

Non venereal Female Genital Dermatoses: Beyond Sexually Transmitted Infections: A Cross-sectional Study

GEO CELESTIN DANNY¹, G SUKANYA², SHREYA SRINIVASAN³, N ASHOK KUMAR⁴, D MANOHARAN⁵, SOWMYA NAGARAJU⁶



ABSTRACT

Introduction: Genital dermatoses can be categorised as either venereal or non venereal. Non venereal genital dermatoses have various causes, and their presentation may differ from that of cutaneous lesions due to local factors. Therefore, it is crucial to have a proper understanding in order to differentiate non sexually transmitted genital dermatoses from sexually transmitted ones.

Aim: To study the clinical patterns of non sexually transmitted genital dermatoses in females aged above 18 years.

Materials and Methods: A cross-sectional study was conducted at the Outpatient Department (OPD) of Dermatology at a Tertiary Care Hospital in Chennai, India, over a period of one year and six months. It involved 120 female patients above 18 years of age who were diagnosed with non venereal genital dermatosis. All patients were included in the study after providing informed consent. Patients with a history of significant anatomical alterations due to trauma or surgery were excluded. A detailed clinical history was obtained, followed by a thorough dermatological examination. After diagnosing non venereal genital dermatoses, classification based on aetiology and site of involvement was performed. The presence, distribution, and

any associated conditions were also studied. Data was entered into a Microsoft Excel datasheet and analysed using Statistical Package for Social Sciences (SPSS) version 22.0. Categorical data was presented as frequencies and proportions.

Results: The mean age of the study participants was 43.08 years. The present study identified 21 different types of non venereal dermatoses, with infectious dermatosis being the most common in 60 (50%) cases, followed by inflammatory dermatosis 33 (27.5%) cases, miscellaneous conditions in 19 (15.83%) cases, benign and physiological conditions in 7 (5.83%) cases, and malignancies in 1 (0.83%) case. Vulvovaginal candidiasis was the most common dermatosis observed in the present study, accounting for 21 cases (17.5%) of the entire study population.

Conclusion: Genital diseases can cause significant psychological trauma and anxiety for patients. It is important to note that not all genital dermatoses are sexually transmitted. Non-venereal dermatoses affecting the external genitalia in females encompass a spectrum of diseases with diverse aetiologies. Therefore, accurate diagnosis of these non venereal dermatoses is crucial to alleviate the patient's concerns regarding sexually transmitted diseases and the associated stigma.

Keywords: Female genitalia, Infections, Non sexually, Tumours

INTRODUCTION

Non-venereal dermatoses of the female external genitalia are dermatoses that are not transmitted sexually. These include a wide range of conditions, ranging from infections and inflammatory dermatoses to benign and malignant conditions [1]. The prevalence of vulvar dermatoses was reported as 2.12% in a study by Mundhe AD et al., However, the present study included sexually transmitted infections as well, and more large-scale studies are required to pinpoint the prevalence of non venereal female genital dermatosis [2]. Many people fail to maintain cleanliness in this region of the body, and few women engage in aggressive cleaning practices. Local factors, such as moisture, heat, friction, and irritants, along with hormonal effects on the genitalia, may change the appearance of lesions involving the genital area. This can lead to a diagnostic dilemma for the treating physician, as the presentation may vary from that of classical cutaneous lesions [3].

Most genital dermatoses are associated with itching and pain, causing discomfort to the patient and affecting daily activities. Additionally, due to the site involved, genital dermatoses are frequently mistaken for sexually transmitted illnesses. Sometimes, the morphology of the lesions can cause sexual dysfunction, anxiety, and mental distress [4]. Hence, the distinction between sexually and non sexually transmitted genital dermatoses is crucial.

The aim of the present research was to study the clinical pattern of non sexually transmitted genital dermatoses in females aged above 18 years.

MATERIALS AND METHODS

A cross-sectional study conducted at the Outpatient Department (OPD) of Dermatology at of Sree Balaji Medical College and Hospital in Chennai over a period of one year and six months, from September 2021 to February 2023. Ethical clearance was obtained from the Institutional Ethics Committee (IEC) with Ref. No. 002/SBMC/IHEC/2020/1405, and informed consent was obtained.

Inclusion criteria: Female patients above 18 years of age, diagnosed with non venereal genital dermatosis, were included in the study.

