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Original Research Article

A Hospital Based Clinical Evaluation of Non-Venereal Genital Dermatoses in Adult Male: a Retrospective Study

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Abstract

Aim: A clinical investigation on non-venereal genital dermatoses in adult male.

Material and Methods: This study was conducted Department of Dermatology, GMCH, Purnia, Bihar, India for 18 months. A series of 200 male patients over the age of 18 years with non-venereal dermatoses of external genitalia were screened among the patients. 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.

Results: The overall prevalence of non-venereal genital dermatoses during the study period was found to be 30.8 per 10,000 male patients attending the department of dermatology. The age of the patients ranged from 18 to 78 years with the mean age of 48years. Majority were in the age group of 21-30 years (60%) followed by 31-40 years (54%). Infections and infestations group formed the majority (37.5%) followed by inflammatory disorders (30%), Benign variants (16%), Miscellaneous conditions, Malignancies (1.5%). The most common disorder was scabies which accounted for 38% followed by candidiasis and vitiligo 12% each, pearly penile papules (10.5%). The patients were grouped into four categories based on the site of involvement of the lesions Table 3. Exclusive involvement of the genitalia was significantly higher (52.5%) than genitalia being involved as a part of generalised eruption (47.5%).

Conclusion: Knowledge about the prevalence, clinical and etiological characteristics of various non-venereal genital dermatoses is helpful in arriving at a diagnosis and also creating awareness among patients to improve their personal hygiene and social habits.

Keywords: Non-venereal, Genital, Dermatoses, Male

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. [1-4] 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. [5,6] 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. [7-10]

Material and Methods

This study was conducted Department of Dermatology, GMCH, Purnia, Bihar, India for 18 months. A series of 200 male patients over the age of 18years with non-venereal dermatoses of external genitalia were screened among the patients. 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 225.

Results

The overall prevalence of non-venereal genital dermatoses during the study period was found to be 30.8 per 10,000 male patients attending the department of dermatology. The age of the patients ranged from 18 to 78 years with the mean age of 48years. Majority were in the age group of 21-30 years (60%) followed by 31-40 years (54%) Table 1. Sixty eight (68%) patients were married and the rest 32% were unmarried. Scrotum was affected in 51% of patients, penis in 39% and both in 10%. A total of 28 different conditions were identified which were broadly classified into 5 categories based on etiology (Table 2). Infections and infestations group formed the majority (37.5%) followed by inflammatory disorders (30%), Benign variants (16%), Miscellaneous conditions, Malignancies (1.5%). The most common disorder was scabies which accounted for 38% followed by candidiasis and vitiligo 12% each, pearly penile papules (10.5%). The patients were grouped into four categories based on the site of involvement of the lesions Table 3. Exclusive involvement of the genitalia was significantly higher (52.5%) than genitalia being involved as a part of generalised eruption (47.5%).

Table 1: Age distribution of patients

Age in years	No. Of patients
<20	9(4.5%)
21-30	60(30%)
31-40	54(27%)
41-50	38(19%)
51-60	13(6.5%)
61-70	14(7%)
71-80	12(6%)

Table 2: Categorization of lesions based on etiology

Lesions	No. (%)
Benign conditions and physiological variants	
Pearly penile papules	21 (10.5%)
Lichen nitidus	3 (1.5%)
Angiokeratoma of Fordyce	4 (2%)
Acrochordons	1 (0.5%)
Seborrheic keratoses	3 (1.5%)
Infections & Infestations	
Scabies	38 (19%)
Candidiasis	24 (12%)
Furunculosis	6 (3%)
Tinea	5 (2.5%)
Phthriasis	1 (0.5%)
Inflammatory conditions	
Lichen planus	6 (3%)

Lichen sclerosus et atrophicus	4 (2%)
Psoriasis	4 (2%)
Contact dermatitis	7 (3.5%)
Scrotal dermatitis	6 (3%)
pemphigus	5 (2.5%)
Lymphangiectasia	2 (1%)
Fixed drug eruption	10 (5%)
Stevens-Johnson syndrome	5(2.5%)
Lichen simplex chronicus	9(4.5%)
Behcet's disease	1(0.5%)
Zoon's balanitis	1(0.5%)
Pre-malignant & malignant conditions	
Erythroblastic of Queyrat	1(0.5%)
Squamous cell carcinoma	1(0.5%)
Verrucous carcinoma	1(0.5%)
Miscellaneous	
Vitiligo	24(12%)
Sebaceous cyst	6(3%)
Lupus vulgaris	1(0.5%)

