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Original Research Article

Spectrum of periorbital dermatoses in a tertiary care centre in Puducherry

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ABSTRACT

Background: Periorbital dermatoses are dermatological manifestations of the area around the eyes. They are the most commonly encountered dermatoses in routine dermatological practice posing both diagnostic and therapeutic challenge for dermatologists due to the similarity of symptoms and close proximity to the eyeball. In the present study, our aim is to study the spectrum of periorbital dermatoses in a tertiary care centre in Puducherry.
Methods: This was a hospital based study in which all the patients attending dermatology OPD irrespective of their age and sex were screened for periorbital dermatoses over a period of 1 year from February 2016 to January 2017. Screening resulted in 300 consenting patients with periorbital lesions. They were subjected to detailed history followed by clinical examination and relevant laboratory investigations. Clinical photographs of all patients were taken.
Results: The most common dermatological conditions observed in periorbital region in our study were tumours (benign and malignant) (26.3%) followed by pigmentation (19.3%), eczema (17.3%), infections (13%), nevoid condition (10%), connective tissue disorders (2.6%), miscellaneous conditions (8.2%). Certain periorbital dermatoses were significantly more in females compared to males such as skin tags, periorbital hyperpigmentation, connective tissue diseases.
Conclusions: The present study highlights the pattern of specific dermatoses in our hospital.

Keywords: Periorbital dermatoses, Tumours, Periorbital pigmentation

INTRODUCTION

Periorbital dermatoses are dermatological manifestations of the area around the eyes. They are common disorders posing both diagnostic and therapeutic challenge for dermatologists.[1] The similarity of symptoms in this area causes diagnostic dilemma and the anatomic features like thin skin of eyelids and proximity to the eye ball results in therapeutic challenge.[1] They are a significant cosmetic concern for patients. Although it does not cause morbidity, it can influence the quality of life in some patients. Some periorbital lesions are heralding features of underlying systemic disease, so it helps in early detection and treatment of underlying systemic condition. As there is lack of adequate data about the frequency and distribution of periorbital dermatoses in India, this study was undertaken in our institute with the aim of characterising the spectrum of periorbital dermatoses and to assess the association of systemic diseases with periorbital dermatoses.

METHODS

This was a hospital based descriptive study. All patients of both genders and all ages who attended the dermatology OPD of Aarupadai Veedu Medical College for dermatological conditions were screened for lesions in the periorbital area over a period of 1 year from February 2016 to January 2017, after clearance obtained from institute ethical committee vide notification number F9-7/2002/U-3 dated 20/01/2016. A total of 300 consenting patients with periorbital dermatoses were included in our study after screening. Non consenting patients with periorbital dermatoses were excluded from the study. A detailed history was taken followed by local cutaneous, and systemic examination. Diagnosis was made and necessary, relevant investigations were done.

Data processing and statistical analysis done with the help of our statistician using spss 17.0.1 (statistical package software for windows Chicago. spss Inc). Fishers exact test was used to assess the relationship between gender and periorbital dermatoses and to look for the association between skin tags and diabetes. ANOVA was used to find the relation between age and occurrence of periorbital dermatoses.

RESULTS

A total of 300 patients with periorbital dermatoses were included in the study. Among them, 176 were females and 124 were males with a male to female ratio of. The most common age group affected by periorbital dermatoses in our study was 25 to 45 years (158 cases, 19.33%).

Most of the patients with periorbital dermatoses were asymptomatic and the most common symptom reported was itching seen in 128 patients (42.66%).

Table 1: Dermatoses encountered in the periorbital area in our study.

Periorbital dermatoses	Number of patients	Percentage of patients (%)
Tumours (benign and malignant) (27.6%)	79	26.3
Pigmentation (21.2%)	58	19.3
Eczema (18.4%)	52	17.3
Infections (12.3%)	39	13
Nevoid condition (10.2%)	30	10
Connective tissue disorders	8	2.6
Alopecia	6	2
Vesiculobullous disorders	4	1.3
Psoriasis	2	0.6
Miscellaneous	26	8.2

*Total doesn't correspond to 300 as multiple periorbital dermatoses coexisted in some patients.

