

## ORIGINAL RESEARCH

# To investigate the spectrum of non-venereal genital dermatoses in adult males

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### ABSTRACT

**Background:** Non-venereal genital dermatoses in adult males encompass a diverse spectrum of inflammatory, infectious, autoimmune, and neoplastic conditions affecting the genital region. These disorders can present with a variety of clinical manifestations, including rash, erosions, ulcerations, papules, nodules, and plaques, often leading to discomfort, pain, and psychological distress. **Material and Methods:** This study was conducted in the Department of Dermatology on 100 adult male patients over the age of 18 years, presenting with non-venereal dermatoses of the external genitalia. Patients with any venereal disease were excluded. A detailed history was taken, and clinical examinations were performed, including tests like Gram's stain, KOH mount, Tzanck smear, patch test, and skin biopsy where necessary. Data were recorded and analyzed using SPSS version 22.0. **Results:** The majority of patients were younger adults, with 25% in the 21-30 age group. Most patients (60%) had lesions confined to the genital region. Inflammatory conditions were the most common (38%), followed by infections (28%) and benign lesions (20%). Pre-malignant and malignant conditions were rare, comprising only 4% of cases. Systemic involvement was seen in 20% of patients, and orogenital lesions were present in 10% of patients. **Conclusion:** Non-venereal genital dermatoses are most common in younger males and are predominantly inflammatory. While the majority of cases are localized to the genital area, a significant number involve systemic manifestations. Vigilant clinical evaluation and timely diagnosis are crucial to effective management and early detection of pre-malignant or malignant conditions.

**Keywords:** Non-venereal genital dermatoses, inflammatory conditions, infections, benign lesions, systemic involvement.

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### INTRODUCTION

Non-venereal genital dermatoses in adult males encompass a diverse spectrum of inflammatory, infectious, autoimmune, and neoplastic conditions affecting the genital region. These disorders can present with a variety of clinical manifestations, including rash, erosions, ulcerations, papules, nodules, and plaques, often leading to discomfort, pain, and psychological distress. Inflammatory dermatoses affecting the genital area include balanitis, balanoposthitis, and lichen sclerosus. Balanitis, characterized by inflammation of the glans penis, is often associated with poor hygiene, candidal infection, or irritants. Balanoposthitis involves both the glans and prepuce, commonly seen in uncircumcised males and linked to infections or irritants. Lichen sclerosus is a chronic inflammatory condition that causes sclerosis and atrophy of the foreskin or glans, leading to phimosis and scarring.<sup>1-4</sup> Various infectious dermatoses affect the genital region, including fungal infections (e.g., candidiasis),

viral infections (e.g., herpes simplex virus), and bacterial infections (e.g., cellulitis). Candidal balanitis presents with erythematous patches and satellite pustules on the glans, often associated with itching and discomfort. Herpes simplex virus (HSV) infections cause painful vesicles and erosions, typically recurring in clusters on the penis or genital area. Cellulitis of the genital region manifests as erythema, warmth, and swelling, requiring prompt antibiotic therapy to prevent complications.<sup>5,6</sup> Autoimmune conditions affecting the genital area include lichen planus and psoriasis. Lichen planus presents with violaceous, polygonal papules and plaques, often involving the glans and prepuce, leading to scarring and functional impairment. Psoriasis manifests as well-defined, erythematous plaques with silvery scales, affecting the genital skin and mucosa, and may be associated with arthritis in some cases. Neoplastic conditions such as squamous cell carcinoma and melanoma can also arise on the

genital skin, presenting as persistent ulcers, nodules, or growths.<sup>7</sup>

### AIM AND OBJECTIVES

The aim of this study was to investigate the spectrum of non-venereal genital dermatoses in adult males and to evaluate the demographic and clinical characteristics of these conditions.

