International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Extramammary Paget's Disease of Vulva Vs Bowen's Disease of Vulva - A Clinical Dilemma

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Abstract: ***Background: Extramammary Paget's disease of the vulva is a rare intraepithelial adenocarcinoma. [1, 2] Bowen's disease of the vulva represents squamous cell carcinoma in situ, characterized by full - thickness dysplasia of the vulvar epithelium without invasion. [3] Preoperative diagnosis is challenging, and histopathological examination along with immunohistochemistry is the gold standard for diagnosis. We present a case of a 49 - year - old woman with a vulval lesion with differential diagnosis of Vulval Pagets or Bowens disease. Methods: Investigations like HPV viral load, with punch biopsy was done and the final diagnosis was confirmed through histopathology with immunohistochemistry. The patient underwent Wide local excision and was followed up. Results: The patient's final diagnosis was confirmed by histopathology and immunohistochemistry, showing features characteristic of bowens disease of vulva. The patient recovered well post - surgery. Conclusion: This case highlights the difficulty in differentiating a vulval lesion preoperatively as Vulval Pagets or Bowens disease and emphasizes the importance of histopathological and immunohistochemistry evaluation for confirmation.***

Keywords: Extramammary Pagets disease of vulva, Bowens disease of vulva, HPV virus, histopathology, immunohistochemistry

1. Introduction

Extramammary Paget's disease originates from the apocrine gland cells and proliferates within the epithelium. Incidence is 0.7 per 100000 in the European population. [4] Vulval Paget's disease constitutes about 1 - 2 % of all vulval neoplasms. It most often affects women between the ages of 50 and 80. Bowen's disease is a forerunner of squamous cell carcinoma with a rate of 2 - 3% conversion to malignancy. BD typically occurs in individuals above 60 years of age. [5] Human papilloma virus (HPV) is one of the risk factor for both the diseases, several subtypes of Human Papilloma Virus such as HPV 16, 18, 31, 33, 35, 54, 58, 61, 62, and 73 have been detected. Other risk factors include ionizing radiation, thermal skin injury, and inflammatory dermatoses such as chronic lupus erythematosus and lupus vulgaris. This case aims to study the clinical presentation and management of a suspicious vulval lesion, with emphasis histopathology and immunohistochemistry.

2. Case Details

A 49 year old female, P2L2A1 presented with an itchy lesion over the external genitalia since 7 years. Examination revealed a poorly defined, reddish erythematous plaque at the junction of the right labia majora and minora, measuring 4x1 cm, with healthy excision margins with no palpable inguinal lymph nodes. On per speculum cervix and vagina appeared healthy.

3. Investigations

HPV viral load was >1 RLU/CO

Punch biopsy taken from lesion showed bits of dermis with dense inflammatory infiltrate, few cells show atypia. Microscopic examination was in favor of intraepidermal tumor proliferation, with isolated cells sometimes organized in clusters. The tumor cells had abundant pale cytoplasm and large, irregular, atypical nuclei. atypical keratinocytes across the full thickness of the epidermis, loss of the granular layer, and overlying zones of parakeratosis

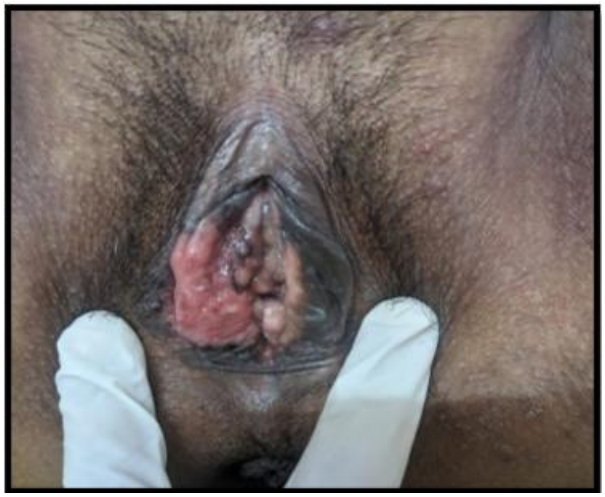

Figure 1: Pre operative image of the lesion

Procedure Planned: Wide local excision of the vulval lesion with Sentinel lymph node biopsy with frozen section analysis

Intraoperative Findings:

Frozen section reported to be dysplasia with no invasion of epithelium

Figure 2: Post operative image of the lesion

Histopathology:
Final biopsy report showed epidermis with parakeratosis, acanthosis with broadening rete ridges and dyskeratosis, suggestive of bowen's disease atypical keratinocytes across the full thickness of the epidermis, loss of the granular layer, and overlying zones of parakeratosis