Periorbital tumours

The most common periorbital tumour encountered in our study was seborrhoeic keratosis observed in 31 patients followed closely by skin tags 28 patients and syrigoma in 16 patients. The distribution of periorbital tumours in our study is provided in Table 2. Benign tumors were more in number than the malignant tumors (Figure 1).

Table 2: Periorbital tumors in the study population.

Periorbital tumours	Number of patients	Percentage of patients (%)
Seborrheic keratosis	31	10.3
Skin tags	28	9.3
Syringoma	16	5.3
Angiofibroma	1	0.3
Basal cell carcinoma	2	0.6
Neurofibroma	1	0.3
Total	79	26.3

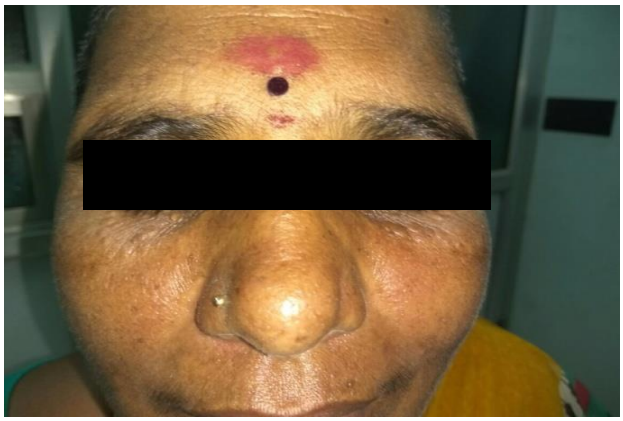

Figure 1: Periorbital tumour-syringoma.

Seborrhoeic keratosis

SK was the commonest periorbital tumor seen in our study. The mean age of patients was 54.2±27.2 years. It was more common in females. The commonest type of SK was dermatosis papulosa nigra (DPN) followed by classical SK. Most of the cases were asymptomatic and few cases had associated pruritus.

Associated dermatoses were skin tags (16) and Acanthosis nigricans (10) patients each. Systemic associations were diabetes (13) and obesity (10). SK in the periorbital region were more common in diabetics when compared to non-diabetics and this difference was statistically significant (p value by Fisher's exact test <0.0001).

Skin tags

Periorbital skin tags were seen in 28 patients in the study population. The mean age of the patients with periorbital skin tags was 50.2±18.4 years. Skin tags in the periorbital

region were more common in females compared to males. Periorbital skin tags coexisted with periorbital SK in 16 patients and with Acanthosis nigricans in 10 patients. 12 patients were diabetics and 13 patients were obese. Skin tags in the periorbital region were more common in diabetics when compared to non-diabetics and this difference was statistically significant (p value by Fisher's exact test =0.005).

Both SK and skin tags were common in age groups (40-60 years).

Syringoma

Syringoma was the second most common tumor in our study observed in 16 cases. The mean age of patients with syringoma was 32.4±16.2 years. It was more common in females (Figure 1).

Periorbital pigmentation

Periorbital pigmentation was the second common type of dermatosis encountered in our study observed in 58 patients. Hyperpigmentation in the periorbital region was more common (45 cases) compared to hypopigmentation in the periorbital region (13 cases). The different types of periorbital pigmentations observed in our study are shown in (Table 3) (Figure 2).

Table 3: Periorbital pigmentation in the study population.

Peri orbital pigmentation	Number of patients	Percentage of cases (%)
Periocular melanoses	34	11.3
Melasma	11	3.6
Vitiligo	9	3
Pityriasis alba	1	0.3
Postinflammatory hypopigmentation	3	1
Total	58	19.3

Figure 2: Periorbital pigmentation- periorbital melanoses.

Periorbital hyperpigmentation

Out of the 45 patients who presented with hyperpigmentation in the periorbital area, majority (34 cases) were having periocular melanosis. The rest eleven had melasma in the periorbital region. The mean age of the patients with periocular melanoses was 32.1±15.6 years. Females were more commonly affected than males. Periorbital melanosis (POM) had a female preponderance when compared to the other periorbital dermatoses and this difference was statistically significant (P value by Fisher's exact test =0.004) (Figure 2).

