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Non- venereal genital dermatoses in adult female: A hospital based observational study

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Abstract
Background: Any genital dermatoses in a sexually active female are first considered to be venereal dermatoses. Venereal diseases are the primary concern of the affected patient and are associated with mental distress and guilt. Because of the associated embarrassment and psychological sequelae, women do not seek medical care; thus, it is crucial to have proper knowledge of various non-venereal dermatoses and their varied presentations.
Method: It was a observational study which included a total of 170 patients attended Dermatology department over a period of 18 months from January 2020 to June 2021. Cases having any venereal diseases were excluded from the study. Scabies and dermatophytic infections were excluded.
Result: The incidence of non-venreal dermatoses among female patients attending OPD is not common. Most common age group affected was between 18 to 30 years which is reproductive age group. These are broadly divided into different categories like Inflammatory, Autoimmune, Multisystem diseases, Exogenous, Benign and malignant neoplasms. Most common dermatoses observed were Candidosis (32 cases) and Pemphigus vulgaris (12 cases).
Conclusion: Non venereal genital dermatoses are more prevalent among reproductively active females and has more or less uniform clinical pattern across the country. Maximum number of dermatoses in females are benign and require no aggressive therapeutic approach. This study was helpful in knowing the clinical pattern and management of different non-venereal genital dermatoses and distinguishing them from venereal dermatoses which helps in reducing guilt among the patients.

Keywords: Non-venereal, candidiasis, genital dermatoses

Introduction
Dermatoses affect the female genitalia in a distinct manner, as the skin is vulnerable to various native environmental factors like heat, moisture etc that alter the morphology and characteristics of common dermatoses. The diseases that aren't sexually transmitted are classified underneath non-venereal genital dermatoses[1]. Non venereal genital dermatoses are often confused with various sexually transmitted infections due to their similar presentation. Thus, a detailed history and complete cutaneous examination are vital in making correct diagnosis.
There is no proper classification of non-venereal dermatoses of female genitalia. These are broadly divided into following categories [1]

- Inflammatory cutaneous disorders (Psoriasis, pemphigus vulgaris, lichen planus, lichen sclerosus et atrophicus)
- Autoimmune (atopic dermatitis, vitiligo)
- Multisystem diseases (Behcet syndrome, Crohn disease)
- Exogenous (allergic/irritant contact dermatitis, corticosteroid abuse, fixed drug eruption)
- Benign and malignant neoplasms (Angiokeratoma, zoon's vulvitis, squamous cell carcinoma) [1]

The major drawback of this classification is that conditions like Generalized and localized vulvodynia, cyclical vulvovaginitis, Vaginismus, and dermographism are not included.
The present study attempts to explore the clinical pattern of various non-venereal genital dermatoses in females and their associated sociodemographic variables. Our purpose was to educate the female patient to overcome the stigma associated with genital dermatoses.

Material and Methods

The study was conducted between January 2020 to June 2021. All adult female patients of Non-venereal genital dermatoses attending the Dermatological outpatient and inpatient department and patients referred from various departments of Mahatma Gandhi medical college and Hospital.

A detailed history was taken like presenting symptoms, duration of dermatoses, history of vaginal discharge or genital ulcer, sexual history, drug history, any urinary complaint was taken. Personal and family history of similar or related dermatoses was asked.

Inclusion criteria

1. Female patients above 18 years attending the skin OPD with non-venereal genital Dermatoses.
2. Patients giving consent for the study.

Exclusion criteria

1. Patients who were not giving consent to the study
2. Male patients
3. Female patients having history of exposure to the risk of sexually transmitted diseases and who had genital dermatoses due to sexually transmitted infections were excluded from the study population
4. Patients with lesions of Tinea and Scabies.

The Diagnosis was made on the basis of history and clinical examination. When required, various investigations like Gram's stain, KOH mount, Tzanck smear, Wood's lamp examination, and histopathological examination were done. VDRL and HIV tests were done to rule out sexually transmitted diseases in suspected cases.

Observations & Results

The following observation were made in the study

- Total number of cases studied – 170
- Most common age group affected – 18 to 30 years (64 cases, 37.65%)
- Domicile of the cases – 111 cases (65.29%) belonged to urban area
- Educational status - 21 cases (12.4%) were illiterates, and 71 cases (41.8%) were graduates
- Occupational status – 128 cases (75%) were housewives
- Maximum patients were married – 135 cases (79.4%)
- Total number of dermatoses observed – 46
- Most common dermatoses observed – Candidosis (32 cases) and Pemphigus vulgaris (12 cases)
- Most common area of involvement – Labia majora
- Most common presenting complaints – vulval pruritus
- Most common genital dermatoses with involvement of skin and mucosa – Pemphigus Vulgaris (8cases, 66.67%)
- Most common oro-genital dermatoses – Lichen planus
- Number of patients with systemic associations - 24