Table 3: Classification based on site

Site	Genital alone (%)	Orogenital (%)	Genital & skin (%)	Orogenital & skin (%)
No. of patients	105(52.5%)	8(4%)	71(35.5%)	16(8%)

Discussion

The overall prevalence of non-venereal genital dermatoses during the study period was found to be 30.8 per 10,000 male patients which is more than that observed by Karthikeyan K et al,3 where the prevalence was 14.1 per 10000 male patients. Some patients with non-venereal dermatoses report to general physicians or genito-urinary surgeons, the true prevalence and pattern can be known only with combined clinics. The age of the patients in our study ranged from 18 to 78 years with the mean age of 48years.Majority were in the age group of 21-30 years (60%) followed by 31-40years (54%) similar to the studies done by Karthikeyan K et al [3] and Saraswat et al [4] where as in the study done by Acharya et al5 majority belonged to the age group of 31 to 40years (31%). A total of 28 different conditions were identified in the present study. Karthikeyan et al [3] and Saraswat et al [4] had observed 25 and 16 different types in their respective studies. The cases were broadly classified into five categories based on etiology (Table 2). Infections and infestations group formed the majority (37.5%) followed by inflammatory disorders (30%), Benign variants (16%), Miscellaneous conditions, Malignancies (1.5%). The most common disorder was scabies which accounted for 38% followed by candidiasis and vitiligo 12% each, pearly penile papules (10.5%). The commonest disorder observed in various studies is as shown in Table 4.

Table 4: Commonest disorder observed in various studies

Present study	Scabies
Khoo LS et al[6]	Pearly Penile Papules
Saraswat et al[4]	Vitiligo
Acharya et al[5]	Infections
Karthikeyan et al[3]	Vitiligo

Scabies was found in 19% of cases in the present study. The prevalence of Scabies was 10% in Saraswat et al [4] study and 9% in Karthikeyan et al[3] study. Candidiasis presented in 12% of cases as erythematous eroded lesions on the glans, radial fissures over the prepuce. Most of these patients were in 40 to 50 year age group and 18 of them were found to have type 2 diabetes mellitus. Patients with recurrent episodes of phimosis secondary to candidiasis were advised circumcision. Karthikeyan et al [3] noted 5% cases of candidal balanoposthitis and it was 6.5% in the study by Acharya et al. [5] A case of Lupus vulgaris presented as two annular plaques over the scrotum with raised margins at one end and scarring at the other and the diagnosis was confirmed by histopathology. Furunculosis (3%), tinea (2.5%), pthirius pubis (0.5%) constituted the rest in infections and infestations group. In the

