ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 04 | April - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CLINICOEPIDEMIOLOGICAL STUDY ON PAEDERUS DERMATITIS IN A TERTIARY CARE CENTRE, CHENNAI

Dermatology

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ABSTRACT

Paederus dermatitis is a form of irritant contact dermatitis due to contact with certain insects of the genus Paederus presenting with mostly erythematous linear lesions of sudden onset on exposed parts of the body. **Aim:** To study the clinico epidemiological features in patients with Paederus dermatitis. **Materials & Methods:** A retrospective analysis of clinicoepidemiological features of patients affected with Paederus dermatitis who had attended the Dermatology OPD, in a tertiary care hospital between January 2018 to December 2019 was done. All the required data had been collected from the OPD records and details were tabulated and analysed. **Result:** A total of 56 patients had been affected with Paederus dermatitis during the study period, of which 32 were males and 24 were females. 41out of 56 (73.21%) of patients presented between the months of August and December. Most common age group affected were between 11 to 30 yrs, with front and back of neck being the most common affected sites. In 42 out of the 56 patients the lesions resolved with post inflammatory hyperpigmentation. **Conclusion:** Paederus dermatitis is a common condition that is often misdiagnosed and hence awareness is required for the clinicians and the general public to prevent it.

KEYWORDS

Paederus, Vesicant, Irritant dermatitis

INTRODUCTION

Paederus dermatitis is a form of irritant contact dermatitis due to contact with certain insects of the genus Paederus. Paederus insects belong to the insect order Coleoptera (beetles) and the family Staphylinidae (rove beetles). It is also known as rove beetlerash, dermatitis linearis spider lick,night burn,and Nairobi fly rash.A blistering rash occurs 24–48 hours after accidental brushing or crushing the beetle against the skin, due to release of a potent vesicant named Paederin and can take several weeks to disappear [1,2]. The characteristic appearance of erythematous linear lesions and post inflammatory hyperpigmentation, predilection for exposed areas along with history of sleeping in the nights with windows open or travelling in roads with lot of bushes especially in the post rainy season are suggestive of Paederus dermatitis. The preventive measures include that if a beetle lands on the skin it should be blown off or encouraged to walk onto a piece of paper and then removed and that if it is crushed, the irritant vesicant is removed by washing the area affected with soap and water, followed by treatment with topical steroids and antibiotics as required. We conducted this study on Paederus dermatitis with the aim of understanding the clinicoepidemiological features of the disease among patients attending the Dermatology OPD of our hospital, which is a tertiary care centre situated in an urban area.

MATERIALS AND METHODS

A retrospective study was conducted among patients who were diagnosed with paederus dermatitis who had attended the Dermatology OPD in a tertiary care centre between January 2018 and December 2019. All the necessary information regarding the study patients had been collected from the OPD records. The details were tabulated and analysed.

RESULTS

A total of 56 patients had been diagnosed with Paederus dermatitis during the study period , out of which 32 were males and 24 were females (Table 1).

Table 1 - Number of patients affected with paederus dermatitis during the study period

Total Number of Patients	Male	Female
56	32 (57.1%)	24 (42.9%)

Majority of the patients, 39 out of 56 patients were in the age group of 11 – 20 years and 21 – 30 years (Table 2). The patients were mainly students staying in hostel sleeping with windows open and persons residing in suburban area and travelling in two wheeler to their work place on roads where plenty of trees, bushes and garbage were present.

Table 2 – Age distribution of Paederus dermatitis among the study population

Age Group in years	Male	Female	Total
0 – 10	5 (8.93%)	1 (1.78%)	6 (10.71%)
11 - 20	12 (21.43 %)	9 (16.07%)	21 (37.50%)
21 - 30	10 (17.86%)	8 (14.29%)	18 (32.15%)
31 - 40	4 (7.14%)	3 (5.36%)	7 (12.50%)
41 - 50	1(1.78%)	1 (1.78%)	2 (3.57%)
51 - 60	-	1 (1.78%)	1 (1.78%)
61 - 70	-	1 (1.78%)	1 (1.78%)

41 out of the 56 study patients had presented to the OPD between August and December months in both the years (Table 3).

Table 3 – Monthwise distribution of the disease in 2018 and 2019

Year	2018	2019	Total
January	1 (1.78%)	2 (3.57%)	3 (5.36%)
February	0	1 (1.78%)	1 (1.78%)
March	0	2 (3.57%)	2 (3.57%)
April	0	0	0 (0 %)
May	2 (3.57%)	0	2 (3.57%)
June	2(3.57%)	1 (1.78%)	3 (5.36%)
July	3 (5.36%)	0	3 (5.36%)
August	7 (12.5%)	1(1.78%)	8 (14.29%)
September	6 (10.71%)	5 (8.93%)	11 (19.64%)
October	3 (5.36%)	8 (14.29%)	11 (19.64%)

November	3 (5.36%)	2 (3.56%)	5 (8.93%)
December	1 (1.78%)	5 (8.93%)	6 (10.71%)

Most of the patients attended the outpatient department with burning sensation and itching (33 out of 56) followed by burning sensation only (16 out of 56), followed by itching only (7 out of 56) . 25 out of the 56 study patients had presented with vesicles bulla or pustules (Table 4).

Table 4 – Symptoms given by the patients with Paederus dermatitis

Symptoms	Male	Female	Total
Burning sensation only	7 (12.50%)	9 (16.07%)	16 (28.57%)
Itching only	4 (7.14%)	3 (5.36%)	7 (12.5%)
Burning sensation & Itching	21 (37.5%)	12 (21.43%)	33(58.93%)
Fluid filled lesions & pustules	16 (28.57%)	9 (16.07%)	25 (44.63%)

The skin lesions ranged from linear erythematous plaques, erythematous linear plaques with vesicles, bulla or pustules (Table 5).

