DOI: 10.7860/JCDR/2025/80090.21346

Case Report

Pathology Section

Vulval Verrucous Carcinoma: A Case Report of Rare Subtype

APOORVA PANDE[1], SAMARTH SHUKLA[2], MILIND PANDE[3], SUHIT NASERI[4], SAURABH GAWAND[5]

ABSTRACT

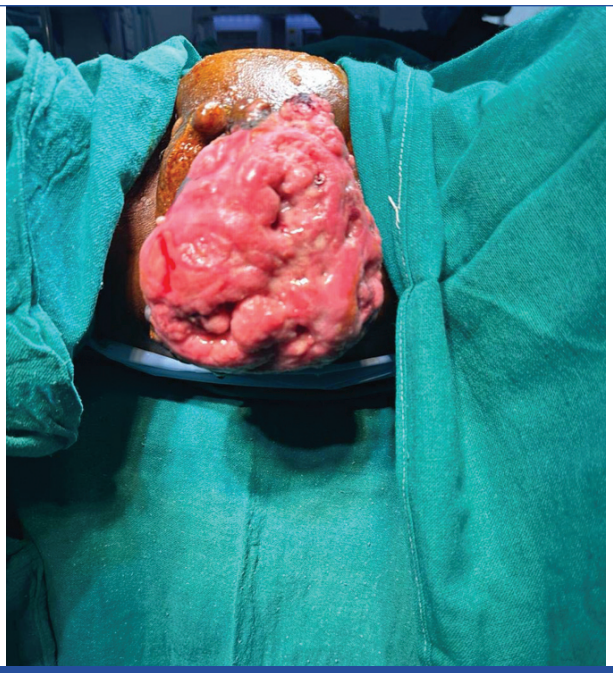
Verrucous Carcinoma (VC) of the vulva is a rare subtype of Squamous Cell Carcinoma (SCC) that typically manifests as a slowly growing, wart-like lesion with a generally favourable prognosis. It is considered a rare occurrence due to its very low incidence in valvular cancers, with an incidence of approximately <1%. There are different underlying associated aetiologies for VC, and risk factors such as smoking, hormonal deficiency, and diabetes might also play a role. VC predominantly affects elderly, postmenopausal women, with most cases >60 years of age. On the contrary, this is a rare case of a 37-year-old female who came to the gynaecology outpatient department with a complaint of a rapidly growing mass in the vulvar region and urinary retention for the past six months. She was managed by surgical approach aiming to ensure complete excision of the tumour while preserving surrounding healthy tissue, reflecting a good treatment strategy for this rare and indolent form of vulvar cancer in a relatively young female.

Keywords: Cauliflower lesions, Exophytic growth, Genital warts, Valvular lesions

CASE REPORT

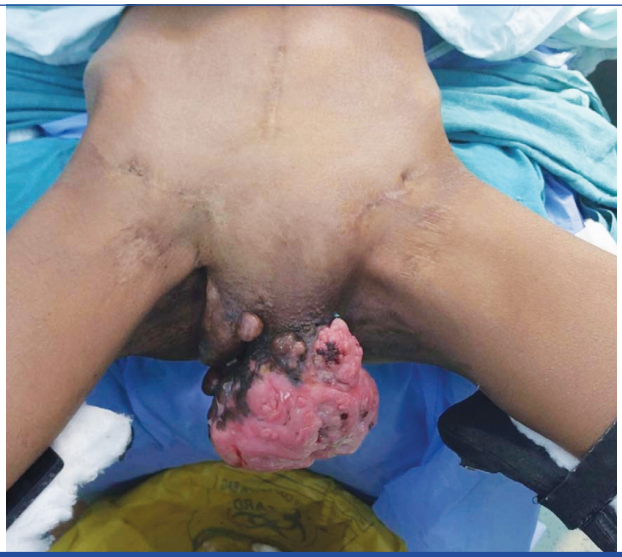
A 37-year-old female patient presented to the gynaecology outpatient department with a six-month history of a rapidly growing mass in the vulvar region. The lesion had developed into a cauliflower-like, exophytic growth and was associated with a foul-smelling discharge. Alongside the local symptoms, the patient reported significant weight loss and decreased appetite, which marked a possibility of systemic involvement. There were no other significant co-morbidities noted. Additionally, she experienced urinary retention for the past six months, which can be attributed to the growing mass which might be impacting the urethra or surrounding structures.

Physical examination showed a vulvar growth measuring approximately 12.0×9.5×5.5 cm. Right lip measured 8.5×4.5×2.5 cm and left was found to be 15.0×10.0×7.5 cm [Table/Fig-1,2].



[Table/Fig-1]: Physical overview of the lesion.