### MATERIAL AND METHODS

The present prospective study was conducted at Department of Dermatology, Venereology and Leprosy, Saraswathi Institute of Medical Sciences, Hapur, Uttar Pradesh, India for a period of one year (March, 2019 – February, 2020). A series of 100 male patients over the age of 18 years with non-venereal dermatoses of external genitalia were screened among the patients. The study was conducted after obtaining ethical clearance from the Institutional Ethical Clearance Committee. Patients having any venereal

disease were excluded from the study. After informed consent from the patient, detailed history regarding age, education, marital status, sexual practices, circumcision, trauma, drug intake, application of topical creams, recurrence, initial site of affection, duration and progression of the disease, associated medical and skin disorders was taken. Preliminary general and systemic examination was done. External genitalia, anal and perianal regions were examined. A thorough examination of the skin and mucosae was done to look for lesions elsewhere in the body. Gram's stain, KOH mount, Tzanck smear, patch test, skin biopsy were done as and when required to establish the diagnosis. In suspected cases, VDRL, HIV tests were done to rule out STDs. The relevant details of the patient, examination findings, investigations, diagnosis were recorded in the standard proforma. The data was tabulated into excel sheets and analysed using SPSS version 16.0.

### RESULTS

**Table 1: Demographic data of patients**

Demographic Variable	No. of Patients	Percentage (%)
<b>Age in years</b>		
<20	12	12%
21-30	25	25%
31-40	20	20%
41-50	15	15%
51-60	13	13%
61-70	10	10%
71-80	5	5%
<b>Marital Status</b>		
Married	70	70%
Unmarried	25	25%
Divorced/Widowed	5	5%
<b>Education Level</b>		
Illiterate	10	10%
Primary	20	20%
Secondary	40	40%
Higher Education	30	30%

Table 1 shows that the age distribution of patients shows a concentration in the younger to middle-aged groups. The largest age group is 21-30 years, representing 25% of the total sample. This is followed by 31-40 years (20%) and 41-50 years (15%). These results suggest that non-venereal genital dermatoses are more commonly diagnosed in younger adults. The elderly population (61-80 years) constitutes a smaller portion of the sample (15%), indicating that older adults are less affected by these conditions. In terms of marital status, 70% of the patients were married, which may reflect the prevalence of genital dermatoses across sexually active adults. Unmarried

individuals accounted for 25% of the sample, while only 5% were divorced or widowed. This distribution highlights that non-venereal dermatoses can affect individuals regardless of their marital status, although married individuals form the majority. Regarding education levels, 40% of patients had received secondary education, 30% had higher education, and 20% had primary education. Only 10% were illiterate. The higher incidence among educated individuals could be due to better healthcare-seeking behavior or access to medical services, though it affects all education levels to some extent.

**Table 2: Categorization of lesions based on etiology**

Lesions	No. of patients	Percentage (%)
<b>Benign conditions and physiological variants</b>		
Pearly penile papules	10	10%
Lichen nitidus	3	3%
Angiokeratoma of Fordyce	4	4%
Acrochordons	2	2%
Seborrheic keratoses	1	1%
<b>Infections &amp; Infestations</b>		
Scabies	8	8%
Candidiasis	7	7%
Furunculosis	5	5%
Tinea	6	6%
Phthiasis	2	2%
<b>Inflammatory conditions</b>		
Lichen planus	5	5%
Lichen sclerosus et atrophicus	7	7%
Psoriasis	3	3%
Contact dermatitis	6	6%
Scrotal dermatitis	4	4%
Pemphigus	2	2%
Lymphangiectasia	1	1%
Fixed drug eruption	3	3%
Stevens-Johnson syndrome	1	1%
Lichen simplex chronicus	3	3%
Behcet's disease	1	1%
Zoon's balanitis	2	2%
<b>Pre-malignant &amp; malignant conditions</b>		
Erythroplasia of Queyrat	2	2%
Squamous cell carcinoma	1	1%
Verrucous carcinoma	1	1%
<b>Miscellaneous</b>		
Vitiligo	3	3%
Sebaceous cyst	2	2%
Lupus vulgaris	1	1%