Exclusion criteria: Patients with a history of major anatomical alteration following trauma or surgery were excluded from the study.

Study Procedure

A total of 120 patients were recruited for the present study. Clinical history was taken, after which the patients underwent a thorough dermatological examination. After making the diagnosis of non venereal genital dermatoses, classification based on the aetiology and site of involvement was performed. The existence, distribution, and any associated conditions, if present, were studied. In select

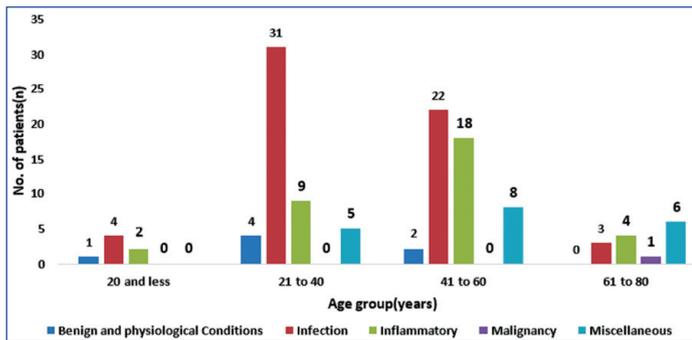
cases, based on history and clinical presentation, sexually transmitted infections were ruled out with appropriate blood tests, tissue/discharge smears, and histopathology.

STATISTICAL ANALYSIS

Data were entered into a Microsoft Excel datasheet and analysed using SPSS version 22.0 software. The categorical data were represented in the form of frequencies and proportions.

RESULTS

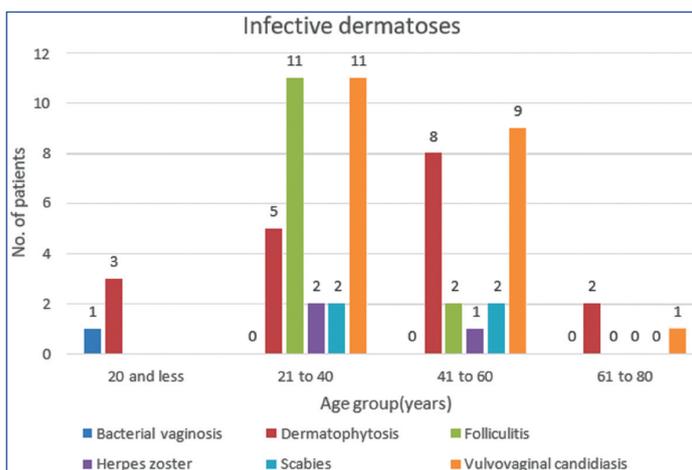
A total of 120 patients with non venereal genital dermatoses were included in the present study. The patients' ages ranged from 18 to 78 years, with a mean age of 43.08 years (SD: 13.79). Most of the patients belonged to the age group of 41 to 60 years, accounting for 50 (41.67%) cases, followed by the age group of 21 to 40 years with 49 (40.83%) cases [Table/Fig-1].



[Table/Fig-1]: Distribution of type of dermatoses across age category.

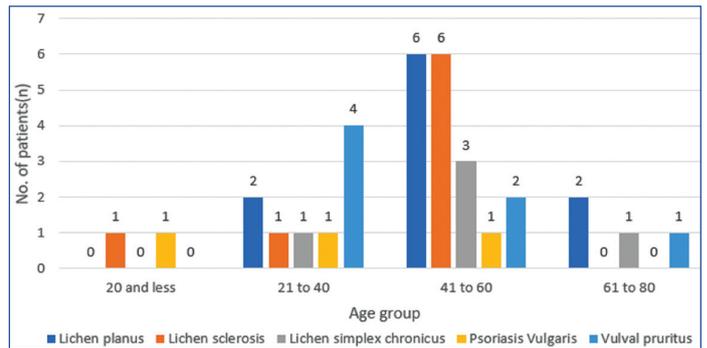
The majority of the patients were married 110 (91.67%), and most of them were housewives 91 (75.83%) by occupation. Other occupations included manual laborers 10 (8.33%), domestic workers 5 (4.17%), nurses 5 (4.17%), receptionists 1 (0.83%), shopkeepers 1 (0.83%), students 2 (1.67%), teachers 1 (0.83%), and technicians 4 (3.33%). In the present study, 21 different types of non venereal genital dermatoses was observed. Infectious dermatoses accounted for 60 (50%) cases, followed by inflammatory dermatoses with 33 (27.5%) cases, miscellaneous conditions with 19 (15.83%) cases, benign and physiological conditions with 7 (5.83%) cases, and malignancy with 1 (0.83%) case.