A differential diagnosis of Human Papillomavirus (HPV)-associated SCC, condyloma acuminatum, and VC was consideration. The patient was planned for immediate wide local excision, as the mass

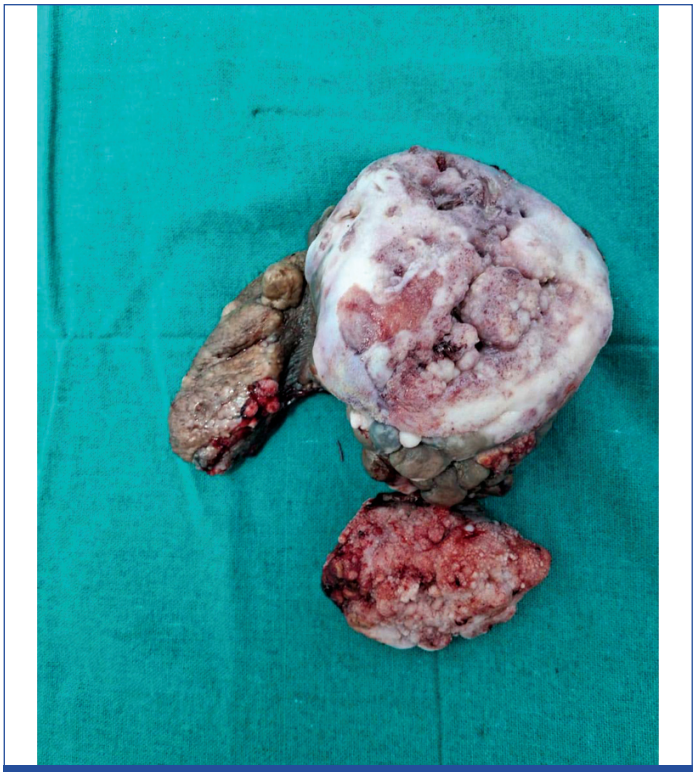


[Table/Fig-2]: Physical cauliflower like appearance of the lesion.

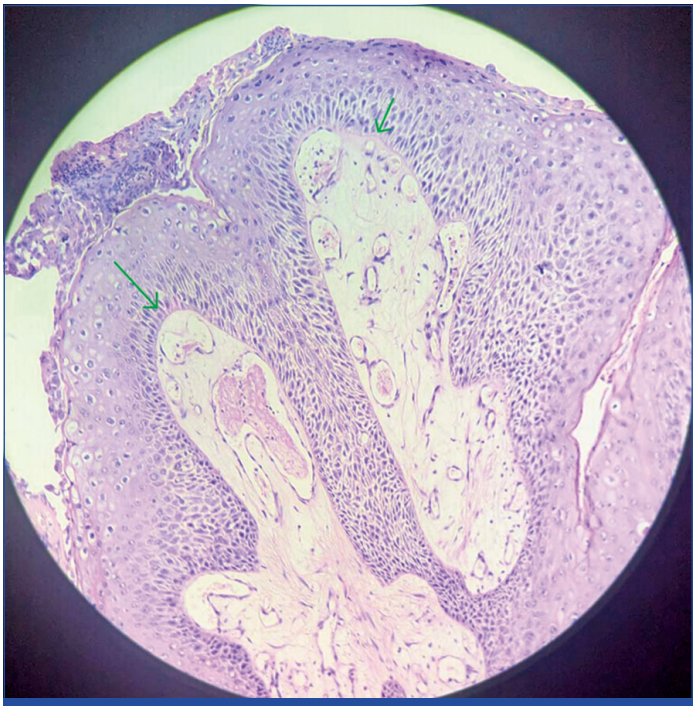
was large and had begun to affect her normal routine. The procedure was uneventful, and a single, irregular, yellowish-brown tissue mass was excised and the specimen underwent histopathological evaluation [Table/Fig-3].

The histopathological analysis of the valvular growth section showed pus oozing out on being cut. Sections from superior, inferior, right lip, and left lip margins, and the base, showed hypertrophied squamous epithelial lining with no evidence of invasion into the deeper tissues. A section from the right lip showed hypertrophied squamous epithelial lining, and deeper tissues showed fibrocollagenous, unremarkable adnexal structure, moderate dysplasia, and were negative for infiltration by malignant cells on histopathology. Tumour mass base section showed histopathological features such as prominent papillomatosis, hyperkeratosis, and acanthosis. The interface between the tumour and stroma was relatively sharp, with broad bulbous pattern of infiltration and pushing margins, which ruled out the differential diagnoses and concluded the diagnosis of 'VC' [Table/Fig-4,5].

