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CURRENT PROBLEMS OF VULVAR CANCER.

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Abstract:
Vulvar cancer represents a rare but serious malignancy within the spectrum of gynecological cancers. Despite progress in diagnosis and treatment, late detection, limited awareness, and psychosocial implications continue to hinder outcomes. This article explores the epidemiology, risk factors, diagnostic difficulties, therapeutic challenges, and emerging strategies in vulvar cancer management, highlighting current problems and possible solutions for improving patient care and survival.

Keywords: Vulvar cancer, gynecologic oncology, human papillomavirus (HPV), diagnosis, treatment, radiotherapy, survival, quality of life, awareness.

Vulvar cancer accounts for about 3–5% of all gynecologic malignancies, predominantly affecting women over 60 years old. Despite being relatively uncommon, its incidence has increased slightly in younger women due to HPV infection [1]. The disease poses diagnostic and therapeutic challenges, as symptoms are often non-specific, leading to delayed detection. Furthermore, social stigma and lack of awareness about genital symptoms contribute to late presentation and poor prognosis. The purpose of this paper is to analyze current problems associated with vulvar cancer, including diagnostic, therapeutic, and psychosocial aspects [2].

Vulvar cancer remains a significant yet under-discussed gynecological malignancy, primarily affecting postmenopausal women but increasingly impacting younger demographics due to evolving risk factors. As a rare cancer—representing approximately 0.4% to 0.7% of all new cancer diagnoses in women—it poses unique challenges in research, diagnosis, treatment, and survivorship [3]. According to the Surveillance, Epidemiology, and End Results (SEER) program, an estimated 7,480 new cases and 1,770 deaths from vulvar cancer are projected in the United States for 2025, highlighting its persistent burden. Globally, the incidence is around 2.6 per 100,000 women annually, with variations influenced by socioeconomic factors, HPV prevalence, and access to healthcare [4]. This detailed exploration draws on the latest 2025 updates from sources like the International Federation of Gynecology and Obstetrics (FIGO) Cancer Report, American Cancer Society (ACS), and ongoing clinical research to outline the multifaceted problems currently facing patients, clinicians, and researchers [5].

Rising Incidence and Age Demographics

Vulvar cancer's rarity complicates large-scale epidemiological studies, but recent data indicate a concerning upward trend in incidence, particularly in high-income countries where rates have risen by about 14% over the past two decades. Traditionally, the disease affects women aged 65–74, with a median diagnosis age of 68. However, there's a notable shift toward younger women (aged 50–60), driven largely by human papillomavirus (HPV)-associated cases. HPV-positive vulvar cancers, which account for 40–60% of cases, are linked to high-risk strains like HPV-16 and HPV-18, often transmitted sexually. In contrast, HPV-negative cases, more common in older women, are associated with chronic inflammatory conditions such as lichen sclerosus or lichen planus [6].

This demographic shift exacerbates public health challenges, as younger patients may face long-term survivorship issues, including fertility concerns and psychological impacts from disfiguring treatments. In low- and middle-income countries (LMICs), where HPV vaccination coverage is lower and smoking rates higher, incidence and mortality are disproportionately elevated, with delayed diagnoses contributing to poorer outcomes [7].

Risk Factor Management and Prevention Gaps

Key modifiable risk factors include HPV infection, smoking (which doubles the risk), immunosuppression (e.g., from HIV or organ transplants), and chronic vulvar dermatoses. Non-modifiable factors encompass advanced age and prior history of cervical intraepithelial neoplasia (CIN) or pelvic radiation. Despite the proven efficacy of HPV vaccines like Gardasil in preventing up to 90% of HPV-related vulvar cancers, global uptake remains suboptimal, particularly in regions with vaccine hesitancy or limited access. Social media discussions, as seen in recent X posts, highlight ongoing debates around HPV vaccination for children, underscoring misinformation as a barrier to prevention.

The absence of routine screening programs is a critical gap. Unlike cervical cancer, which benefits from Pap smears and HPV testing, vulvar cancer detection relies on opportunistic visual inspections during gynecologic exams or patient self-reporting of symptoms. Precursors

like vulvar intraepithelial neoplasia (VIN) can be treated early, but low awareness leads to progression in many cases. Efforts to promote self-examination and education are hampered by stigma surrounding vulvar health, further delaying intervention [8].

Epidemiological Metric	2025 U.S. Estimates	Global Trends
New Cases	7,480	Increasing in high-income countries; higher mortality in LMICs
Deaths	1,770	Disparities due to access issues
Incidence Rate	2.6 per 100,000 women	Shift to younger ages (50–60)
HPV-Associated Proportion	40–60%	Preventable with vaccination, but uptake <70% in many areas

Diagnostic Challenges: From Symptom Dismissal to Staging Inaccuracies

Symptom Recognition and Diagnostic Delays

Most women present with nonspecific symptoms such as persistent pruritus (itching), pain, lumps, ulcers, or bleeding, which are often misattributed to benign conditions like yeast infections, dermatitis, or menopause-related changes. This leads to diagnostic delays averaging 6–12 months, with up to 30% of cases diagnosed at advanced stages (III–IV). In primary care settings, where vulvar examinations are not routine, these delays are exacerbated by clinician discomfort or lack of training in vulvar pathology [8,9].