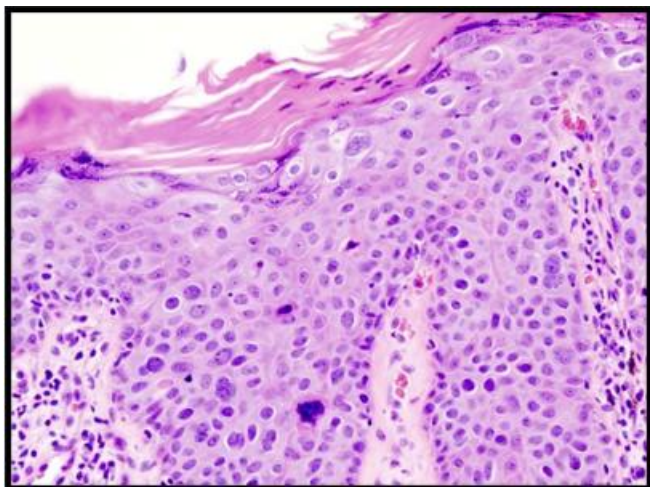

Figure 3: Histopathological image

Immunohistochemistry:
Immunohistochemical staining can differentiate between the two condition. Paget cells are positive for CK7, while in Bowen's disease are usually positive for CK 5/6 and negative for CK 7. [6] In our case, Immunohistochemistry markers checked were CK5, 6, 7 and the specimen was positive for CK5, 6 and was negative for CK7.

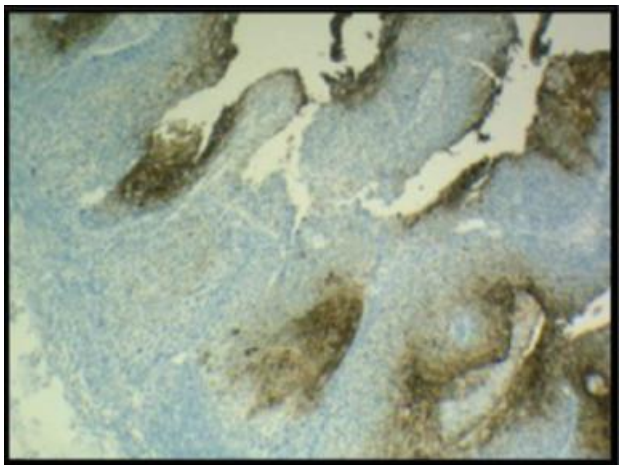

Figure 4: Weakly positive for CK - 5/6 in Bowen's disease (x100)

4. Discussion

Our case showed clinical features of both Extramammary Pagets and Bowen′s disease but the biopsy revealed features of both Paget′s disease and Bowen′s disease

Extramammary Paget's disease and pagetoid Bowen's disease typically present as well - demarcated, pruritic, and superficial erosive lesions on the vulva. [7, 8, 9] These conditions often have a protracted clinical course and may be misdiagnosed as more common vulvar dermatoses, including seborrheic dermatitis, eczema, pruritus vulvae, erosive lichen planus, or intertrigo. In cases where there is no clinical improvement with topical anti - inflammatory or antifungal therapy, the possibility of intraepidermal neoplasia or carcinoma in situ should be considered in the differential diagnosis.

The histological findings in these diseases can be overlaping and in such cases, immunohistochemical markers are helpful in differentiating the disorders.

EMPD typically expresses cytokeratin 7 (CK7), carcinoembryonic antigen (CEA), gross cystic disease fluid protein - 15 (GCDFP - 15), and mucin markers such as MUC1 and MUC5AC, reflecting its glandular or apocrine origin. These cells also show periodic acid–Schiff (PAS) positivity due to mucin content. In contrast, PBD, which represents squamous cell carcinoma in situ with pagetoid spread, generally stains positively for cytokeratin 5/6 (CK5/6) and p63, markers indicative of squamous differentiation, while being negative for CK7, CEA, and mucin markers. [6] The differential expression of these markers provides a reliable basis for accurate diagnosis, particularly in cases with overlapping clinical or histological features.

The treatment of choice remains surgical excision. Radical vulvectomy, radical hemivulvectomy (if localized to one side), wide local excision and Moh′s micrographic surgical excision have all been tried with variable recurrence rates. [10, 11]

For those patients who decline or are unfit for surgery, alternative treatment options include topical chemotherapy and immunomodulators such as 5 - fluorouracil (5 - FU), bleomycin and imiquimod as adjunctive or primary modalities of treatment. CO2 laser ablation can be used in well demarcated superficial lesions. There are some reports of the use of combinations of these topical chemotherapeutic agents with systemic chemotherapy agents including cisplatin, mitomycin C, epirubicin, vincristine and docetaxel. The survival rate was higher with excision with a wide local margin. [12, 13]

5. Conclusion

One of the risk factors for Vulval Paget's or Bowen's disease is HPV infection, hence advocating HPV vaccination is the primary modality of prevention. Vulvoscopy needs to be done in any suspicious lesions. Biopsy is helpful in arriving at a diagnosis. Treat the predisposing factors. Early Wide excision with 2cm margin is the treatment of choice. [10]

Acknowledgements
The authors would like to thank the Department of Obstetrics and Gynecology of Vydehi Institute of Medical Sciences & Research Institute for their support and contributions to the diagnosis and management of this case. We are also grateful to the Pathology team for their detailed histopathological and immunohistochemical analysis.

Declarations
Funding: No funding was received for the publication of this case report.
Conflict of interest: The authors declare no conflicts of interest related to this publication.
Informed Consent: Written informed consent from the patient has been taken for publication.

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