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Original Research Article

A study on spectrum of periorbital dermatoses in a tertiary centre

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ABSTRACT

Background: To study the spectrum of periorbital dermatoses in patients of both genders irrespective of age and identify any underlying etiology.
Methods: A clinico-epidemiological study of periorbital dermatoses was done in all patients with skin lesions in and around the both eyes who visited our outpatient department. Digital photographs will be taken for all the patients with periorbital dermatosis. Data obtained was compiled, tabulated, and statistically summarized using SPSS version 16.
Results: Among 110 patients, majority of patients with periorbital dermatoses, were in the age group of >50 years (40%) including 77 (70%) females and 33 (30%) males. The most common dermatoses observed in periorbital region were benign and malignant skin tumors 46 (41.8%), followed by pigmentary disorders 21 (19.1%), miscellaneous 19 (17.3%), nevoid conditions 12 (10.9%), eczema 6 (5.5%), and infections 6 (5.5%).
Conclusions: Benign skin tumors and pigmentary disorders are the most common periorbital dermatoses seen in our study. Certain periorbital dermatoses like skin tag and xanthelesma are seen associated with underlying metabolic disorders.

Keywords: Periorbital dermatoses, Periorbital melanosis, Seborrhoeic keratosis

INTRODUCTION

Aesthetic facial concerns have been the main reason for dermatological consults in the last few years. Among which there is one that is called periorbital dermatoses. Periorbital dermatoses are dermatological manifestations of area around the eye excluding the eyelid. They are common disorders posing both diagnostic and therapeutic challenge for dermatologists. The similarity of symptoms in this area cause diagnostic dilemma and to the dermatologists.[1]

Periorbital dermatoses are a significant cosmetic concer for female patients. Although it does not cause morbidity, it can influence the quality of life from the medical point of view. Some periorbital dermatoses are heralding features of underlying systemic diseases, so it helps in early diagnosis and treatment of underlying systemic conditions. Most of the literature regarding periorbital dermatoses is in the form of case reports and only few studies are there related to specific dermatoses.

The most common dermatological conditions seen in periorbital region are tumours (benign and malignant), disorders of pigmentation, eczema, infections, nevoid conditions, connective tissue disorders. Others are dermatoses papulosa nigra, xanthelasma palpebrarum, vesiculo bullous disorders.[2]

As there is lack of adequate data about the frequency and distribution of periorbital dermatoses there is a need to

study the clinical patterns of periorbital dermatoses. In this back drop the main goal of the study is to throw light on prevalence of periorbital dematoses in the patients presenting to our skin and STD outpatient department.

METHODS

A clinico-epidemiological study of periorbital dermatoses was done in all patients with skin lesions in and around the both eyes who visited our Dermatology OPD for a period of one year.

Study design

Cross sectional study.

Inclusion criteria

Inclusion criteria were 110 patients with periorbital dermatoses irrespective of age and sex attending the skin and STD outpatient department in our institute were enrolled in the study.

Exclusion criteria

Exclusion criteria were non consenting patients and patients with periorbital lesions already treated for the past 1 month were excluded from the study.

Study place and period

Salem, January 2016 - September 2017.

After getting informed written consent, patient details were recorded in the pre-designed proforma followed by examination of skin around the eyes in the adequate day light. The final diagnosis was made and biopsy was taken if doubtful. Other relevant investigations ESR, CBC, RBS, lipid profile were done. Digital photographs were taken for all the patients with periorbital dermatosis. Data thus obtained was complied, tabulated, and statistically summarized using SPSS version 1.

RESULTS

A total of 110 patients who complained of periorbital dermatoses in the periorbital region and were eligible based on the inclusion criteria were included in this cross sectional study. After analysis of the data collected, the following results and observations were made.

Among 110 patients, majority of patients with periorbital dermatoses, were in the age group of >50 years (40%), followed by 31-40 years (22.7%), 41-50 years (17.3%), 21-30 years (13.6%) and upto 7 (6.4) (Figure 1).

Among the study population, 77 (70%) were females and 33 (30%) were males with a female to male ratio of 7:3 (Figure 2).

