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Clinical Spectrum of Non-venereal Genital Dermatoses in Adult Males

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ABSTRACT

Objectives: This study aims to evaluate the frequency of non-venereal genital dermatoses in male patients.

Methods: This was a descriptive, observational study was included adult male patients having non-venereal genital dermatoses attending the skin and venereal disease outpatient department of a tertiary care referral hospital between January 2014 and August 2015. All patients with any venereal dermatoses were excluded from the study.

Results: The study included 200 male subjects with non-venereal genital dermatoses. The mean age of the study population was 39.8±14.1 years. Of the cases, 68 (34.0%) were dermatological, 52 (26.0%) were infectious causes, 32 (16.0%) were physiological variants, 29 (14.5%) were genital dermatoses revealed drug-induced, 11 (5.5%) were malignant, and 8 (4.0%) were idiopathic. Among the non-venereal genital dermatoses, the most common disorders were balanoposthitis with 42 (21.0%), erosive balanitis with 29 (14.5%), fixed drug eruptions with 29 (14.5%), pearly penile papules with 22 (11.0%), vitiligo with 15 (7.5%), and lichen planus with 15 (7.5%). Itching was the most common symptom in 73 (36.5%) of the cases. Glans and prepuce were the most frequent site of the involved area in 60 (30.0%) cases. Extragenital involvement was observed in 68 (34.0%) of the cases. The most common morphological presentation was papules in 50 (25.0%) cases, followed by plaques in 38 (19.0%) and erosions and fissuring in 35 (17.5%).

Conclusion: Family physicians frequently encounter dermatological diseases. Therefore, the management of dermatological diseases by family physicians is important.

Keywords: Adult, genital diseases, male

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INTRODUCTION

Genital dermatology includes a wide variety of lesions and skin rashes that affect the genital area.[1] This encompasses both venereal as well as non-venereal dermatoses. This domain of dermatology has been an area of intense research and attention in recent times. This has been a gray area for patients as well as physicians, especially in a country like ours where patients seek attention pretty late. A thorough clinical evaluation and diagnosis are mandatory to effectively treat the condition. Various dermatoses affecting the male genitalia are not always sexually transmitted. Those which are not sexually transmitted are referred to as non-venereal dermatoses of male genitalia. These can be divided according to etiology, morphology, and location. The non-venereal dermatoses in males are further subdivided into two

groups, lesions exclusively seen in genitalia and others affecting genitalia as well as other body parts.

These groups of disorders assume considerable significance because of confusion with the venereal counterparts leading to considerable mental agony and guilt feeling in affected individuals.[1] Non-venereal dermatoses also include lesions which are forerunners of malignancy, a prompt early diagnosis, and treatment of which can curtail the risk of malignancy.

There is a paucity of information and data regarding the pattern of non-venereal dermatoses in males in India.[2] A detailed study on this aspect of dermatology will definitely be helpful for physicians dealing with such patients. This study aims to evaluate the frequency of non-venereal genital dermatoses in male patients.

METHOD

This was a descriptive, observational between January 2014 and August 2015, comprising a total of 200 consecutive male patients having genital lesions of non-venereal origin coming to the skin and venereal disease outpatient department of a tertiary care referral hospital over 18-month period constituted the study participants. All male patients more than 15 years of age, coming with complaints of genital lesions, were screened for non-venereal dermatoses. Any case with a diagnosis of venereal diseases was excluded from the study. After obtaining informed consent, detailed history regarding age, marital status, occupation, initial site of involvement, duration of the disease, and comorbidity were taken. A physical examination was done to look for any associated lesions elsewhere in the body. Investigations such as potassium hydroxide mount, Gram staining, and biopsy for the histopathological study were done as and when required to arrive at the correct diagnosis. In this study, a total of 29 different types of non-venereal dermatoses were seen, which were broadly classified into six categories (physiological and benign acquired, dermatological, infectious, drug-induced, premalignant/malignant, and idiopathic) based on etiology.

The data collected were entered into a Microsoft Excel worksheet. Descriptive statistics were evaluated. Mean and standard deviation were used for continuous variables. Frequency and percentage were used for categorical variables.

RESULTS

A total of 200 male patients with non-venereal genital dermatoses were included in the study. The sociodemographic features of the study population are summarized in Table 1.