Table 1: Age distribution of the patients

Age Group	No. of cases	Percentage (%)
18-30	64	37.65%
31-40	41	24.12%
41-50	25	14.71%
51-60	20	11.76%
>61	20	11.76%
Total	170	100%

Table 2: Classification of genital dermatoses

Category	No of cases	Most common dermatoses
Inflammatory cutaneous disorders	53 (31.17%)	Pemphigus vulgaris (12, 12.06%)
Infections	63 (37.05%)	Candidosis (32, 18.82%)
Benign and Normal variants	22 (12.94%)	Fordyce spots (5, 2.94%)
Multisystem disorders	4 (2.35%)	Behcet's disease (2, 1.18%)
Premalignant and Malignant neoplasms	18 (10.58%)	LSEA (11, 6.47%)
Miscellaneous conditions	10 (5.88%)	Vitiligo (7, 4.12%)

Table 4: List of dermatoses

Dermatoses	No. of cases	Percentage
Candidosis	32	18.82%
Folliculitis	9	5.29%
Vaginosis	8	4.71%
Furunculosis	7	4.12%
Herpes zoster	5	2.94%
Varicella	1	0.59%
Erythrasma	1	0.59%
Lichen planus	6	3.53%
Psoriasis	2	1.18%
HHD	2	1.18%
PRP	1	0.59%
Lichen nitidus	1	0.59%
SJS/TEN	2	1.18%
FDE	2	1.18%
CD	11	6.47%
LSC	3	1.76%
Atopic dermatitis	2	1.18%
ABCD	1	0.59%
Erythroderma	1	0.59%
Pemphigus vulgaris	12	7.06%
Apocrine miliria	3	1.76%

Hidradenitis suppurativa	2	1.18%
Aphthous ulcer	2	1.18%
Fordyce spots	5	2.94%
Angiokeratoma of Fordyce	4	2.35%
Acrochordons	3	1.76%
Bartholin cyst	3	1.76%
Vestibular papillomatosis	3	1.76%
Lymphangioma circumscriptum	2	1.17%
Coloid milia	1	0.59%
Dowling degos disease	1	0.59%
Behcet's disease	2	1.18%
Crohn's disease	2	1.18%
Lichen sclerosus et atrophicus	11	6.47%
Zoon's vulvitis	1	0.59%
Bowen's disease	1	0.59%
Bowenoid papulosis	1	0.59%
Erythroplasia of queyrat	1	0.59%
SCC	2	1.18%
Carcinoma Vulva	1	0.59%
Vitiligo	7	4.12%
Sebaceous cyst	1	0.59%
Rectovaginal Fistula	1	0.59%
Fibroma	1	0.59%
	170	100%

Table 3: Genital dermatoses Associated with Diabetes mellitus

Genital dermatoses	No. of patients
Candidosis	4
Pemphigus	3
Vulval pruritus	2
SCC	2
Acrochordons	1
Hailey-hailey disease	1
Total	13

Table 4: Genital dermatoses other Associated systemic disorders

Genital dermatoses	Systemic disorders	No. of cases
Vitiligo	Hypothyroidism	2
Crohn's disease	Inflammatory bowel disease	2
Hypertrophic Lichen planus	Systemic Lupus erythematosus	1
Lichen planus	Chronic kidney disease	1
Erythroderma	Mycosis fungoides	1
Behcet's disease	Joint pain	1
Candidosis	Pancytopenia	1
Furunculosis	Ca Endometrium/ Ca Cervix	2
Bartholin Cyst	Hypertension	1

Discussion

Non – venereal genital dermatoses include a wide range of dermatoses with varied etiology. Any genital dermatoses in a sexually active female are first considered to be venereal dermatoses. Because of the associated embarrassment and psychological sequelae, women do not seek medical care; thus, it is crucial to have proper knowledge of various non-venereal dermatoses and their varied presentations. The problems of female genitalia often go undiagnosed because of insufficient knowledge and prevailing cultural taboos about female genitalia.

Not many comprehensive studies have been done regarding the clinical pattern and distribution of the lesion. Singh *et al*. had done a study on pattern of non-venereal Dermatoses of female genitalia in south India[1]. Puri *et al*. has done a similar study in Punjab [2]. Sivayadevi *et al*. described 100 cases of non-venereal genital dermatoses in female patients[3].

The age of the patients with non-venereal genital dermatoses was found between 18 to 90 years. The majority of them belonged to 18 to 30 years (64 cases, 37.6%). In a study by P. Sivayadevi *et al*., the patients were found between 18 to 55 years; most of them belonged to the 26-40 years (64%) [3] and In study by Neerja Puri *et al*., the maximum patients were in 21 to 40 years group [2].