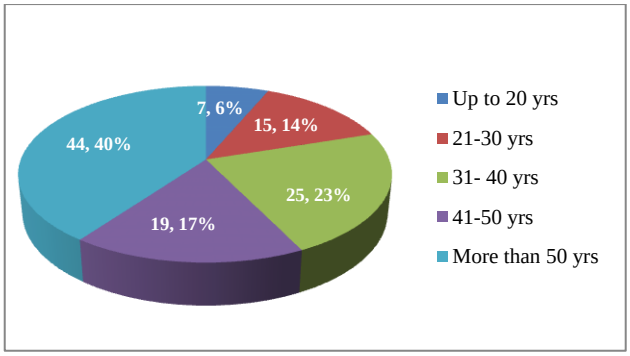

Figure 1: Age wise distribution of study population.

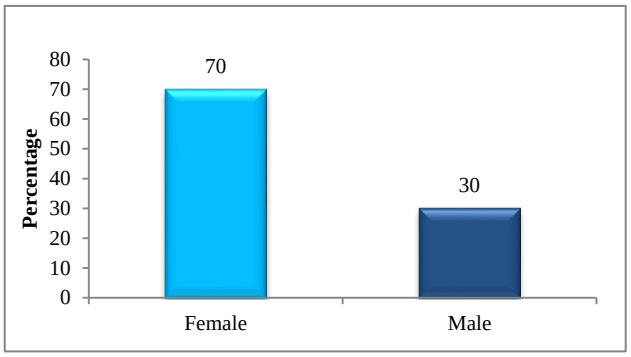

Figure 2: Gender distribution of the study population.

Classification of periorbital dermatoses

The most common dermatoses observed in periorbital region was benign and malignant skin tumors 46 (41.8%), followed by pigmentary disorders 21 (19.1%), miscellaneous 19 (17.3%), nevoid conditions 12 (10.9%), eczema 7 (5.5%), and infection 5 (5.5%)

Relationship between age and periorbital dermatoses

Pigmentary disorders, nevoid conditions, and miscellaneous were common in the age group of 30-40 years. Eczema and infections were common in the age group of 40-50 years and tumors were common in age group of 50-60 years and this difference was statistically significant using ANOVA ($p<0.001$) (Table 1).

Table 1: Relationship between age and periorbital dermatoses.

Classification	N	Mean	SD	P value
Tumors	46	51.83	10.65	
Pigmentary disorders	21	35.86	13.93	
Miscellaneous	19	36.74	16.00	<0.001**
Nevoid conditions	12	39.00	14.75	
Eczema	7	46.33	8.52	
Infections	5	41.17	20.05	
Total	110	43.89	14.82	