Among the various infectious dermatoses observed, vulvo-vaginal candidiasis accounted for 21 (35%) cases, while dermatophytosis accounted for 18 (30%) cases. The most common age group affected was 21 to 40 years [Table/Fig-2]. The second most commonly observed dermatoses were inflammatory dermatoses, which consisted of five different types. Lichen planus was the most common, with 10 (30.3%) cases, followed by lichen sclerosis with 8 (24.24%) cases. The most common age group affected was

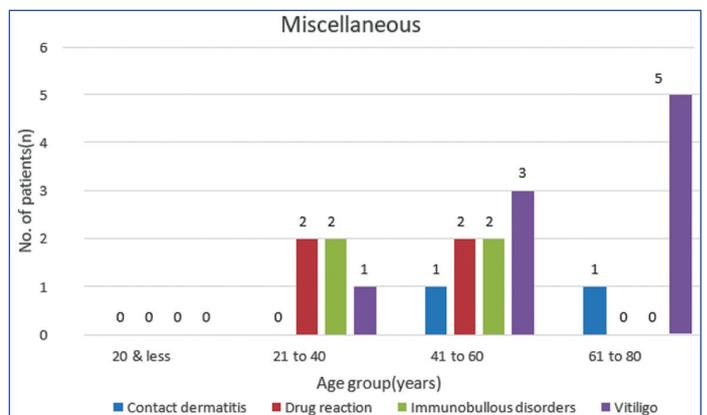


[Table/Fig-2]: Distribution of infective dermatoses across age category.

41 to 60 years [Table/Fig-3]. Various dermatoses that fell under the miscellaneous group included vitiligo with 9 (47.37%) cases, immune bullous disorders with 4 (21.05%) cases, drug reactions with 4 (21.05%) cases, and contact dermatitis with 2 (10.53%) cases. The most common age group affected was 41 to 60 years [Table/Fig-4].

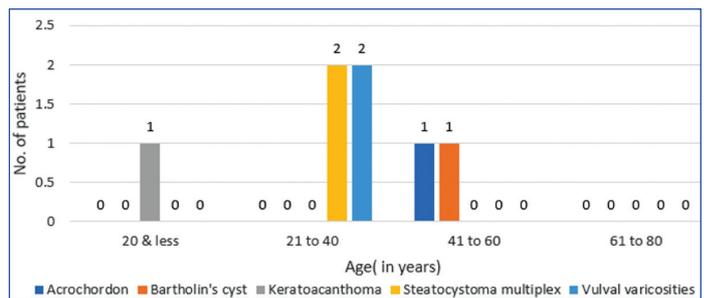


[Table/Fig-3]: Distribution of inflammatory dermatoses across age category.



[Table/Fig-4]: Distribution of miscellaneous dermatoses across age category.

Benign and physiological conditions constituted 7 (5.83%) of the dermatoses. There were five different conditions: acrochordon 1 (14.29%), keratoacanthoma 1 (14.29%), bartholin's cyst 1 (14.29%), vulval varicosities 2 (28.57%), and steatocystoma multiplex 2 (28.57%) [Table/Fig-5].



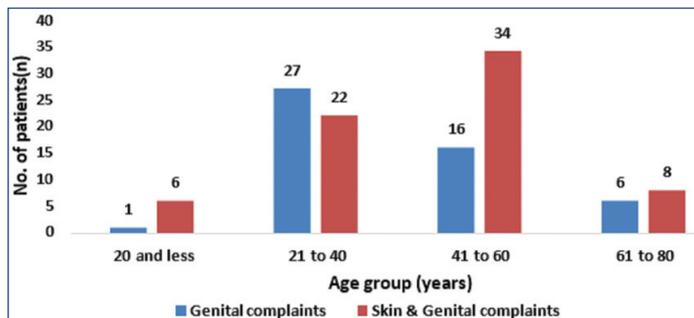
[Table/Fig-5]: Distribution of benign and physiological conditions across age category.