Melasma

Melasma was exclusively seen in 11 females of all periorbital pigmentation. Mean age of the patients with melasma was 33.6±17.2 years. Most common type of melasma seen was centrofacial with pigmentation over cheeks, nose and infraorbital area. Seven patients had epidermal type, three had mixed type and one patient had dermal melasma.

Periorbital hypopigmentation

Hypopigmentation in the periorbital region consisted of only 13 cases. Nine cases had vitiligo. The other causes of periorbital hypopigmentation included Tinea versicolor, Hansen's disease, post-inflammatory hypo-pigmentation and pityriasis alba (Figure 3).

Figure 3:Periorbital pigmentation-vitiligo.

Periorbital dermatitis

Dermatitis in the periorbital area was the third most common cause of periorbital dermatoses observed in 52 patients. Exogenous eczema (37 cases) was more common causes compared to endogenous eczema (15 cases) in the periorbital region. Airborne contact dermatitis (ABCD) (19 cases) was the most common cause of exogenous eczema. The commonly implicated allergens by history were parthenium and cement. Patch test was carried out in seven cases of which only two patients showed positivity to parthenolide and only one

was positive to potassium dichromate. The various other causes of periorbital dermatitis are tabulated in (Table 4).

Table 4: Periorbital dermatitis in the study population.

Periorbital dermatitis	Number of patients	Percentage of patients (%)
Exogenous eczema	37	12.3
Airborne contact dermatitis	19	6.3
Allergic contact dermatitis	9	3
irritant contact dermatitis	7	2.3
pigmented contact dermatitis	2	0.6
Endogenous eczema	15	5
Atopic dermatitis	11	3.6
Seborrhoeic dermatitis	4	1.3
Total	52	17.3

In our study, periorbital dermatitis was common in males when compared to the other periorbital dermatoses and this difference was statistically significant (p value by Fisher's exact test= 0.04).

The various allergens implicated were ophthalmic preparations- timolol eye drops, gentamycin sulfate ophthalmic ointment, ciprofloxacin eye ointment, nail polish and eye makeup. Irritant contact dermatitis comprised of seven cases of periorbital dermatitis and all seven were female patients. The various irritants implicated were hair dye, mascara, surma, phenylephrine eye drops and atropine eye drops. The most common endogenous eczema noted in our study was atopic dermatitis (11 cases) followed by seborrhoeic dermatitis (4 cases).

Table 5: Periorbital infections in the study population.

Periorbital infections	Number of patients	Percentage of patients (%)
Viral infections	16	5.3
Periorbital warts	6	2
Herpes zoster opthalmicus	7	2.3
Herpes simplex	1	0.3
Molluscum contagiosum	2	0.6
Bacterial infections	12	4
Pyoderma	11	3.6
Hansens disease	1	0.3
Fungal infections	11	3.6
Tinea versicolor	5	1.6
Dermatophytic infections	6	2
Total	39	13

Periorbital infections

The various infections causing dermatoses in the periorbital area were viral infections (16 cases), bacterial infections (12 cases) followed by fungal infections (11 cases) (Table 5).

Table 6: Miscellaneous disorders affecting periorbital region in the study population.

Periorbital miscellaneous disorders	Number of patients	Percentage of patients (%)
Acne	7	2.3
Colloid milium	3	1
Senile comedone	3	1
Xanthelasma	2	0.6
Periorbital edema	2	0.6
Darier's disease	2	0.6
Transient neonatal pustulosis	2	0.6
Cutaneous horn	1	0.3
Dowling degos disease	1	0.3
Tuberous xanthoma	1	0.3
Xeroderma pigmentosa	1	0.3
Dermatitis artefacta	1	0.3
Total	26	8.2

Table 7: Relationship between age and gender and periorbital tumors.

Dermatoses	Age	P value*
Seborrheic keratosis	54.2±27.2	<0.0001
Skin tags	50.2±18.4	
Syringoma	32.4±16.2	

*by ANOVA

Table 8: Relationship between age and gender and periorbital dermatitis.