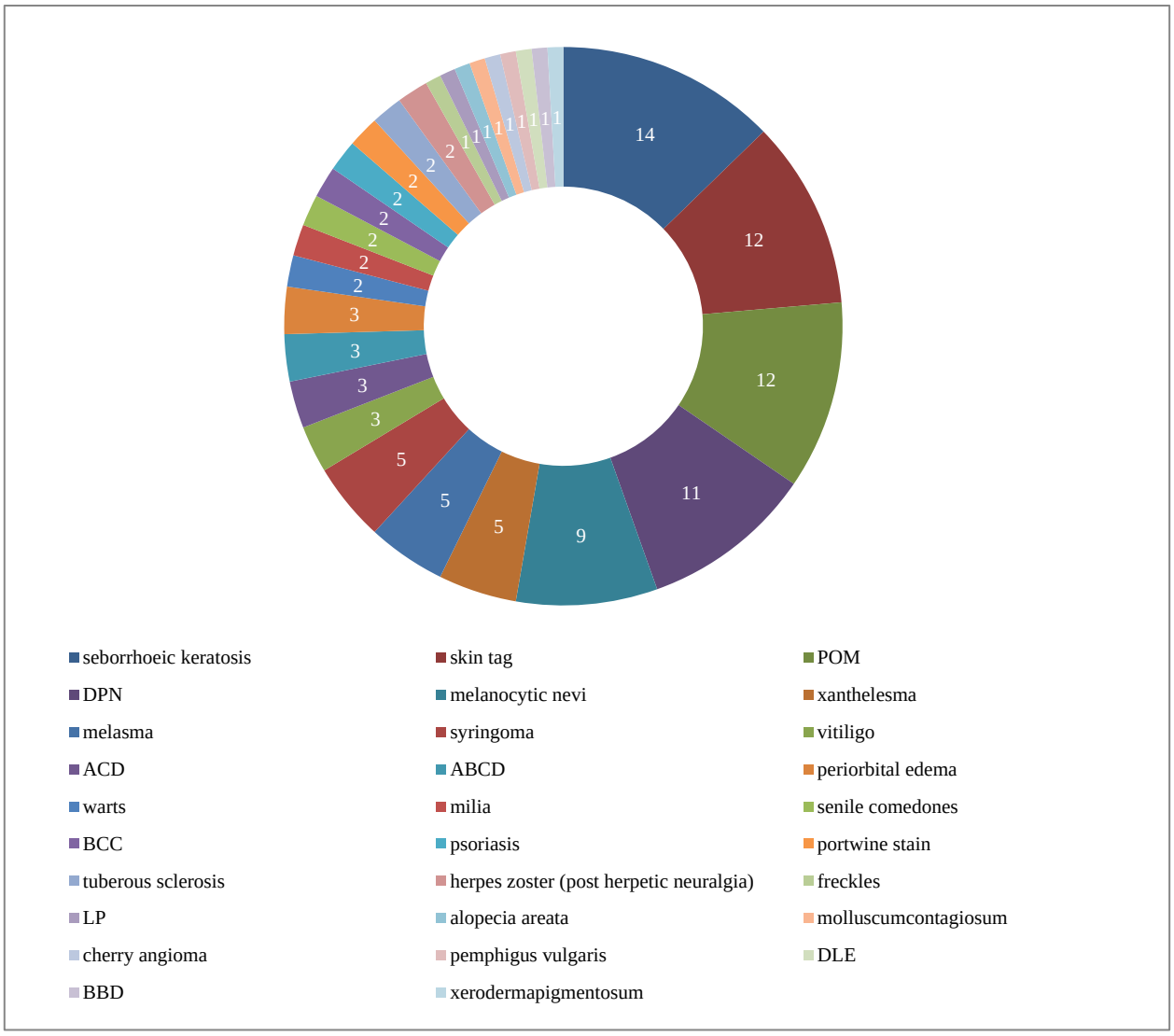

Figure 3: Spectrum of periorbital dermatoses.

Table 2: Periorbital tumors in study population.

Tumors	Frequency	Female	Male	Percentage (%)
Seborrhoeic keratoses	14	8	6	30.4
Skin tag	12	7	5	26.1
DPN	11	5	6	23.9
Syringoma	5	4	1	10.9
Senile comedones	2	2	0	4.3
BCC	2	1	1	4.3
Total	46	27	19	100

Periorbital tumors in the study population

Periorbital tumors were commonest dermatoses seen in 46 patients in our study. Among these 27 cases were females and 19 cases were males. Commonest among these is SK 14 cases, followed by skin tags 12 cases, DPN 11 cases, syringoma 5 cases and senile comedones and BCC 2 cases each (Table 2).

Periorbital pigmentary disorders

Periorbital pigmentary disorders were second common type of dermatoses in the periorbital area in our study observed in 21 patients. Among the pigmentary disorders, periorbital melanosis was the most common pigmentary disorder in our study (Figure 4).

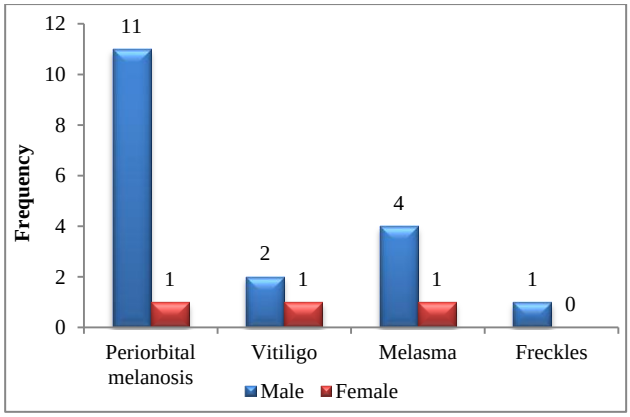

Figure 4: Gender wise distribution of periorbital pigmentary disorders.