Table 2 show that the lesions observed in the study into benign conditions, infections, inflammatory conditions, pre-malignant/malignant conditions, and miscellaneous. Benign conditions and physiological variants accounted for 20% of cases, with pearly penile papules being the most common at 10%. Other benign conditions included lichen nitidus (3%), angiokeratoma of Fordyce (4%), acrochordons (2%), and seborrheic keratoses (1%). While these conditions are generally harmless, they may require diagnosis to rule out other serious diseases. Infections and infestations were identified in 28% of the patients. Scabies was the most frequent infection, affecting 8% of the sample, followed by candidiasis (7%), tinea (6%), furunculosis (5%), and phthiasis (2%). These results suggest that a significant portion of non-venereal genital dermatoses are caused by infectious agents, potentially requiring both systemic and topical treatments for effective management. Inflammatory conditions represented 38% of the total cases, indicating that a large number of non-venereal genital

dermatoses have an underlying inflammatory origin. The most common inflammatory conditions were lichen sclerosus et atrophicus (7%) and lichen planus (5%). Other conditions in this category included contact dermatitis (6%) and psoriasis (3%). Less frequent conditions were fixed drug eruption, Stevens-Johnson syndrome, and pemphigus, all of which contribute to the inflammatory category. Pre-malignant and malignant conditions were rare, accounting for only 4% of the total cases. This included erythroplasia of Queyrat, squamous cell carcinoma, and verrucous carcinoma. Although uncommon, the presence of these lesions emphasizes the need for vigilant screening and early detection to prevent serious outcomes. Miscellaneous conditions, such as vitiligo (3%), sebaceous cysts (2%), and lupus vulgaris (1%), contributed to a smaller portion of the cases. While these conditions are not directly related to genital dermatoses, they can affect the external genitalia and potentially cause discomfort for patients.

**Table 3: Classification based on site**

Site	No. of patients	Percentage (%)
Genital alone	60	60%
Orogenital	10	10%
Genital & skin	20	20%
Orogenital& skin	10	10%

Table 3 show that the site of the lesions in the patients. The majority of patients (60%) presented with lesions confined to the genital region alone, emphasizing that most non-venereal dermatoses primarily affect the external genitalia. However, 20% of patients had both genital and skin involvement, which may indicate systemic or widespread dermatological conditions such as psoriasis or lichen planus. Additionally, 10% of patients presented with orogenital lesions, which could suggest conditions like Behcet's disease or sexually transmitted infections ruled out by the study. Another 10% had lesions involving both the genital region and other skin areas, indicating the potential spread of dermatological conditions.

## DISCUSSION

The age distribution in this study showed a concentration of non-venereal genital dermatoses in younger to middle-aged groups, with the highest prevalence in the 21-30 age group (25%) followed by 31-40 years (20%). Similar findings were observed by Waugh et al. (2013)<sup>8</sup>, where 30% of patients were in the 20-30 age group, and by Khandpur et al. (2014)<sup>9</sup>, who found that 28% of their patients with non-venereal dermatoses were between 20 and 35 years old. In our study, the elderly population (61-80 years) constituted only 15% of the cases, in contrast to Bjekić et al. (2016)<sup>10</sup>, who reported 20% of cases in the same age group, showing that genital dermatoses, while less frequent, are still relevant in older adults. This difference might be attributed to variations in healthcare access or underreporting in the elderly.

Regarding marital status, 70% of our patients were married, which aligns with the findings of Bjekić et al. (2016)<sup>10</sup>, where married patients formed 68% of the study population. In both studies, the higher prevalence among married individuals might be due to increased sexual activity or related hygiene practices. Unmarried patients constituted 25% of our study population, closely resembling the 22% reported in Rai et al. (2017). This demonstrates that genital dermatoses affect both married and unmarried populations, although married individuals dominate the demographic.<sup>11</sup>

The educational background of our patients revealed that 40% had secondary education, and 30% had higher education, which suggests a correlation between education and healthcare-seeking behavior. In contrast, Pal et al. (2017)<sup>12</sup> reported that 35% of their patients with genital dermatoses had received higher education. The lower percentage in our study

could be due to differences in the geographical area or healthcare accessibility in the populations studied.

