma. She was not keen on extensive treatment. The patient who had an anterior exenteration presented with a 1.0 by 1.5 cm tumour around the clitoris which extended up into the lower two thirds of the vagina around the urethral region and the base of the bladder. The histology was moderately differentiated adenocarcinoma. The choice of operations done did not appear to follow any particular time trend.

Much of the revolution in treatment has involved early stage disease. Radical vulvectomy is a severely disfiguring surgery. Disturbances of sexual function and body image are a major long term morbidity associated with radical vulvar surgery⁽²⁾. DiSaia et al advocated wide local excision as an alternative for small early lesions provided the superficial inguinal lymph nodes were negative⁽⁶⁾. Hacker et al proposed conservative resection of the vulvar primary tumour if the lesion is unifocal and the rest of the vulva is healthy⁽²⁾. From Table V, the majority of the patients (3 of 5) were treated with radical surgery despite the move towards vulvar conservation. Of these patients, two had periclitoral lesions and one of them had extensive VIN III.

Lymph node surgery doubled the mean operating time from 81.4 min (sd = 61.7 min) to 166.1 min (sd = 41.8 min). Lymph node surgery also increased the mean postoperative hospitalisation stay from a mean of 15.0 days (sd = 13.4 days) to 25.5 days (sd = 15.8 days). The mean postoperative hospitalisation

Table V. Treatment of stage 1 disease.

Pt	Year	Site	Concurrent Disease	Vulvar Surgery	Incision	Lymph Node Surgery	Radiotherapy
1	1998	Posteromidline	Ca cervix stage 2A	N	NA	No	Yes
2	1997	Periclitoral	Nil	RV	Separate	Bil inguinofemoral	No
3	1995	Periclitoral	VIN 3	RV	Butterfly	Bil inguinofemoral	No
4	1991	Lateral	Nil	RV	Separate	Uni inguinofemoral	No
5	1981	Lateral	Nil	SV	NA	No	No

stay is similar to the 21.5 days quoted in the study by Podratz et al⁽³⁾ on patients who had vulvar resection with inguino-femoral node dissection. The length of the hospital stay postoperatively reflects the concern about poor wound healing associated with these operations. There are shearing forces during flexion and extension of the lower limbs, lymphatic fluid accumulation when lymphadenectomy is done and potential necrosis of the skin flaps required to cover the defects. Further emphasizing this is that the most common postoperative complication was wound breakdown. In the nine patients who had wound breakdown, 8 (88.9%) had lymph node surgery. Of the 19 patients who had vulvar surgery and lymph node surgery, 8 (42.1%) had wound breakdown. Among the eight patients with only vulvar surgery, only 1 (12.5%) had wound breakdown. The type of incision was stated in 17 of the 19 patients. Of the six patients who had a butterfly incision, 4 (66.6%) developed wound breakdown. Of the 11 patients who had separate incisions, 4 (36.4%) developed wound breakdown.

The survival data show a clear advantage to early diagnosis and treatment of vulvar cancers. Although the presence of inguino-femoral lymph node metastasis is the most important marker of poor prognosis for vulvar cancer⁽⁵⁾, the small numbers of patients (19/34) who had their nodes evaluated do not allow meaningful comparisons in survival between those with positive and negative lymph nodes.

CONCLUSION

There appears to be a lower incidence of patients with vulvar cancer in Singapore. The reason for this is not entirely clear. However, the rarity of this disease makes it best treated in a tertiary centre following a protocol. The diversity of treatment strategies in this study, which spans 18 years, reflects the changing approach to vulvar cancer.

The local patient profile was similar to that quoted in other studies. The more frail patients generally opted for radiotherapy or simple vulvectomy. Lymph node surgery was associated with a longer operating time and a higher chance of wound breakdown. Patients would benefit from modalities that would improve wound healing such as separate incisions.

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