Miscellaneous

Other miscellaneous conditions include xanthelasma (n=5, 26.3%), periorbital edema (n=3, 15.8%), psoriasis (n=2, 10.5%), tuberous sclerosis (n=2, 10.5%), colloid milia (n=2, 10.5%), lichen planus (n=1, 5.3%), pemphigus vulgaris (n=1, 5.3%), periorbital DLE (n=1, 5.3%), alopecia areata (n=1, 5.3%), xeroderma pigmentosum (n=1, 5.3%) (Figure 5).

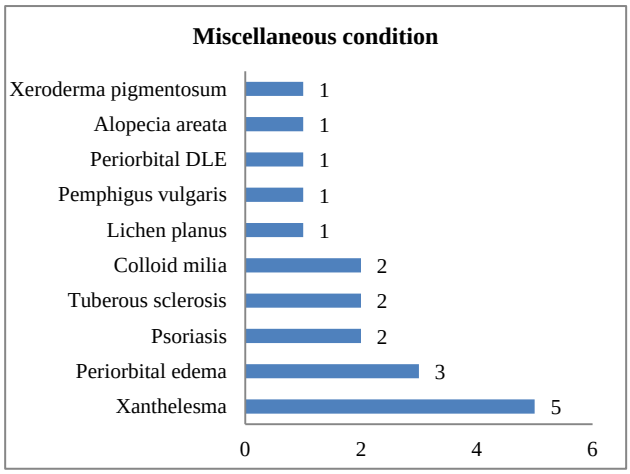

Figure 5: Distribution of miscellaneous conditions.

Periorbital nevoid conditions

Among the periorbital nevoid conditions in our study the commonest condition was melanocytic nevi (n=9, 75%), followed by portwine stain (n=2, 16.7%) and, cherry angioma (n=1, 8.3%) (Figure 6).

Eczema

In our study we noticed airborne contact dermatitis (ABCD) and allergic contact dermatitis (ACD) cases 3 each and 1 case of blister beetle dermatitis (BBD). The commonly implicated allergens were parthenium and dye. Females were most commonly affected than males. Mean age of patients with eczema in our study was 46.33 (Figure 7).

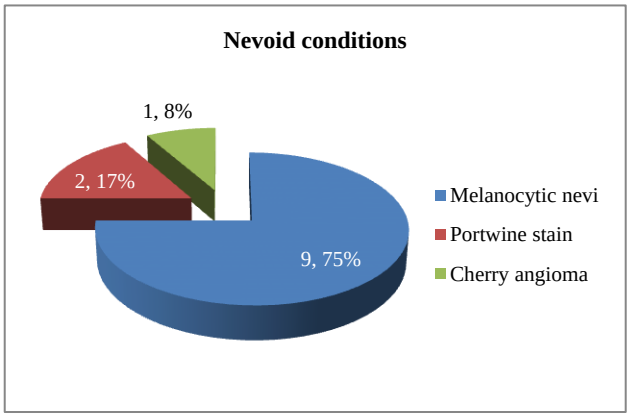

Figure 6: Nevoid conditions.

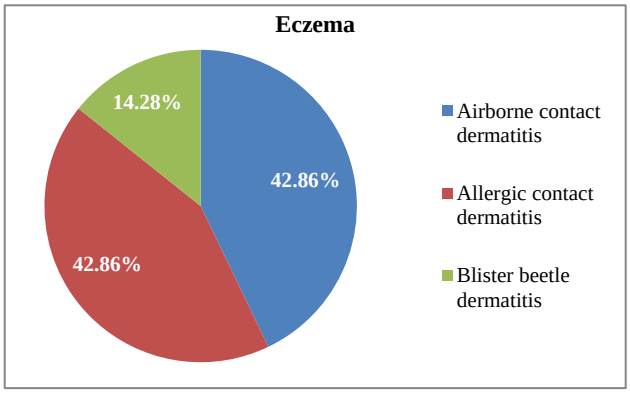

Figure 7: Distribution of eczema in periorbital area.