The distribution of patients in the following study shows that non- venereal genital dermatoses are more common in the reproductive age group. As the sexual exposure age has decreased, making genitalia is more vulnerable to even non-venereal genital dermatoses.

Educational status

Out of 170 patients, 21 (12.4%) were illiterate and about 71 (41.8%) had completed graduation. Educational status indicates that the majority of the patients with good educational staus seek medical advice.

Marital status

135 (79.4%) were married and 35 (20.6%) unmarried in our study. In Singh N *et al*. and Sivayadevi *et al*. reported 81.6% and 72% of patients married in their respective studies [1, 3].

Inflammatory conditions

Contact dermatitis

11 cases (6.47%) of contact dermatitis, including eight allergic reactions and 3 having irritant dermatitis. Two patients in our study gave the history of the application of antiseptic lotion. 2 patients had a history of applying topical steroids and antifungal creams.In our study, the most common site of involvement was the vulval area, followed by labial folds.

Sivayadevi *et al*. reported 4 cases of contact dermatitis due to exogenous agents like povidone-iodine and antifungal creams [3].

Pemphigus Vulgaris

12 (7.06%) cases were recorded, primarily involving labial folds and clitoris. One patient had oral candidiasis. 11

patients showed cutaneous involvement and the most common site involved was the trunk and limbs. The diagnosis was confirmed by skin biopsy and direct immunofluorescence. Prasad AM *et al*. reported 5 cases of pemphigus vulgaris with vulval involvement [4].

Lichen planus

Out of total 6 patients, 1 had lesions over genitalia, skin, and oral mucosa. Three patients had oral lichen planus. The most common site involved is mons pubis, followed by labial folds. The systemic association was found with chronic kidney disease and systemic lupus erythematosus in 2 of the patients. Karthikeyan *et al*. encountered a case of annular genital LP with no lesion present at any other body site [5].

Lichen simplex chronicus

All three cases were of primary etiology and showed bilaterally symmetrical involvement. In contrarily, Singh *et al*. [1] and Muktamani G *et al*. [6] found 16 and 22 cases of LSC, respectively.

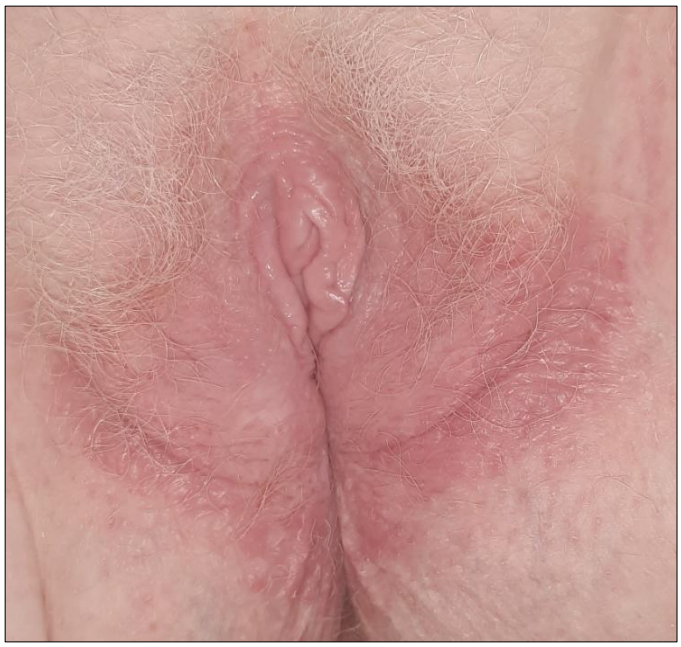
Our observations differ from these studies as our cases were diagnosis-specific. We could find out the cause of chronic vulval pruritus in most cases after ruling out the other causes of vulval pruritus.

Apocrine miliaria

Was found in 3 cases (1.76%). In 2 patients, axillary involvement was also present.

Psoriasis vulgaris

Was found in 2 cases (1.18%) of psoriasis. One patient had genital and palmoplantar involvement. Muktamani G *et al*. [6] reported 9 cases of psoriasis, in which five patients had genital and generalized body involvement.



SJS/TEN

Two (2) patients (1.18%) with SJS/TEN with a history of intake of antipyretics and antispasmodic were seen. One patient had conjunctivitis and hemorrhagic crusting over lips, while another had orogenital involvement. Muktamani G *et al*. [6] reported 4 patients in their study with less severe form.

Hidradenitis suppurativa

Out of Two patients with Hidradenitis suppurativa, one case showed involvement of the axilla. Similar reporting was done by Sivayadevi P *et al*.

Pityriasis rubra pilaris

Single cases was found involving mons pubis and labia majora. Other body sites like the lower abdomen and back were involved. No other study was recorded such observation.

