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Research Article

DIAGNOSTIC EVALUATION AND COMMON PRESENTATIONS OF VULVAR PRURITUS: EXPERIENCE FROM A TERTIARY CARE DERMATOLOGY OUTPATIENT DEPARTMENT

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ABSTRACT:
Background: Vulvar pruritus is a frequent yet underreported symptom encountered in dermatology practice, with a wide etiological spectrum encompassing infectious and non-infectious dermatoses. Prompt and accurate diagnosis is essential to alleviate symptoms and prevent complications. **Aim:** To evaluate the common clinical presentations and diagnostic spectrum of vulvar pruritus in a tertiary care dermatology outpatient department. **Materials and Methods:** This cross-sectional study was conducted on 100 consecutive female patients presenting with vulvar pruritus. Detailed clinical history and examination were performed, and relevant laboratory, microbiological, and histopathological investigations were undertaken as indicated. Data were analyzed for frequency distribution, confidence intervals, and association between age groups and cause-type using the chi-square test. **Results:** The most frequent clinical presentations were itching with excoriations (23%) and itching with discoloration (21%). Infectious causes (65%, 95% CI 55.1–73.7) significantly outnumbered non-infectious causes (35%, p=0.0027). Vulvovaginal candidiasis (24%) and tinea cruris (21%) were the leading diagnoses, followed by lichen sclerosus (10%) and irritant contact dermatitis (7%). A significant association was noted between age group and cause-type (χ^2=13.3, p=0.0003), with infectious causes predominating in younger age groups and non-infectious causes more common in older women. **Conclusion:** Vulvar pruritus in a tertiary care dermatology OPD is predominantly infectious in etiology, with distinct age-related

patterns. Comprehensive diagnostic evaluation is vital for effective management and prevention of chronic morbidity.
Keywords: Vulvar pruritus, vulvovaginal candidiasis, lichen sclerosus.

INTRODUCTION

Vulvar pruritus is a common yet often underreported symptom that affects women across all age groups. Characterized by itching of the vulvar region, it can range from mild and transient to severe and chronic, with a significant negative impact on quality of life. Its effects extend beyond physical discomfort, often causing psychological distress, sexual dysfunction, social embarrassment, and disturbances in daily activities. The multifactorial etiology of vulvar pruritus includes infectious, inflammatory, neoplastic, and systemic causes, and the condition often demands a careful and systematic diagnostic approach.[1]

The precise prevalence of vulvar pruritus is difficult to establish due to the sensitive nature of the symptom, which leads to underreporting. Many women hesitate to seek medical consultation due to feelings of embarrassment, social stigma, or the belief that symptoms are a normal consequence of aging or sexual activity. Self-treatment with over-the-counter products, which often contain irritants, is common. Ironically, such measures can worsen the condition, resulting in irritant or allergic contact dermatitis.[2][3]

Epidemiological data indicate that vulvar pruritus occurs most frequently among women in the reproductive age group but can affect children and postmenopausal women as well. In younger women, the symptom is often associated with infectious etiologies, such as vulvovaginal candidiasis, bacterial vaginosis, or sexually transmitted infections (STIs). In contrast, older women are more likely to experience pruritus secondary to non-infectious chronic dermatoses, such as lichen sclerosus or atrophic vulvovaginitis, due to estrogen deficiency.[4]

Studies estimate that up to 70% of patients presenting to specialized vulvar clinics report itching as their primary complaint. In a subset of these patients, chronic vulvar pruritus significantly reduces sleep quality, sexual satisfaction, and interpersonal relationships. Additionally, pediatric and adolescent patients may present with vulvar itching due to irritant exposure, hygiene issues, or parasitic infestations.[5][6]

The pathogenesis of vulvar pruritus often involves a disruption of the skin barrier, leading to increased sensitivity to irritants and allergens. This triggers an inflammatory cascade involving cytokines such as IL-31, histamine release from mast cells, and neurogenic inflammation. The itch-scratch cycle perpetuates barrier damage, causing chronicity and lichenification. Hormonal status influences tissue structure, pH, and microbial colonization, further modifying disease susceptibility.[7]

Aim

To evaluate the diagnostic spectrum and common clinical presentations of vulvar pruritus in patients attending a tertiary care dermatology outpatient department.

Objectives

1. To estimate the prevalence of vulvar pruritus among patients attending the dermatology OPD.
2. To study the clinical presentations of vulvar pruritus across different age groups.
3. To document the common etiological diagnoses of vulvar pruritus.