There was 1 (0.83%) case of squamous cell carcinoma, a malignant condition seen in an elderly female who presented with a rapidly progressing painful nodular lesion over the clitoris. The most common presenting complaints in the present study were itching with a burning sensation in 21 (17.5%) cases and itching with discharge in 17 (14.2%) cases, followed by itching alone in 11 (9.1%) cases. There were also 8 (6.7%) cases of pain and 5 (4.2%) cases of discharge alone, while 58 (48.3%) of the patients remained asymptomatic, as seen in [Table/Fig-6]. Exclusive genital complaints were seen in 50 (41.67%) of the patients, whereas 70 (58.33%) of the patients presented with both genital and extragenital complaints [Table/Fig-7]. Among these 70 (58.33%) patients, 51 (72.9%) had the same complaints over the genitalia and extragenital sites, while

the remaining 19 (27.1%) had different complaints over extragenital sites than those of the genitalia.

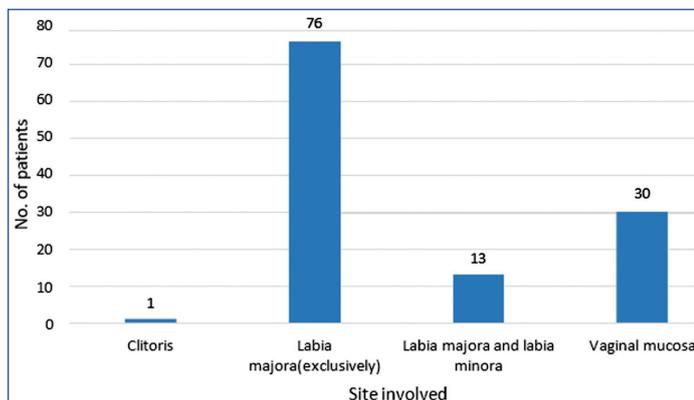
Presenting complaints	n (%)
Burning plus itching	21 (17.5%)
Itching plus discharge	17 (14.2%)
Itching	11 (9.1%)
Pain	8 (6.7%)
Discharge	5 (4.2%)
Asymptomatic	58 (48.3%)

[Table/Fig-6]: Presenting complaints.



[Table/Fig-7]: Distribution of presenting complaints across age category.

The most common site involved in the genitalia was the labia majora in 76 (63.33%) cases, followed by vaginal mucosa in 30 (25%) cases, labia majora, as well as labia minora in 13 (10.8%) cases, and clitoris in 1 (0.83%) case [Table/Fig-8].



[Table/Fig-8]: Site of involvement.

Systemic diseases were seen in 62 (51.6%) of the patients, with diabetes being the most common at 39 (62.9%), followed by hypertension at 17 (27.4%), hypothyroidism at 4 (6.4%), and polycystic ovarian syndrome at 2 (3.2%) [Table/Fig-9].

Associated systemic disease	n
Diabetes mellitus	39
Hypertension	17
Hypothyroidism	4
PCOS	2

[Table/Fig-9]: Associated systemic conditions.

Diabetes mellitus (62.9%) was the most common associated systemic disease in our study, frequently observed among patients with vulvovaginal candidiasis. [Table/Fig-10] shows clinical images of the various dermatoses observed in the study.

DISCUSSION

Age distribution: The present study included a total of 120 patients with non venereal genital dermatoses. The patients' ages ranged from 18 to 78 years, with a mean age of 43.08 years. The majority



[Table/Fig-10]: Clinical images of some of the dermatoses observed in the study: (a) Erythematous swelling over right labia majora impinging on the labia minora-Bartholin's cyst; (b) Verrucous growth over clitoris- squamous cell carcinoma; (c) Multiple yellowish to pigmented papulonodules on the labia majora-steatocystoma multiplex; (d) Multiple bluish to pigmented papules arranged in a cluster over the labia majora-vulvar varicosities; (e) Verrucous growth with a central crateriform appearance over the labia majora-keratoacanthoma; (f) Pigmented, lichenified plaque with depigmentation over the labia majora-lichen simplex chronicus; (g) Multiple violaceous papules and plaques over the labia majora-Lichen planus; (h) Depigmented patches over labia majora and minora-vitiligo vulgaris; and (i) Well-defined pigmented plaque over the labia majora extending to the groin, thighs and pubis-dermatophytosis.