Infections

Candidosis

In our study, we found 32 (18.8%) cases of candidosis. The age of the affected patients ranges from 19 to 64 years. Twenty-two patients have a history of taking prior treatment with oral antifungal and topical steroids and antifungals. Four cases (12.5% out of 32 patients) were associated with diabetes mellitus.

Most of the female patients were obese. In a study by Singh N *et al*. [1], Neerja puri *et al*. [2], and found 11 cases (9.2%) and 3 cases (15%) respectively, which was consistent with our study.

Folliculitis

9 cases were recorded (5.29%), and common symptom being pain with the common site of involvement over mons pubis followed by labia majora.

Singh *et al*. [1] encountered 7 cases, while in a study conducted by Muktamani G *et al*. [5] folliculitis was the most common diagnosis found in 16% of the cases.

Herpes zoster

5 cases (2.94%) of Herpes zoster in our study. 2 patients showed exclusive unilateral involvement of the genital area, while in 3 cases, the lesions were also found in the thigh and buttock region. The most common associated symptoms were pain, burning sensation, and dysuria.

Sivayadevi P *et al*. [3] and Prasad AM *et al*. [4] reported 2 cases and 3 (10.7%) cases in their studies, respectively.

Erythrasma - Single case of erythrasma in 90-yr-old bedridden patients with involvement of other sites like axilla and inframammary area.
Sivayadevi P *et al.* [3] reported 3 cases of erythrasma in their study.

Benign Dermatoses and Normal variants

1. Angiokeratoma of Fordyce – 4 cases were found. Labia majora was the most common site of involvement. Karthikeyan *et al.* [5] found two cases in their studies.
2. Bartholin cyst - 3 cases (1.76%) were recorded, mainly on the inner lip of the labia minora. Singh N *et al.* [1] and Neerja puri *et al.* [2] reported two cases of bartholin's cyst.
3. Acrochordons - We found 3 cases and the most common site involved was labia majora and genitocrural folds. All three cases had a sedentary lifestyle and high BMI.
4. Lymphangioma circumscriptum- Two cases (1.17%) of were recorded, involving the mons pubis and labial folds. Patients complained of uneasiness and difficulty in walking. Histopathology was conclusive in both cases. There was marked fibrosis present in one case.

Normal variants

1. Fordyce spots - 5 cases (2.94%) were recorded, all were asymptomatic in nature. Prasad AM *et al.* [4] reported 1 case in their.
2. Vestibular papillomatosis - 3 cases (1.76%) were found. It is considered an anatomical variant of the vulva in females. They were asymptomatic and incidental findings.

Premalignant dermatoses

In our study, we had 11 cases (6.47%) of Lichen sclerosus et atrophicus, and the maximum number of patients belonged to the age group of 55 to 65 years. Maximum number of the cases showed porcelain white atrophic plaques, and a few, it was extending around vulval and perianal skin in a figure of eight configurations. They were associated with severe pruritus, dyspareunia, and burning micturition. In 4 cases, architectural changes like atrophy of clitoris and labia minora were present. In 3 cases, figure of eight configurations was present.
Singh N *et al.* [1] and Sivayadevi P *et al.* [3] reported 26 and 10 cases in their study, respectively.

A single case of Zoon's vulvitis, Bowen's disease, Bowenoid papulosis, and Eyrthroplasia was found in our study. Histopathological features were consistent with the clinical diagnoses in all three cases.

Malignant dermatoses

In our study, we found 2 cases (1.17%) of Squamous cell carcinoma. Both the patients were in the post-menopausal age group. Singh N *et al.* [1] reported 6 patients with invasive Squamous cell carcinoma and all patients were postmenopausal with a mean age of 55.8years.

Miscellaneous conditions

Vitiligo- 7 cases were present. Five patients showed exclusive involvement of the genitalia, the most common site was the clitoris followed by labial folds. 2 patients showed concurrent involvement of lips and periorbital area. Singh N *et al.* [1] encountered 19 cases (15.8%) in their studies.
Vitiligo was not so common in our study as it is an asymptomatic condition and is often not observed by females.

Site of involvement

In our study, we divided non-venereal genital dermatoses into four different categories according to the involvement of sites-similar type of categorization done by Basheer ahammed *et al.* [7].
We found 120 cases (70%) involving genitalia only. The other three categories were Genitalia & Skin only, Genitalia & other mucosae only, and Genitalia, skin & other mucosae, and we found 32 cases (18.8%), 6 cases (3.52%) and 12 cases (7.05%) respectively. Basheer ahammed *et al.* reported 33(16.5%), 12(6%) and 14(7%) cases in the above-said categories.
In our study, we also divided Non-venereal genital conditions according to the site of involvement in genitalia. We found 40 patients involving a single site of involvement in genitalia. Labia majora and clitoris were the most common site of involvement. Similarly, Neerja puri *et al.* [3] found labium majora as the commonest site of involvement in fe

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