Table 1. Sociodemographic features of the study population

	Mean±SD
Age (years)	39.8±14.1
	n (%)
Age groups	
15–19 years	10 (5.0)
20–29 years	45 (22.5)
30–39 years	57 (28.5)
40–49 years	41 (20.5)
50–59 years	30 (15.0)
60–69 years	12 (6.0)
≥70 years	5 (2.5)
Occupation	
Farmer	88 (44.0)
Student	64 (32.0)
Businessman	25 (12.5)
Others	23 (11.5)
Locality	
Rural	122 (61.0)
Urban	78 (39.0)
Marital status	
Married	152 (76.0)
Unmarried	48 (24.0)

SD: Standard deviation.

Of the cases, 68 (34.0%) were dermatological, 52 (26.0%) were infectious causes, 32 (16.0%) were physiological variants, 29 (14.5%) were genital dermatoses revealed drug-induced, 11 (5.5%) were malignant, and 8 (4.0%) were idiopathic. The frequency of non-venereal genital dermatoses is summarized in Table 2.

The most common morphological presentation was papules in 50 (25.0%) cases, followed by plaques in 38 (19.0%), erosions and fissuring in 35 (17.5%), and only erosion in 31 (15.5%) cases. Furthermore, macules were seen in 15 (7.5%) cases, ulcers and nodules each in 10 (5.0%) cases, and exophytic growth in 4 (2.0%) cases.

Among the 42 patients who presented with balanoposthitis, 20 (47.6%) had a prior history of diabetes mellitus, whereas 12 (30.0%) patients were subsequently diagnosed with diabetes mellitus for the 1st time after evaluation.

When the duration of symptoms was evaluated, it was <1 month in 100 (50.0%) cases, 1–6 months in 51 (25.5%) patients, 6 months–1 year in 27 (13.5%) patients, and 21

Table 2. Frequency of non-venereal genital dermatoses

Lesions	n (%)
Balanoposthitis	42 (21.0)
Erosive balanitis and fixed drug eruption	29 (14.5)
Pearly penile papule	22 (11.0)
Lichen planus	15 (7.5)
Genital vitiligo	15 (7.5)
Balanitis xerotica obliterans	8 (4.0)
Scabies	7 (3.5)
Genital psoriasis	6 (3.0)
Steatocystoma	6 (3.0)
Zoon's balanitis	6 (3.0)
Calcinosis cutis	6 (3.0)
Lichen simplex chronicus	5 (2.5)
Lymphangiectasia	4 (2.0)
Lichen sclerosis	4 (2.0)
Fordyce's spot	4 (2.0)
Carcinoma penis	4 (2.0)
Irritant contact dermatitis	3 (1.5)
Angiokeratoma of Fordyce	3 (1.5)
Lichen nitidus	1 (0.5)
Tinea corporis	1 (0.5)
Tinea versicolor	1 (0.5)
Papulonecrotic tuberculid	1 (0.5)
Median raphe cyst	1 (0.5)
Sebaceous cyst	1 (0.5)
Sebaceous hyperplasia	1 (0.5)
Pyogenic granuloma	1 (0.5)
Porokeratosis	1 (0.5)
Loxocelism	1 (0.5)
Smegmalith	1 (0.5)
Total	200 (100.0)

(10.5%). It was observed that the patient had symptoms for more than 1 year. Moreover, one (0.5%) case had a genital lesion since birth.

Extragenital involvement was observed in 68 (34.0%) of the cases. When cases with extragenital region involvement were evaluated, 10 (66.6%) vitiligo cases, 19 (65.0%) erosive balanitis cases, 9 (60.0%) lichen planus cases, and 15 (35.0%) balanoposthitis cases were involved in the extragenital areas. Moreover, all cases of tinea corporis, tinea versicolor, psoriasis, and scabies also had extragenital site involvement at presentation. The frequency of predominant symptoms and sites of involvement are summarized in Table 3.