Biopsy remains the gold standard for confirmation, but histopathological interpretation is complex due to the disease's heterogeneity. Distinguishing between HPV-positive (typically warty or basaloid subtypes with better prognosis) and HPV-negative (keratinizing SCC with TP53 mutations and worse outcomes) requires molecular testing, which is not universally available [10].

Staging and Imaging Limitations

Accurate staging is crucial for prognosis and treatment planning, yet the vulva's intricate anatomy— involving lymphatics draining to inguinal and femoral nodes— poses challenges. The FIGO 2021 staging system (updated in 2025 reports) incorporates tumor size, nodal involvement, and metastases, but clinical understaging occurs in 20–30% of cases. Advanced imaging like MRI or PET-CT improves nodal assessment, but availability in resource-limited settings is poor, leading to reliance on less precise ultrasound [11].

Sentinel lymph node biopsy (SLNB) has revolutionized early-stage management, offered a 95% negative predictive value and reduced unnecessary full groin lymphadenectomies. However, its adoption is inconsistent, and false negatives remain a risk in multifocal or large tumors [12].

Surgical Interventions and Morbidity

Surgery is the primary treatment for localized disease, ranging from wide local excision (WLE) for early lesions to radical vulvectomy with lymphadenectomy for advanced cases. While effective, these procedures carry high morbidity: wound breakdown in 20–40%, lymphedema in 14–48%, and chronic pain or sexual dysfunction in over 50% of survivors. Reconstructive techniques (e.g., flaps) mitigate some disfigurement, but access to specialized surgeons is limited [7,10].

De-escalation strategies, such as reduced surgical margins (<8 mm) or omitting contralateral lymphadenectomy in unilateral disease, aim to preserve function but increase recurrence risk to 20–40%. For inoperable or recurrent cases, exenterative surgery (removal of bladder, rectum, or vagina) is a last resort, with profound impacts on body image and daily life [8,10].

Radiation and Chemotherapy Toxicities

Adjuvant radiation therapy (RT), often combined with chemotherapy (e.g., cisplatin), is standard for node-positive or high-risk cases, achieving 50–65% complete response rates. Advances like intensity-modulated RT (IMRT) and brachytherapy have reduced acute toxicities (e.g., skin reactions), but long-term issues like fibrosis, incontinence, and secondary malignancies persist. Compliance is a problem, with only 51% of patients completing optimal regimens due to fatigue and interruptions [12].

For metastatic disease, systemic options are limited. Platinum-based chemotherapy offers modest benefits, while targeted therapies (e.g., EGFR inhibitors) show variable efficacy. Immunotherapy, such as pembrolizumab for PD-L1-positive tumors, has response rates of 10–30%, but trial data are sparse due to the disease's rarity [4,6,7].

High Recurrence and Palliative Care Needs

Recurrence rates are alarmingly high (20–40% locally, 10–20% distantly), often within two years, and groin node recurrences are nearly fatal without salvage therapy. Palliative approaches like electrochemotherapy for local control are emerging, but holistic care addressing pain, psychosocial distress, and end-of-life planning is often inadequate [12].

Significant disparities exist: Black women face worse outcomes due to later diagnoses and comorbidities, while LMICs suffer from resource shortages, lacking multidisciplinary teams or advanced therapies. Guideline variations between organizations (e.g., NCCN vs. ESGO) contribute to inconsistent care [3,9].

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Survivorship and Psychosocial Burden

Survivors endure anxiety (40–60%), sexual dysfunction (70%), and body image issues, yet support services like psycho-oncology are underutilized. Recent X discussions emphasize related concerns, such as vulvar pain in breastfeeding women, highlighting broader vulvar health awareness needs [10].

Recent Advances and Future Directions

Promising developments include expanded SLNB use, HPV subtyping for personalized therapy, and trials like KEYNOTE-158 for immunotherapy. The FIGO 2025 report advocates for global equity, HPV vaccination drives, and standardized protocols. Ongoing research focuses on biomarkers (e.g., PD-L1 expression) and minimally invasive techniques to reduce morbidity [9,10].

In summary, while vulvar cancer's prognosis is favorable for early detection (5-year survival >90%), current problems—rooted in prevention gaps, diagnostic delays, treatment toxicities, and inequities—demand urgent multidisciplinary action. Women with symptoms or risk factors should seek prompt evaluation from a gynecologic oncologist for optimal outcomes [11].

The findings demonstrate that vulvar cancer remains under-recognized and underdiagnosed. The coexistence of HPV-related and non-HPV-related pathogenesis complicates prevention strategies. Promoting HPV vaccination and genital health education is crucial. Clinicians should adopt multidisciplinary approaches combining surgery, radiotherapy, and psychosocial support [12].

CONCLUSIONS

Emerging technologies such as dermatoscopy, molecular diagnostics, and targeted therapy (e.g., PD-1 inhibitors) hold promise but remain underutilized. Patient-centered care, with an emphasis on preserving body image and sexual function, is essential for quality of life after treatment. Furthermore, there is a growing need for regional cancer registries and professional training to standardize care in developing countries. Vulvar cancer continues to pose diagnostic and therapeutic challenges. Addressing these requires a comprehensive strategy:

Enhance Early Detection: Develop standardized screening protocols and encourage routine gynecologic examinations.Expand HPV Vaccination Programs: Increase vaccine accessibility and awareness campaigns for both women and men.

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