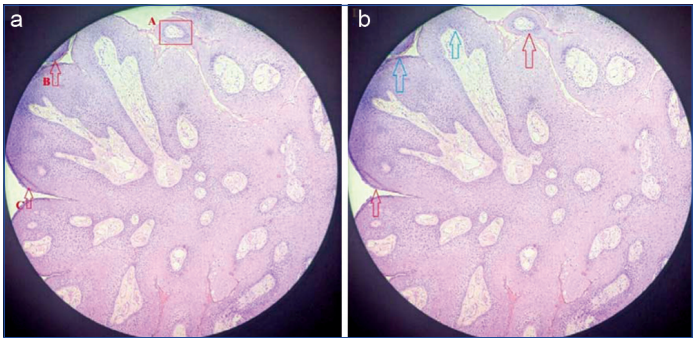
Additionally, lymphovascular and neural invasion were found to be negative. The patient was discharged on the 7th Postoperative Day (POD) with advice of first follow-up at 15th POD. She will be under



[Table/Fig-3]: Excised specimen.



[Table/Fig-4]: Haematoxylin and eosin-stained histopathology slide showing large polygonal squamous cells with abundant pink cytoplasm and enlarged nuclei with minimal nuclear atypia (4x).



[Table/Fig-5]: Haematoxylin and eosin-stained histopathology slide showing mass shows prominent papillomatosis, hyperkeratosis, and acanthosis. The interface between the tumour and stroma is relatively sharp with broad bulbous pattern (Red arrow) of infiltration and pushing margins (Blue arrow) (4x).

follow-up as per the schedule: three-monthly follow-ups until a year, and six-monthly follow-ups for next two years, which will be made yearly thereafter. First three months of follow-up showed the patient recovering well and continuing a normal routine.

DISCUSSION

The VC of the vulva is a rare type of SCC, comprising only about 1% of vulval tumours. Grossly, VC presents as a raised, cauliflower-like growth. Histologically, it often exhibits organised keratinocytes, increased thickness of the outer layer of skin (acanthosis), and abnormal accumulation of keratin (either parakeratosis or orthokeratosis), with minimal signs of cellular abnormalities [1]. A distinctive feature is the blunt invasion with bulbous rete ridges. Unlike well-differentiated SCC, VC lacks cytologic abnormalities, irregular nests of carcinoma cells, or a fibrous stromal response. While local recurrences are possible, distant metastases from VC are rare [1,2].

Differential diagnoses, such as infectious causes or benign conditions such as condyloma acuminata, must be considered. A thorough evaluation is essential and should begin with a detailed gynaecological examination to assess the lesion's extent and its impact on surrounding structures [2]. A biopsy is crucial for confirming the diagnosis and determining the histological characteristics of the tumour, with particular attention to including adjacent stroma to differentiate malignant lesions from benign ones, as vulvar cancer can be mistaken for condylomata both macroscopically and microscopically [2,3]. Histologic examination remains the gold standard for diagnosing VC. It is vital for pathologists to conduct a detailed examination to avoid pitfalls such as superficial sampling or overlooking invasive components, which can lead to misdiagnosis. Given the lesion's exophytic nature, particularly in elderly patients, it is crucial to perform a wide excisional biopsy with clear margins [4].

Understanding the pathogenesis of vulvar lesions is crucial for both diagnosis and treatment. Recent research has highlighted the significant role of HPV in the development of vulvar lesions, particularly those with a verrucous or exophytic appearance [5,6]. HPV is well-established as a major contributing factor in the aetiology of SCC of the vulva. However, the pathogenesis of vulvar lesions is multifactorial and involves several other factors that can create a conducive environment for lesion development [1,6]. In addition to HPV infection, smoking, tobacco use, and certain hormonal imbalances during menopause have been reported to play a crucial role in the progression of these valvular lesions, along with diabetes, which is potentially related due to mechanisms related to inflammation and immunosuppression [5].

Though, HPV has been a well-documented risk factor, there are cases of vulvar lesions (both cancerous and precancerous) noted in patients with a negative HPV infection. As also noted in this case, which was HPV negative though, developed the lesion to its current dimensions. These lesions might be associated with other underlying aetiologies, such as inflammation and chronic irritation, which have the potential to lead to pathological changes in the vulvar tissue [3,5].

Between 2004 and 2016, there has been a notable rise in the occurrence of vulvar SCC, potentially attributed to the heightened prevalence of risk factors across the population. Factors such as smoking, obesity {(Body Mass Index (BMI) >30} and the use of menopausal hormones have been linked to an elevated susceptibility to vulvar SCC [7]. There are currently considered to be two distinct pathways for vulvar carcinogenesis. The first pathway is associated with mucosal HPV infection, while the second is related to chronic inflammatory conditions or autoimmune processes affecting the vulva [8].

VC is a tumour with thickness that can invade and compress the underlying stroma with 'pushing margins' [6], which was also noted in this case. A 20-year retrospective study showed a mean patient

age of 55 years and an average disease course of 26 months, with exophytic growth, pain, and pruritus as common findings [3]. A similar research observation was concluded by Dryden SM et al., reported a significant diagnosis of VC in elderly females [1]. Itching and cauliflower-like growth have been commonly reported in most cases [6,9]. This case presented contrasting features in terms of patient's age and symptomatic presentation of only six months, during which the growth of a large valvular mass was noted. Though, there is research evidence reporting clinical presentations for longer durations [6].