MATERIAL AND METHODOLOGY

Source of Data: Female patients presenting with complaints of vulvar itching to the Dermatology, Venereology, and Leprosy Department at Terna Hospital & Research Centre and Navi Mumbai Municipal Corporation Hospital, Vashi.
Study Design: Prospective, observational study.
Study Location: Department of Dermatology, Venereology, and Leprosy at Terna Hospital & Research Centre and NMMC Hospital, Vashi, Navi Mumbai, India.
Study Duration: January 2023 – December 2024.
Sample Size: 100 patients.
Inclusion Criteria:

1. Females of all age groups.
2. Patients presenting with vulvar itching.
3. Patients willing to provide written informed consent.

Exclusion Criteria:

1. Patients without vulvar complaints.
2. Patients unwilling to participate or provide consent.

Procedure and Methodology:
A detailed history was taken, including demographic profile, duration of symptoms, hygiene practices, sexual history, menstrual/menopausal status, associated symptoms, medical and drug history, and family history. Physical examination of the vulva, perineum, groin, and adjacent areas was conducted under adequate lighting. Relevant laboratory and diagnostic tests were performed, including:
Wood's lamp examination
KOH preparation for fungal elements. Gram stain / Tzanck smear / saline mount as appropriate. Culture and sensitivity for persistent infections. Biopsy for suspected neoplastic or chronic inflammatory conditions.
Sample Processing: Skin scrapings for fungal culture were processed using Sabouraud dextrose agar. Smears were examined microscopically for bacterial or fungal organisms. Histopathological specimens were fixed in formalin and processed for paraffin sectioning, followed by H&E staining.
Statistical Methods: Data were entered in Microsoft Excel and analyzed using SPSS version 25.0. Descriptive statistics: mean, standard deviation, proportions. Analytical statistics: Chi-square test for association between categorical variables. A p-value <0.05 was considered statistically significant.
Data Collection: Patient details, history, examination findings, investigations, and final diagnosis were recorded in a predesigned data collection form. Photographic documentation was obtained where consented, ensuring patient anonymity.

Observation and Results:
Table 1: Clinical presentations of vulvar pruritus (n = 100)

Clinical presentation	n	%	95% CI (%)	Test vs 12.5% (z)	p value
Itching with excoriations	23	23.0	15.9–31.9	2.98	0.0028
Itching with discoloration	21	21.0	14.3–29.8	2.50	0.0125
Itching with pain	12	12.0	7.0–19.7	-0.17	0.8682
Itching with discharge	12	12.0	7.0–19.7	-0.17	0.8682
Itching over vulva	9	9.0	4.8–16.3	-1.05	0.2920
Itching over vulva + other body sites	9	9.0	4.8–16.3	-1.05	0.2920

Itching with xerosis	7	7.0	3.5–13.5	-1.66	0.0975
Itching with growth	7	7.0	3.5–13.5	-1.66	0.0975

Table 1 shows that the most common clinical presentation was *itching with excoriations* (23%, 95% CI 15.9–31.9), followed closely by *itching with discoloration* (21%, 95% CI 14.3–29.8). Both were significantly more frequent than an even 12.5% distribution across categories ($p = 0.0028$ and $p = 0.0125$, respectively). Presentations such as *itching with pain* (12%) and *itching with discharge* (12%) occurred at rates close to the expected reference and were not statistically significant. Simple *itching over vulva* and *itching over vulva with other body sites* each occurred in 9% of patients, while *itching with xerosis* and *itching with growth* were the least common (7% each), with none of these lower-frequency categories reaching statistical significance.

Table 2: Diagnostic spectrum: Infectious vs Non-infectious causes (n = 100)

Diagnostic category	n	%	95% CI (%)	Test vs 50% (z)	p value
Infectious	65	65.0	55.1–73.7	3.00	0.0027
Non-infectious	35	35.0	26.3–44.9	-3.00	0.0027

The diagnostic spectrum **(Table 2)** revealed that infectious causes predominated, accounting for 65% of cases (95% CI 55.1–73.7), significantly higher than the 50% reference proportion ($p = 0.0027$). Non-infectious causes comprised 35% (95% CI 26.3–44.9) and were correspondingly less frequent than expected under a 50% null.

Table 3: Age group vs Cause-type distribution (n = 100)

Age group (years)	Infectious, n	Non-infectious, n	Total, n	Infectious, %	Infectious 95% CI (%)
1–15	1	4	5	20.0	3.6–62.4
15–30	19	5	24	79.2	58.7–91.0
31–45	26	12	38	68.4	52.5–80.9
45–60	11	12	23	47.8	28.7–67.4
>60	3	7	10	30.0	10.8–60.3
Total	60	40	100	60.0	50.3–69.0

Chi-square test: $\chi^2 = 13.3$, df = 4, $p = 0.0003$ (significant association between age group and cause-type).