Table 3. Frequency of predominant symptoms and sites of involvement

Symptoms	
Itching	73 (36.5)
Asymptomatic	65 (32.5)
Burning sensation	20 (10.0)
Pain	19 (9.5)
Inability to retract the foreskin	10 (5.0)
Thinning of stream	5 (2.5)
Mass	4 (2.0)
Oozing	4 (2.0)
Site of involvement	
Glans and prepuce	60 (30.0)
Glans	47 (23.5)
Scrotum	37 (18.5)
Prepuce	24 (12.0)
Corona	22 (11.0)
Shaft	10 (5.0)

DISCUSSION

Non-venereal genital dermatoses include a wide spectrum of diseases with varied etiology.[1] They also include lesions which are forerunners of malignancy, a prompt early diagnosis, and treatment of which can curtail the risk of malignancy. Male patients with non-venereal dermatoses were usually present to genitourinary experts or physicians, which can lead to misdiagnosis of the condition due to lack of expertise. Modification of the morphology of lesions due to flexural site involvement can add to the problem.

In this study, a total of 29 different types of non-venereal genital dermatoses were evaluated among males, and 21% of patients had balanoposthitis, followed by erosive balanitis and fixed drug eruptions and pearly penile papules. Kumar et al. did a study on the South Indian population and found 28 different types of non-venereal genital dermatoses among males, with scabies forming the most common disorder, followed by candidiasis and vitiligo and pearly penile papules.[3] Karthikeyan et al. reported around 25 different types of non-venereal genital dermatoses in their study, with genital vitiligo being the most common disorder.[2] Similarly, Saraswat et al. found around 16 different types of diseases in their cohort.[1] Khoo and Cheong found pearly penile papules as the most common non-venereal dermatoses, which was seen in around 14.3% of their cases.[4] You et al., in their study involving dermatoses of the glans penis among Korean subjects, identified 26 different types of dermatoses. Among them, inflammatory dermatoses were the most common etiology, followed by infectious

causes. The most common dermatosis of the glans penis was seborrheic dermatitis.[5] In another study by Marcos-Pinto et al., the authors reported around 108 patients with non-venereal penile dermatoses, which was confirmed by histopathological examination.[6] In their cohort, inflammatory diseases were seen in around 66% of the patients, whereas neoplastic dermatosis was seen in 34% of cases.

Among the physiological variants and benign conditions, pearly penile papules were seen among 11% of patients in this study. Khoo and Cheong found pearly penile papules in 14.3% of studied cases among the Asian population.[4] Similarly, Kumar et al. found pearly penile papules in around 10.5% of his cases, which was undertaken in the South Indian population.[3] Angiokeratoma of Fordyce was seen among three patients in the present study. In agreement with this study, Karthikeyan et al. and Acharya et al. reported it in around 2 cases among the entire study population.[2,7] Khoo and Cheong and Saraswat et al. reported that sebaceous cyst was seen in 3.7% and 7% of their cases, respectively.[1,4] Only a single case of the sebaceous cyst was found in this study population. In contrast to these findings, Karthikeyan et al. encountered a much higher percentage of cases suffering from the sebaceous cyst.[2]

Among infections and infestations, balanoposthitis comprised 21% of cases in this study. Karthikeyan et al. and Kumar et al. found 5 and 12% cases of candida balanoposthitis, respectively.[2,3] Out of these cases of balanoposthitis in this study, 47.6% of patients were known as diabetics. This suggests that candidal balanoposthitis in an apparently healthy male may be a cutaneous marker of underlying diabetes mellitus. A study by Bromage et al. showed that the diagnosis of diabetes mellitus was made for the 1st time in 8% of the patients with candida balanitis.[8] According to an Internet-based survey done by Verma and Wollina of 20,000 dermatologists from across the country, diabetes mellitus was detected for the 1st time in 31% of patients presenting with candidal balanoposthitis, which is comparable to India.[9] The study by Acharya et al. reported infection as the most common disorder contributing to 40% of cases, with scabies being the most common among the study population.[7] Similarly, Kumar et al. found 37.5% of cases of infections and infestations with scabies as the underlying cause in 19% of cases.[3] In the present study, infections constituted only 26% of total dermatoses, with scabies forming a minority of cases. The present study had one case each of tinea corporis over the shaft, tinea versicolor, and papule-necrotic tuberculid. Saraswat et al. found one case of papule-necrotic tuberculid.[1]