Despite its generally favourable prognosis, VC has a notable tendency for high recurrence rates. This recurrence is primarily due to the potential presence of residual tumours if the surgical resection margins are not adequately clear. Most cases of VC are managed by surgery, although overall survival has been noted to improve when the patients were surgically managed by both primary site and regional lymph node surgery which was evident by multivariable Cox survival analysis [1]. A similar management by surgical excision was carried out in this patient, and no recurrence was noted at third month follow-up.

A wide and deep surgical resection is necessary to ensure that the tumour is completely removed while preserving surrounding healthy tissue. This is crucial because even small amounts of residual tumour at the margins can lead to recurrence, which is associated with a significantly worse prognosis [1,4]. This approach not only helps in the complete removal of the tumour but also allows for thorough histopathological analysis to confirm that the margins are free from cancerous cells. Effective management of VC requires a combination of careful surgical technique and precise pathological evaluation.

CONCLUSION(S)

In conclusion, VC might have a good prognosis with timely diagnosis and appropriate surgical management, with primary focus on margin control to avoid recurrences. A good prognosis is also complemented by a vigilant histopathologic evaluation. Though, more research is needed for refining risk stratification in HPV-negative cohorts.

REFERENCES

[1] Dryden SM, Reshko LB, Gaskins JT, Silva SR. Verrucous carcinoma of the vulva: Patterns of care and treatment outcomes. Cancer Rep (Hoboken). 2022;5(10):e21591. Doi: 10.1002/cnr2.1591.

[2] Campaner AB, Cardoso FA, Fernandes GL, Veasey JV. Verrucous carcinoma of the vulva: Diagnosis and treatment. An Bras Dermatol. 2017;92(2):243-45. Doi: 10.1590/abd1806-4841.20174929.

[3] Liu G, Li Q, Shang X, Qi Z, Han C, Wang Y, et al. Verrucous carcinoma of the vulva: A 20-year retrospective study and literature review. J Low Genit Tract Dis. 2016;20(1):114-18. Doi: 10.1097/LGT.0000000000000164.

[4] Bhati I, Rana S, Sharma A. A rare variety of vulval carcinoma-verrucous carcinoma: A case report. J South Asian Feder Menopause Soc. 2018;6(2):122-24.

[5] Bouquet de Jolinière J, Khomsi F, Gothuey JM, Guillou L, Fadhlaoui A, Dubuisson JB, et al. Verrucous carcinoma of the vulva: A case report and review of the literature. Front Surg. 2016;3:8. Doi: 10.3389/fsurg.2016.00008.

[6] Zhang W, Wang Y, Chen W, Du J, Xiang L, Ye S, et al. Verrucous carcinoma of the vulva: A case report and literature review. Am J Case Rep. 2019;20:551-56. Doi: 10.12659/AJCR.914367.

[7] Brinton LA, Thistle JE, Liao LM, Trabert B. Epidemiology of vulvar neoplasia in the NIH-AARP Study. Gynecol Oncol. 2017;145(2):298-304. Doi: 10.1016/j.ygyno.2017.02.030.

[8] DeKoning MN, Quint WG, Pirog EC. Prevalence of mucosal and cutaneous human papillomaviruses in different histologic subtypes of vulvar carcinoma. Mod Pathol. 2008;21:334.

[9] Tjalma WA, Siozopoulou V, Huizing MT. A clitoral verrucous carcinoma in an area of lichen planus has aggressive features. World J Surg Oncol. 2017;15(1):7. Doi: 10.1186/s12957-016-1069-0.

PARTICULARS OF CONTRIBUTORS:

1. Junior Resident, Department of Pathology, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.
2. Professor, Department of Pathology, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.
3. Professor, Department of Pathology, Datta Meghe Institute of Medical Sciences, Nagpur, Maharashtra, India.
4. Senior Resident, Department of Pathology, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.
5. Junior Resident, Department of Surgery, Datta Meghe Institute of Higher Education and Research, Wardha, Maharashtra, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Apoorva Pande,
Junior Resident, Department of Pathology, Jawaharlal Nehru Medical College, Sawangi (Meghe), Wardha-442107, Maharashtra, India.
E-mail: pandeapoorva2@gmail.com

PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Apr 29, 2025
- Manual Googling: Jun 02, 2025
- iThenticate Software: Jun 04, 2025 (6%)

ETYMOLOGY: Author Origin

EMENDATIONS: 5

AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

Date of Submission: **Apr 23, 2025**
Date of Peer Review: **May 08, 2025**
Date of Acceptance: **Jun 06, 2025**
Date of Publishing: **Aug 01, 2025**