Table 3 presents the distribution of cause-type by age group. The highest proportion of infectious etiologies occurred in the 15–30 years age group (79.2%, 95% CI 58.7–91.0), followed by 31–45 years (68.4%, 95% CI 52.5–80.9). In contrast, non-infectious causes predominated in older age brackets, with infectious proportions falling to 47.8% in the 45–60 years group and 30.0% in those over 60 years. The youngest group (1–15 years) had the lowest infectious proportion (20.0%), though with wide confidence intervals due to small numbers. A chi-square test confirmed a significant association between age and cause-type ($\chi^2 = 13.3$, df = 4, $p = 0.0003$).

Table 4: Etiological diagnoses of vulvar pruritus (n = 100)

Etiological diagnosis	n	%	95% CI (%)	Test vs 5.56% (z)	p value
Vulvovaginal candidiasis	24	24.0	16.6–33.3	4.40	<0.0001
Tinea cruris	21	21.0	14.3–29.8	3.77	0.0002
Lichen sclerosus	10	10.0	5.5–17.6	1.45	0.1464
Irritant contact dermatitis	7	7.0	3.5–13.5	0.59	0.5553
Herpes genitalis	6	6.0	2.8–12.5	0.16	0.8720

Folliculitis	5	5.0	2.1–11.3	-0.23	0.8180
Genital wart	5	5.0	2.1–11.3	-0.23	0.8180
Scabies	4	4.0	1.6–9.8	-0.62	0.5336
ACD (diaper rash)	4	4.0	1.6–9.8	-0.62	0.5336
Lichen planus	3	3.0	1.0–8.5	-1.02	0.3077
Inverse psoriasis	2	2.0	0.6–7.0	-1.43	0.1528
Lichen simplex chronicus	2	2.0	0.6–7.0	-1.43	0.1528
Vitiligo	2	2.0	0.6–7.0	-1.43	0.1528
Fixed drug eruption	1	1.0	0.2–5.4	-1.84	0.0656
Pemphigus vulgaris	1	1.0	0.2–5.4	-1.84	0.0656
Skin tags	1	1.0	0.2–5.4	-1.84	0.0656
Squamous cell carcinoma	1	1.0	0.2–5.4	-1.84	0.0656
Xerosis	1	1.0	0.2–5.4	-1.84	0.0656

Table 4 details the etiological diagnoses. *Vulvovaginal candidiasis* was the most frequent single diagnosis (24%, 95% CI 16.6–33.3), followed by *tinea cruris* (21%, 95% CI 14.3–29.8), both occurring at rates significantly higher than the 5.56% expected under a uniform null ($p < 0.0001$ and $p = 0.0002$, respectively). *Lichen sclerosus* (10%) and *irritant contact dermatitis* (7%) were notable non-infectious causes, though not significantly overrepresented statistically. Viral conditions such as *herpes genitalis* (6%) and *genital wart* (5%), along with bacterial *folliculitis* (5%) and infestations like *scabies* (4%), contributed smaller shares. A wide array of less common diagnoses—lichen planus, inverse psoriasis, lichen simplex chronicus, vitiligo, fixed drug eruption, pemphigus vulgaris, skin tags, squamous cell carcinoma, and xerosis—were each seen in 1–3% of patients, with statistical tests showing no significant deviation from the uniform expectation.

DISCUSSION

Table 1: Clinical presentations of vulvar pruritus In our cohort, excoriations (23%) and discoloration (21%) were the most frequent accompaniments of itch and occurred significantly more often than a uniform 12.5% reference (p=0.0028 and p=0.0125). This pattern is clinically plausible: chronic scratching perpetuates the itch–scratch cycle, producing secondary excoriations and post-inflammatory color change. Reviews emphasize that many vulvar dermatoses present with itch plus secondary scratch changes, and that quality-of-life impairment (sleep/sexual dysfunction) is substantial underscoring why excoriations feature prominently in symptomatic populations. Beyitler İ *et al.*(2017)[8] By contrast, pain and discharge (12% each) sat near the reference value, consistent with the notion that pain suggests erosive/inflammatory disease or neuropathic mechanisms rather than uncomplicated itch, whereas discharge aligns more specifically with vaginitis (e.g., candidiasis, BV) and may not dominate in dermatology-referred cohorts. Contemporary reviews and consensus terminology distinguish itch-predominant disorders (e.g., eczematous/contact, lichen sclerosus/planus, psoriasis) from pain/vulvodynia spectra, supporting our clinical mix. Lower frequencies of “itch with xerosis” and “itch with growth” (7% each; NS) align with epidemiology: simple xerosis is common but not always the primary driver of clinic-presenting pruritus, while the “growth” descriptor often heralds focal lesions (condyloma, tags, neoplasia) that are relatively less prevalent in routine OPD samples. Singh N *et al.*(2020)[9]