Infections

In our study, infections include warts (n=2, 33.3%), herpes zoster (n=2, 33.3%), molluscum contagiosum (n=1, 16.7%), and blister beetle dermatitis (n=1, 16.7%). The commonest infections in the periorbital area were warts in 2 patients and herpes zoster in 2 patients (Figure 8).

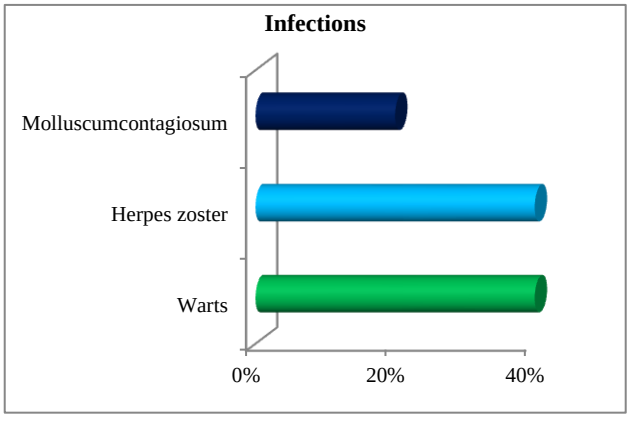

Figure 8: Distribution of periorbital infections.

DISCUSSION

Among 110 patients studied, 70% were females and 30% were males. Because of aesthetic concern, there is higher attendance of female patients when compared to male patients in our study. Most common periorbital dermatoses observed in our study were seborrheic keratosis, skin tags and periorbital melanosis and were found to be more common above the age of 50 years.

Age group

In our study, age group more than 50 years constituted maximum (40%) number of periorbital dermatoses patients.

Sex ratio

Of the110 patients, females 77 (70%) outnumbered males 33 (30%) with a female to male ratio of 7:3, which coincide with most of other studies.

Periorbital dermatoses

Among 110 patients in the study group, 46 (41.8%) patients had tumors, 21 (19.1%) patients had pigmentary disorders, 12 (10.9%) patients had nevoid conditions, 7 (6.4%) patients had eczema, 5 (4.5%) patients had infections and 19 (17.3%) patients had other miscellaneous conditions. We observed results similar to study done in Pondicherry by Telanseri.[3]

Periorbital tumors

In our study tumors were the commonest dermatoses seen in periorbital area probably, due to the fact that majority of the study population were more than 50 years of age. In a retrospective study done by Peralejo, Beltrani of eighty patients with benign eyelid and conjunctival tumors, the most frequent tumor was intradermal nevus (44.6%) followed by seborrhoeic keratoses (SK) (16.1%), and compound nevus (10.7%).[4]

However, in our study SK was the most common benign tumor encountered in the periorbital region. SK is the most common benign epidermal tumor composed of epidermal keratinocytes.[5] It is commonly seen in middle-aged individuals and can occur at any site but most frequently on face and upper trunk.[6] In our study, 14 (26.1%) patients had SK of which 8 patients were females and 6 were males with a ratio of 2:1.5, almost similar to study done by Rajesh et al.[7]

In the present study skin tags were the second common benign tumor affecting the periorbital region seen in 12 cases involving 7 females and 5 males. Majority of our patients (44) were in elderly age group with mean age of 50.92 years. Bhargava and Mathur in their study on 100 patients with acrochordons, reported neck to be the most common site involved for skin tag in 90% patients followed by axilla in 38% and eyelid in 34% patients.[3] They also observed that skin tags were most commonly associated with obesity, diabetes mellitus and pseudoacanthosis nigricans. In our study, 4 patients had associated diabetes and 2 patients had impaired glucose tolerance test (IGT). Morgolis reported that 32 of 40 patients (72.3%) with acrochordons had overt DM while IGT was observed in 6 (12.7%) patients.[9] In another study, Agarwal and Nigam detected abnormality of glucose tolerance in 48 (40.6%) of 118 patients with acrochordons. Our study also had association of acrochordons with DM and IGT and therefore all patients with acrochordon should be evaluated for the presence of diabetes mellitus as it may be a marker of impaired carbohydrate metabolism.