Among dermatological conditions, genital lichen planus was encountered in 7.5% of patients in the present study. Similar findings were reported by Saraswat et al., who found that around 9% of their cases were lichen planus.[1] In contrast to it, a study by Karthikeyan et al. suggested lichen planus as a rare cause of non-venereal dermatoses in their study population.[2] In this study, out of the 14.5% of patients with erosive balanitis and drug-induced genital lesions. The most common culprit drug was found to be tinidazole in 41% of cases, followed by ofloxacin, non-steroidal anti-inflammatory drugs, nevirapine, and aspirin. Kumar et al. and Saraswat et al. found 10 and 12 cases of fixed drug eruptions, respectively.[1,3] The drugs implicated in the study done by Kumar et al. were ibuprofen, diclofenac, co-trimoxazole, tetracycline, ciprofloxacin, ornidazole, and metronidazole.[3] Karthikeyan et al. found three cases of fixed drug eruption over the glans penis, all of which were caused due to co-trimoxazole.[2]

Genital vitiligo was seen in 7.5% of patients in this study. Similar findings were seen in the study done by Acharya et al., who found that only 2.5% of cases had genital vitiligo.[7] On the other hand, Karthikeyan et al. and Saraswat et al. have found genital vitiligo much more frequent in their respective cohorts, respectively.[1,2] Lichen simplex chronicus was seen in 2.5% of patients in the present study, which is comparable to the results suggested by Kumar et al.[3] Balanitis xerotica obliterans and steatocystoma multiplex were rarely encountered in this study, and this was in agreement with findings reported by Karthikeyan et al.[2]

Genital psoriasis was encountered in 3% of patients with involvement of the scrotum as well as other sites. Acharya et al. found around five cases, while Karthikeyan et al. found a single case in their respective studies.[2,7] These observations have also been seen in previous studies.[1,3] Lichen sclerosus was seen in 2% of patients in this study, which is almost similar to the study reports of Karthikeyan et al.[2] Lymphangiectasia was found in 2% of patients in this study. Saraswat et al. also reported a nearly similar figure among their cohort due to filariasis.[1] Irritant contact dermatitis was seen in 1.5% of patients in this study. Similar findings were seen in a study done by Kumar et al., who found 2.5% of cases of irritant contact dermatitis were due to indigenous medications.[3] Lichen nitidus was seen in a single patient by us as was seen earlier.[1,2]

Among premalignant and malignant conditions, Zoon's balanitis was encountered in 5.5% and 3% of patients. Saraswat et al. found the above condition in 2% of cases.[1] Karthikeyan et al. and Kumar et al. each found one case of erythroplasia of Queyrat, respectively, which was not seen

in this study.[2,3] Marcos-Pinto et al. found Zoon's balanitis in 27.8% of cases and erythroplasia of Queyrat in 8.3% of cases.[6] One case of Zoon's balanitis progressed to squamous cell carcinoma (SCC) in their study after 2 years despite treatment. Similarly, You et al. reported erythroplasia of Queyrat in 7.7% of cases and Zoon's balanitis in 7.7% of cases in their cohort of cases.[5]

Few diseases which were seen in this study population are either rarely reported or not reported in various previous studies. Calcinosis cutis was seen in 3% of our patients. Karthikeyan et al. reported scrotal calcinosis in 4% of patients.[2] However, Acharya et al. and Khoo and Cheong did not come across any cases of calcinosis cutis in their respective studies.[4,7] A single case of porokeratosis was found, which has not been reported in prior studies. A rare case of loxoscelism was seen in one patient. Loxoscelism is caused by bites from spiders of the Loxosceles genus (family Sicariidae).[10] Isolated, cutaneous loxoscelism is the most common presentation and is characterized by local erythema, ischemia, ulceration, necrosis, and subsequent scarring.

CONCLUSION

Family physicians and general practitioners often see patients with genital dermatoses. The clinical presentation of venereal and non-venereal genital dermatoses may closely mimic and hence may present as a diagnostic dilemma to treating physicians. As treatment strategies and management outcomes are quite different for venereal and non-venereal dermatoses, early identification by concerned physicians will definitely lead to treatment optimization. It should be kept in mind that not every genital lesion is venereal, and therefore, a correct and prompt diagnosis is pivotal for physicians and patients alike.

Disclosures

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Authorship Contributions: Concept – S.P.; Design – S.P.; Supervision – S.N.; Materials – L.M.; Data collection and/or processing – L.M., S.D.; Analysis and/or interpretation – L.M., S.D.; Literature search – S.D.; Writing – S.D.; Critical review – S.P.

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