present study, we encountered genital vitiligo in 12% cases which is in concordance with the studies done by Karthikeyan et al[3] and Saraswat et al [4] who reported vitiligo in 16% and 18% cases respectively. Pearly Penile Papules were seen in 10.5% of our patients similar to Khoo LS et al [6] (14.3%), Saraswat et al [4] (16%). The percentage of Pearly Penile Papules ranged from 2.5% to 34.4% in various studies. [3,5,7] They appeared as multiple flesh coloured to pale small rounded papules around the coronal sulcus. Most of these patients belonged to younger age group and are apprehensive considering them to be warts. They were counselled regarding the benign nature. Sebaceous cysts were found in 6% of cases. A cutaneous horn developed from the underlying sebaceous cyst in one of these patients. Angiokeratoma of Fordyce was observed in 4 patients as bluish red keratotic papules over the scrotum. There were no similar lesions elsewhere in the body. Karthikeyan et al[3] and Acharya et al [5] reported two cases each. Acrochordons over the external genitalia are quite rare. [8,9,10] An acrochordon of 2×2.5cm size was seen arising from the prepuce. This patient also had multiple acrochordons over his neck. Lichen nitidus and Seborrheic Keratoses were seen in three patients each. Acharya et al[5] and Karthikeyan et al$_3$ reported similar findings. Lichen planus was found in six patients(3%) which is in contrast to Saraswat et al[4] (9%),Puri and Puri et al[2] (6.6%), Karthekeyan et al[3] (1%). Of these, four had genital lesions alone with annular morphology, one had urogenital lesions and the other had concurrent oral, genital and skin involvement. Psoriasis involving the genitalia was found in two patients. Out of the two, one had exclusive involvement of glans similar to the observation by Karthikeyan et al[3] and the other had lesions elsewhere. Saraswat et al[4] observed 3% cases of genital psoriasis in their study but all of these patients had lesions elsewhere in the body. Acharya et al[5] came across five cases of psoriasis involving the genitalia in their study. Genital involvement can occur in up to 30% of patients with psoriasis. In 2 to 5% the lesions may occur only in this area.[2] There are several reports of isolated occurrence of lichen planus and psoriasis on the glans penis. [11-14] The explanation can be related to Koebnerisation due to intercourse, tight clothes, contact with urine. Ten cases of Fixed drug eruption (FDE) were noticed and the drugs implicated were Ibuprofen, diclofenac, cotrimoxazole, tetracycline, ciprofloxacin, ornidazole and metronidazole. Saraswat et al4 reported 12% cases of FDE where as Karthekeyan et al[3] had 3 cases in their study. Stevens Johnson syndrome was seen in 5 patients. The causative drugs were Phenytoin in two cases, Carbamazepine in one case, Ciprofloxacin in the other two. Behcet's disease was diagnosed in a 25year old male patient who had oral, genital aphthae and erythema multiforme like lesions over the extremities. The diagnosis was confirmed by histopathology. Lymphangiectasia were seen in 2 known cases of filariasis, as multiple papules and vesicles over the scrotum. One of them had swelling of the penis resulting in Ram-horn penis. Lymphangiectasia of scrotum secondary to filariasis was observed in 4 and 2 patients respectively, in the studies done by Karthikeyan et al[3] and Saraswat et al[4]. Binitha et al reported a similar case. [15] Filarial involvement of penis in the late stage may lead to "ram horn" penis. [16] However, cases of genital lymphangiectasia along with ram horn penis were not reported so far. Lichen simplex chronicus of scrotum was seen in 9 patients. History of atopy was present in 3 of these patients. Concerned about hygiene and STDs, some people use vigorous cleansing regimens, deodorants which can lead to irritant contact dermatitis. We have come across five such cases in the present study. Two of these have followed application of indigenous medication. Lichen sclerosus et atrophicus (LSA) was seen in 3 (1.5%) patients in our study similar to Karthikeyan et al[3] (2%) and Saraswat et al[4] (3%). An uncircumcised middle aged patient presented with erythematous slightly raised plaques over the glans with histology confirming the diagnosis of zoon's balanitis. Saraswat et al[4] had reported two cases of zoon's balanitis while Acharya et al,[5] Karthikeya et al[3] didn't find these cases in their study. Squamous cell carcinoma can develop from chronic inflammatory lesions like LSA. [17] Early recognition and appropriate treatment can prevent this complication. Scrotal dermatitis was seen in 6 patients and responded well with riboflavin therapy. Five cases of pemphigus involving the genitalia were seen. A 71 year old patient presented with persistent, red velvety plaque over the prepuce. Histology confirmed the diagnosis of erythroplasia of Queyrat. A single cauliflower like exophytic growth surrounding the distal shaft of the penis was seen in a 68 year old patient. The patient was referred to surgery for excision biopsy which showed features consistent with verrucous carcinoma. A single case of Squamous cell carcinoma presented as an ulcerated growth over the tip of the penis.

Conclusion

Knowledge about the prevalence, clinical and etiological characteristics of various non-venereal genital dermatoses is helpful in arriving at a diagnosis and also creating awareness among patients to improve their personal hygiene and social habits. Clinician should have an unbiased approach towards genital conditions so that patients will be confident to seek medical help. Explaining the true and benign nature of the lesions will remove venereophobia. In case of premalignant and malignant conditions early diagnosis allows for less invasive surgery with resultant lower morbidity for the patients. This study was quite helpful in

understanding the various patterns of presentations of the non-venereal dermatoses. We have come across certain interesting cases like verrucous carcinoma, lupus vulgaris of scrotum, Behcet's disease, Erythroblastic of Queyrat, Lymphangiectasia with ram horn penis and Acrochordon over prepuce.

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