Table 5 – Clinical presentation of Paederus dermatitis in the study population

Type of Lesion	Male	Female	Total
Erythematous Linear Plaque	12 (21.43%)	13 (23.21%)	25(44.64%)
Erythematous Linear Plaque with Vesicles	16 (28.57%)	9 (16.07%)	25 (44.64%)
Bulla and pustules	4 (7.14%)	2 (3.57%)	6 (10.72%)

The skin lesions were seen mostly on the exposed sites like front and back of neck, front of chest, face and forearms (Table 6).

Table 6 – Site of Skin lesions in Paederus dermatitis among the study population

Site of Lesion	Male	Female	Total
Face	4 (7.14%)	2 (3.57%)	6 (10.71%)
Front of Neck	7 (12.50%)	9 (16.07%)	16 (28.57%)
Back of Neck	12 (21.43%)	8 (14.29%)	20 (35.72%)
Chest& Abdomen	5 (8.93%)	4 (7.14%)	9 (16.07%)
Forearms	4 (7.14%)	1 (1.78%)	5 (8.93%)

The patients were diagnosed as having Paederus dermatitis on the basis of history and clinical examination and were treated with topical antibiotic,mid potent topical steroid, moisturizer and with systemic antihistamines, analgesics and antibiotics for a period of one week and had been reviewed after one week. All the patients had recovered as follows :in 7 patients the lesions had healed completely without any residue, in 42 patients the lesions had resolved with post inflammatory hyperpigmentation, in 4 patients with post inflammatory hypopigmentation and in 3 patients who had severe oozing lesions had superficial scars which had resolved after giving antiscar treatment (Table 7).

Table 7 – Outcome of treatment among the study population

Outcome of treatment	Males	Females	Total
No residual pigmentation	3 (5.36%)	4 (7.14%)	7 (12.5%)
Post inflammatory hyperpigmentation	24 (42.86%)	18 (32.14%)	42 (75%)
Post inflammatory hypopigmentation	3 (5.36%)	1 (1.78%)	4 (7.14%)
Hyperpigmented Scar	2 (3.57%)	1 (1.78%)	3 (5.36%)

DISCUSSION

Paederus dermatitis is due to contact with certain insects of the genus Paederus. There are more than 622 Paederus species distributed worldwide except Antarctica. These insects are of the family *Staphylinidae*, in the order *Coleoptera* (beetles) and in the class *Insecta*[2,3]. The species that is commonly seen in India is Paederus melampus. The beetles have narrow bodies, ranging from 0.5–1.5 cm [4]. They have a shiny black head and thorax, with blue or black elytra (forewing) and an orange-red abdomen [1,4]. They are more prevalent in warmer climates [5].The beetle breeding period is during the rainy seasons [1,4]. The beetle is attracted to ultraviolet radiation (UVR). The haemolymph of the beetle contains a substance called Paederin which is a potent vesicant causing irritant contact reaction. The skin reaction occurs depending on the concentration of the paederin exposed and duration of exposure mainly[6,7]. The complications usually are secondary bacterial infections, post inflammatory hyper or hypo pigmentation, scar formation and rarely extensive ulcerative dermatitis The differential diagnosis are Herpes Zoster, Herpes Simplex, Phytophotodermatitis and irritant dermatitis due to other irritants. The peak season reported in South India is after rains and the cases we reported also occurred in the same period.

Figure- Showing the various clinical presentations of Paederus dermatitis (Linear erythematous plaques , vesicles, pustules and post inflammatory hyperpigmentation)

In our study, male patients, 32 (57.1%) were more compared to female patients, 24 (42.9%) which is similar to other studies on Paederus dermatitis conducted in other parts of India and worldwide. The commonest age group affected was 11 – 20 yrs (37.5%), followed by 21 – 30 yrs (32.15%) and the mean age was 23.32 years. In the studies conducted by GnanarajP et al[3]the mean age group was 23.4 years and M Assaf et al[8] , the mean age was 23.3±14.6 years, which was similar to our study.

58.93 % of patients in our study had presented with complaints of burning sensation and itching. 28 % of patients and 85 % of patients had presented with burning sensation and itching in the studies conducted by K. Lakshminarayana[9] and Anubhav Garg et al[10] respectively. Erythematous linear plaque with or without vesicles was the commonest presentation in our study population (89.28%). Front and back of neck (64.29%) was the commonest site involved in our study, whereas face was the commonest site in the study by Anubhav Garg et al (42%), Srinath.M.Kambil (48.15%)[11]and face & neck (36%) in a study by AnujTaneja et al[12]. K Lakshminarayana had an observation similar to our study where neck was the commonest site involved (60%).

73.21% patients among the study population had reported to the OPD between August and December, which is the post rainfall period and is consistent with the literature and similar observations had been made in the studies by K. Lakshminarayana et al[9] and Nasir et al [11] but with another spike in March to May and April respectively , which was not observed in our study.

Limitations

The histopathological studyof the lesion and morphological study of the insect could not be done.

CONCLUSION

Paederus dermatitis is occurring very frequently in recent periods. It can be prevented by using bed nets at night which will prevent insects from entering inside the net, to screen the windows and doors, using insect repellants, using light sources that do not emit UV, to switch off the lights when sleeping, and if any insects are seen on the body not to crush them,and wash the area in contact with the insect with soap and water immediately. It can take a few weeks for paederus dermatitis to resolve, and post inflammatory pigmentary changes may persist for several months [1,2], so proper counselling has to be given to the affected persons. Immediate treatment is very essential to prevent complications. Awareness regarding Paederus dermatitis is essential since it is commonly misdiagnosed.

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