Periorbital dermatitis	Age (years)	P value*
Airborne contact dermatitis	51.6±13.4	0.004
Allergic contact dermatitis	25.7±16.4	
Atopic dermatitis	27.8±17.6	

*by ANOVA

The commonest viral infection in the periorbital area was Herpes zoster seen in 7 patients, followed by wart in 6 patients. The most common type of wart in the periorbital region was filiform wart followed by verruca vulgaris. Out of the eleven patients with pyoderma, 7 patients had impetigo and 4 had furuncle. One patient had borderline tuberculoid Hansen's disease (Figure 4).

The various miscellaneous periorbital dermatoses seen in our study are as shown in (Table 6) (Figure 5).

Figure 4: Periorbital infection-pyoderma.

Figure 5:Periorbital miscellaneous dermatoses-xanthelasma palpebrum.

Periorbital nevoid conditions

A total of 30 nevoid conditions were encountered in the study. Different nevoid conditions noted in our study were melanocytic nevi, nevus of Ota, port wine stain as part of Sturge Weber syndrome, café-au-lait macule (Figure 6).

Figure 6: Periorbital nevoid condition-nevus of ota.

DISCUSSION

Periorbital dermatoses are very common disorders in all age groups irrespective of sex. The periorbital area owing to its easy visibility makes the condition psychologically distressing to the patient. There are various ways to classify them of which the most reliable one is according to the nature and morphology.[2]

The common periorbital dermatoses encountered in our study in decreasing order of frequency were tumors, pigmentation, eczema, infections, nevoid conditions, connective tissue disorders and various other miscellaneous conditions. This is in accordance with the study conducted in JIPMER by Besra et al.[2] Suprisingly there were no other similar studies regarding periorbital dermatoses.

The tumors were the most common dermatoses noted in this present study. Benign tumors were common as compared to malignant tumors. Among the benign tumors seborrhoeic keratosis ranks first. This is in correlation with Besra et al study.[2,3] In one retrospective study the most frequent tumor noted was Intradermal nevus (44.6%).[4] Syringoma was the second common tumor noted in our study. It was common in middle age females.[5,6]

Few dermatoses are common in older age groups like seborrhoeic keratoses and airborne contact dermatitis. Certain dermatosis in this study were significantly more commonly seen in females than in males like skin tags, periorbital pigmentation and connective tissue diseases. This correlates with the study conducted by Besra et al. The association of seborrhoeic dermatoses and skin tags with acanthosis nigricans, diabetes mellitus represent proliferative skin conditions where growth factors are involved.[7]

Basal cell carcinoma was the only malignant tumour noted in our study in one patient.[8,9]

Periorbital pigmentation was the second common dermatoses encountered in our study. Periorbital melanoses also known as “Dark circle” is an ill-defined entity and is of common cosmetic concern. POM can be due to four major causes: Dermal melanin deposition, post inflammatory hyperpigmentation from atopic or contact allergic dermatitis, shadowing from lax skin and infraorbital swelling.[10,11] Because various factors cause infraorbital dark circles, it is essential to identify the cause before appropriate treatment can be initiated. In our study, the most common cause of POM was post inflammatory pigmentation secondary to atopic or ACD.

Periorbital dermatitis is often of multifactorial origin. Various endogenous and exogenous factors are often involved in the causation.[12] The common exogenous eczema noted in our study was airborne contact dermatitis followed by allergic contact dermatitis.[13] Atopic dermatitis is the most common endogenous eczema noted in this study. This correlates with study conducted by Besra et al.

Among the periorbital infections, viral infections rank first followed by bacterial and fungal infections. Periorbital warts were common among viral infections, pyoderma among bacterial infections and pityriasis versicolor among fungal infections.

Various other miscellaneous disorders affecting periorbital region were acne, xanthelasma, colloid millium etc.[14]

CONCLUSION

The pattern of periorbital dermatoses observed in this study are mostly similar to the study conducted by Besra et al. Though not a cause of severe morbidity or mortality, periorbital dermatoses is of cosmetic concern. This study analyses its behaviour in a clinical setting by describing its basic demographic data, clinical presentation and association with some common co-morbidities relevant to an Indian outpatient setting.

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