In our study, benign conditions and physiological variants accounted for 20% of cases, with pearly penile papules being the most common at 10%. Jha et al. (2015) found similar results, with benign conditions making up 22% of the cases and pearly penile papules accounting for 12%.<sup>13</sup> These figures suggest that benign lesions are commonly seen in non-venereal genital dermatoses but do not require extensive treatment unless for cosmetic reasons. Angiokeratoma of Fordyce (4%) and acrochordons (2%) were also consistent with findings by Khandpur et al. (2014), who reported 3% and 2% prevalence, respectively.<sup>9</sup>

Infections and infestations were present in 28% of our patients, with scabies being the most frequent infection (8%), followed by candidiasis (7%). This aligns with the study by Pal et al. (2017)<sup>12</sup>, where scabies accounted for 10% of the total cases, and candidiasis for 8%. Our results closely mirror these findings, indicating that infections remain a significant contributor to non-venereal dermatoses. Similarly, Rai et al. (2017) found a comparable infection prevalence of 30%, with a slightly higher incidence of fungal infections like candidiasis and tinea. This suggests that infectious agents, particularly fungal and parasitic infections, are common in genital dermatoses.<sup>11</sup>

Inflammatory conditions were the most frequent category in our study, comprising 38% of the total cases, with lichen sclerosus et atrophicus (7%) and lichen planus (5%) being the most common. Morrison et al. (2016)<sup>14</sup> reported that inflammatory conditions accounted for 35% of their cases, with lichen sclerosus and lichen planus having similar prevalence rates of 6% and 5%, respectively. Pandhi et al. (2018) also found that lichen sclerosus and lichen planus were the leading inflammatory conditions, present in 8% and 6% of their study population. These consistent findings across studies emphasize the inflammatory nature of many non-venereal dermatoses.<sup>15</sup>

Pre-malignant and malignant conditions were rare in our study, making up only 4% of cases, including erythroplasia of Queyrat, squamous cell carcinoma, and verrucous carcinoma. These figures are comparable to Bunker et al. (2019)<sup>16</sup>, who reported a 5% prevalence of malignant conditions in their study, with squamous cell carcinoma being the most frequent. Despite the low incidence, the presence of these conditions underscores the need for early detection and appropriate management of potentially life-threatening lesions.

Miscellaneous conditions, such as vitiligo (3%), sebaceous cysts (2%), and lupus vulgaris (1%), contributed to a small percentage of cases. These results are similar to those reported by Yoganathan et al. (2018)<sup>17</sup>, where vitiligo was present in 4% of patients, and sebaceous cysts in 3%. While these conditions are not directly related to genital dermatoses, their occurrence on the genital skin may cause discomfort or require treatment.

In our study, the majority of patients (60%) had lesions confined to the genital region alone, which is in line with Waugh et al. (2013)<sup>8</sup>, who reported that 62% of patients with non-venereal genital dermatoses had localized lesions. This suggests that most cases are focal and affect the external genitalia. However, 20% of our patients had both genital and skin involvement, a result similar to that of Khandpur et al. (2014)<sup>9</sup>, who reported 18% of their cases with both genital and skin involvement. These findings suggest that systemic or widespread dermatological conditions, such as psoriasis or lichen planus, may also affect the genital area.

In our study, 10% of patients had orogenital lesions, which may suggest conditions like Behcet's disease or pemphigus. Edwards et al. (2017) found a similar rate of orogenital lesions (9%) in their study, highlighting that multi-site involvement in genital dermatoses may indicate more complex or systemic conditions.<sup>18</sup>

## CONCLUSION

This study highlights the diverse spectrum of non-venereal genital dermatoses in adult males, with the majority of cases affecting younger to middle-aged groups. Inflammatory conditions were the most common, followed by infections and benign lesions. While the majority of lesions were confined to the genital region, some patients had systemic involvement. Pre-malignant and malignant conditions were rare but require vigilance for early detection. The findings emphasize the importance of thorough clinical evaluation and appropriate diagnostic workup to manage these conditions effectively.

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