of patients belonged to the age group of 41 to 60 years (41.67%), followed by the age group of 21 to 40 years (40.83%). Studies conducted by Puri N et al., and Prasad AM et al., also showed the most commonly affected age group to be 21-40 years, with mean ages of 32 years and 38.82 years, respectively [1,5]. Similarly, Sivayadevi P and Anandan H, found that patients' ages ranged from 18 to 55 years, with the majority falling into the age group of 26 to 40 years [6]. Singh G et al., reported a mean age of 34.9 years, with most patients belonging to the age group of 36 to 40 years [7]. Singh N et al., observed that the majority of their patients were in the age group of 41-60 years (41.6%), followed by the age group of 31-40 years (17.5%) [8].

Marital status and occupation: In the present study, the majority of patients 110 (91.67%) married and most of them were housewives 91 (75.83%), followed by manual laborers 10 (8.33%). Gurumayum M et al., et al., also found that the majority of their patients were homemakers [9], while Singh N et al., reported that most patients were manual laborers [8].

Types of non venereal dermatoses: Present study showed 21 different types of non venereal genital dermatoses. The most common type was infectious dermatoses 60 (50%), followed by inflammatory dermatoses 33 (27.5%), miscellaneous conditions 19 (15.83%), benign and physiological conditions 7 (5.83%), and malignancy 1 (0.83%). Sivayadevi P, Anandan H, reported 23 types of non venereal dermatoses, with infections and infestations being the most common, accounting for 39% of cases. Vulvovaginal candidiasis was seen in 16% of the women and was the most common infective dermatosis [6]. Prasad AM et al., identified 16 different types of dermatoses, with inflammatory dermatoses being the most common [5]. Shinde G and Popere S, Singh N et al., found 19 types of dermatoses, with inflammatory dermatoses being the most common, followed by infective dermatoses [3,8].

Infective dermatoses: In the present study, 21 women (35% of the cases of infectious dermatoses) were diagnosed with vulvovaginal candidiasis, followed by dermatophytosis with 18 cases (30%). Almost all patients with dermatophytosis had lesions on both extragenital sites (tinea corporis) and genital lesions (tinea cruris). These findings were similar to a study by Singh N et al., where candidiasis (9.1%) was the most common infective dermatosis, followed by dermatophytosis (5%) [8]. Puri N and Puri A, showed 15% of cases with candidiasis and 10% with dermatophytosis [1]. Prasad AM et al., found that candidiasis (46.4%) was the most common dermatosis, followed by folliculitis (28.5%) [5]. In a study by Shinde G and Popere S, dermatophytosis (30%) was the most common, followed by candidiasis (12.5%) [7]. Shinde G and Popere S, showed that dermatophytosis was the most common infective condition, followed by scabies (4%) and candidiasis (3%) [3].

Inflammatory dermatoses: The second most commonly observed dermatosis was inflammatory dermatoses, which encompassed five different dermatoses. In contrast to the present study, inflammatory dermatoses were the most common dermatoses in studies conducted by Shinde G and Popere S, Prasad AM et al., and Singh N et al., [3,5,8]. Most of the patients with lichen planus (30.3%) had both genital and extragenital lesions, except for one patient who presented with only genital lesions. Singh G et al., observed that lichen planus (2.85%) was the second most common inflammatory dermatosis [7]. Lichen sclerosus was the second most common inflammatory dermatosis in the present study, with 8 (24.24%) cases. However, in studies conducted by Puri N and Puri A, Singh G et al., and Singh N et al., lichen sclerosus was reported as the most common inflammatory dermatosis, constituting 15%, 10%, and 21.7% of cases, respectively [1,7,8]. Lichen simplex chronicus accounted for 5 (15.15%) cases in the present study and was the third most common dermatosis. In studies conducted by Puri N and Puri A, Singh N et al., it was the second most common dermatosis [1,8]. A few patients presented with extensive psoriasis (9.09%), involving the genitalia on examination. Shinde G and Popere S, reported that psoriasis (17%) was the most common inflammatory dermatosis [3]. Singh G et al., observed 2.85% of cases with psoriasis and reported it as the third most common dermatosis in their study [7].