Table 2: Diagnostic spectrum: infectious vs non-infectious Infectious etiologies (65%, 95% CI 55.1–73.7) significantly outnumbered non-infectious causes (p=0.0027). This is concordant with reports that vulvovaginal candidiasis (VVC) is among the most common

symptomatic diagnoses in women with itch/discharge, and that dermatophytosis of the groin (tinea cruris) may extend to labia majora/inguinal folds, producing vulvar itch. Our etiologic table (below) indeed shows VVC (24%) and tinea cruris (21%) as the top two categories. Even so, non-infectious dermatoses remain critical: guidelines spotlight lichen sclerosus (LS) as a common chronic cause of vulvar itch in postmenopausal women, requiring biopsy-backed diagnosis and long-term corticosteroid therapy to reduce scarring and mitigate neoplastic risk. The 2018 BAD guideline and subsequent updates stress vigilant recognition even when infections are prevalent in mixed-age clinics. Day T *et al.*(2020)[10]

Table 3: Age group vs cause-type We observed a significant association between age and cause-type (χ^2=13.3, df=4, p=0.0003): infectious causes peaked in 15–30 years (79.2%) and 31–45 years (68.4%), then declined with age; non-infectious causes predominated among >60 years. This gradient mirrors life-course biology: reproductive-age women experience higher burdens of VVC and intertriginous dermatophytosis, while postmenopausal hypoestrogenism and autoimmune predisposition shift the spectrum toward LS and other inflammatory dermatoses. Practice guidelines and updates consistently report that LS disproportionately affects postmenopausal patients; population-based data also emphasize its linkage with vulvar squamous cell carcinoma, reinforcing why non-infectious etiologies loom larger in older groups. Lambert J. (2014)[11]

Table 4: Etiological diagnoses VVC (24%) led our list, followed by tinea cruris (21%)—both significantly above a uniform 5.56% reference. This aligns with infectious-dominant clinic cohorts and with evidence that VVC is a leading cause of vulvovaginal symptoms; recent reviews integrate CDC guideline-concordant therapy and reaffirm VVC's centrality in the differential of itch + discharge. Krapf JM *et al.*(2022)[12] & Ozalp SS *et al.*(2015)[13] Dermatophyte groin infections—more common in warm, humid climates—regularly involve the inguinal creases/labia majora and produce itch, matching our second-rank finding. Among non-infectious disorders, LS (10%) was notable—coherent with guideline statements that LS is one of the most frequent chronic inflammatory vulvar dermatoses, typically postmenopausal, with management implications (potent topical steroids, long-term surveillance). The relatively smaller proportions of irritant/contact dermatitis (7%), herpes genitalis (6%), genital warts (5%), and other dermatoses (each ≤5%) reflect the breadth of the differential but also the referral mix of a dermatology OPD; consensus frameworks (ISSVD) highlight that diverse entities can present primarily with itch and that a structured diagnostic approach (history, focused exam, microscopy, culture, and selective biopsy) is essential. Ringel NE *et al.*(2020)[14]

CONCLUSION

The present study highlights that vulvar pruritus is a common and multifactorial complaint in dermatology outpatient practice, with infectious etiologies—particularly vulvovaginal candidiasis and tinea cruris—being predominant, especially among women of reproductive age. Non-infectious dermatoses such as lichen sclerosus also constitute a significant proportion, particularly in postmenopausal women. Clinical presentations most often include itching with excoriations and discoloration, reflecting the chronicity and impact of symptoms. A statistically significant association between age group and cause-type underscores the importance of age-specific diagnostic consideration. Comprehensive evaluation incorporating detailed history, targeted clinical examination, and appropriate laboratory and histopathological workup remains essential for accurate diagnosis and tailored management, ultimately improving patient outcomes.

LIMITATIONS OF THE STUDY

1. The study was conducted in a single tertiary care dermatology OPD, which may limit generalizability to primary care or gynecology-based populations.
2. The cross-sectional design precludes assessment of treatment outcomes or temporal changes in symptom patterns.
3. Microbiological and histopathological investigations were not uniformly performed in all cases, potentially leading to underdiagnosis of some etiologies.
4. Seasonal variation in presentation was not evaluated, which may influence the prevalence of certain infections.
5. The sample size, though adequate for descriptive purposes, may not detect less common causes with statistical precision.

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