Miscellaneous: Among 9 (47.37%) patients with vitiligo, the majority presented with vitiligo vulgaris, while 2 patients had only genital vitiligo [5]. Prasad AM et al., observed vitiligo (15.4%) as the most common dermatosis [5]. Puri N and Puri A, reported vitiligo in 15% of cases, making it one of the most common dermatoses [1]. A study conducted by Singh N et al., showed that 15.8% of the participants had vitiligo [8]. Among the 4 (21.05%) patients who presented with immunobullous disorders, three had pemphigus vulgaris, and one had bullous pemphigoid. Shinde G and Popere S, observed 7% of cases with pemphigus vulgaris [3]. Drug reactions were observed in 4 (21.05%) patients, with two cases of erythema multiforme, one case of fixed drug eruption, and one case of drug reaction with eosinophilia and systemic symptoms.

Benign and physiological conditions: The present study recorded 7 (5.83%) cases of benign and physiological dermatoses. Singh G et al., in their study, observed 5.7% cases of benign tumours and cysts [7]. Vulval varicosities (28.57%), a physiological condition, were seen in two pregnant females during their third trimester. They presented with asymptomatic dilated veins over the labia, which appeared as swelling. A total of 2 (28.57%) patients with

steatocystoma multiplex presented with multiple cystic swellings over the genital region. Acrochordon constituted 1 (14.29%) of the benign dermatoses and was seen over the labia majora. The patient also had similar lesions on the nape of the neck and was a known case of diabetes. In a study conducted by Singh N et al., it was the second most common benign condition, with the first being an epidermal inclusion cyst [8].

Malignancy: Squamous cell carcinoma, a malignant condition, was seen in an elderly female 1 (0.83%), who presented with a rapidly progressing painful nodular lesion over the clitoris. In a study conducted by Singh N et al., 5% of the patients presented with invasive squamous cell carcinoma [8].

Site of involvement over genitalia: The most common site involved in the genitalia was the labia majora 76 (63.33%), followed by the vaginal mucosa 30 (25%). Similar findings were seen in studies conducted by Puri N and Puri A, and Vinay N et al., [1,10]. In a study conducted by Singh N et al., it was found that 91.7% of the participants had lesions over the labia majora, followed by the labia minora (48.3%) [8].

Association with systemic disease: Diabetes mellitus 39 (62.9%) was the most common associated systemic disease in the present study, where most of the patients were known cases of diabetes, and a few were newly diagnosed. It was most commonly seen among patients with vulvovaginal candidiasis. Puri N and Puri A, showed similar findings in their study, where diabetes was most commonly associated with vulvovaginal candidiasis [1]. In a study conducted by Sivayadevi P, Anandan H, all patients with vulvovaginal candidiasis had type 2 diabetes mellitus [6].

Limitation(s)

The sample size was relatively low, especially since large-scale studies on non venereal dermatoses of the female genitalia are lacking. Additionally, a dermatology life-quality index could have been conducted to assess the impact of these dermatoses on the quality of life.

CONCLUSION(S)

Genital diseases may be associated with severe psychological trauma and fear in the minds of patients. Non venereal dermatoses of the female external genitalia include a spectrum of diseases with varied aetiology. Dermatologists, should be aware of the different presentations of dermatoses of the female genitalia since not all genital dermatoses are sexually transmitted. It is important to diagnose and differentiate these non venereal dermatoses to relieve patients from the stigma of sexually transmitted diseases.

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PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Dermatology, Venereology, and Leprosy (DVL), Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India.
2. Associate Professor, Department of Dermatology, Venereology, and Leprosy (DVL), Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India.
3. Assistant Professor, Department of Dermatology, Venereology, and Leprosy (DVL), Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India.
4. Professor, Department of Dermatology, Venereology, and Leprosy (DVL), Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India.
5. Professor, Department of Dermatology, Venereology, and Leprosy (DVL), Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India.
6. Junior Resident, Department of Dermatology, Venereology, and Leprosy (DVL), Sree Balaji Medical College and Hospital, Chennai, Tamil Nadu, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

G Sukanya,
7, CLC Works Road, Chrompet, Chennai-600044, Tamil Nadu, India.
E-mail: drsukanyamathupal@gmail.com

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