Syringoma is a benign adnexal tumor of intraepidermal eccrine ducts, which occur predominantly in women of third and fourth decades. The most commonly affected area is the face, particularly the eyelid and periorbital regions.[10] In our study majority of patients with syringoma were in fourth decade with mean age of 41.60, in contrast to the study by Alireza and Mohsen.[11] Females were (4) more commonly affected than males (1) in our study with ratio of 5:1, similar to study conducted by Al-Aradi et al.[12] Palpebral syringomas are a common cutaneous pathology in Down's syndrome but we did not observe any such association in the present study.

Basal cell carcinoma (BCC) is the most common malignancy affecting the periorbital area worldwide accounting for 80-90% of all eyelid cancers in western literature.[13] It affects the photo exposed areas, in about 80% of patients involving the head, and in half of them involves the cheeks and nose.[14] In the present study, BCC was the only malignant tumor seen in the periorbital location in two patients which included 1 male with pigmented type of BCC present over the left lower eyelid and 1 female with nodular type of BCC below the left lower eyelid.

Periorbital pigmentary disorders

Of the 110 cases, 21 patients had pigmentary disorders and the various conditions seen were periorbital melanosis (12 patients), melasma (5 patients), vitiligo (3 patients) and freckles (1 patient). All patients had periorbital hyperpigmentation with vitiligo being the only disorder of periorbital hypopigmentation.

Periorbital melanosis: In our study majority of patients presented with POM involving the lower eyelids due to the fact that skin over the eyelid is thinner and looser than other sites because it contains less collagen, elastin, and glycosaminoglycans.[15] In our study, 12 patients presented with POM which included 11 females and 1 male. Majority of patients were in the younger age group of 21-30 years. According to Strachan et al majority of POM were in early adulthood, i.e., 16-25 years. He supported the early age of onset in his study by stating that genetic conditions are not necessarily congenital (present at

birth). The genotype is fixed at conception, but the phenotype may not manifest until adult life.[16] In the present study, main precipitating factor was 25% patients reported lack of adequate sleep.

Melasma: Melasma is a chronic acquired hypermelanotic disorder observed in 23.8% of periorbital hyperpigmentary disorder. The prevalence varied from 5.9% to 9.1% in different regions of our country.[17] Studies have reported that melasma had higher prevalence among more pigmented phenotypes who live in intertropical areas, where there is greater exposure to ultraviolet radiation (UVR).[18] This suggest that the combination of pigmentary response (phototype) and intensity of sun exposure plays an important role in the development of the disease.[19] A clear female predominance was reported ranging from 9 or 10 to 1. An Indian study found a less significant prevalence (6:1), whereas in our study female to male ratio seen was 4:1.[20] Majority of patients in our study group were above 30 years with mean age of 40.28±2.28 years, almost similar to study done in India with average age of men (33.5 years) and women (31.5 years). For women, risk factors associated were pregnancy, sun exposure and use of combined oral contraceptives.[21]

In our study, four patients (80%) had presented with exacerbation following sun exposure. This can be explained by UV radiation directly inducing the increase of melanogenic activity, thereby causing the development of epidermal pigmentation and occurs more intensely in regions with melasma than in the adjacent skin.[22,23] A 2013 study conducted in Brazil on the epidemiological characteristics of facial melasma identified the predominance of centro-facial melasma (51.7%), followed by mixed melasma (43.4%).[24]

Vitiligo: Speeckaert et al, reported that patients with periocular involvement were younger in their retrospective cohort study of 700 patients.[25] These results are concordance to our study with mean age group of 27 years. In our study 3 cases were seen, out of which 2 were females and 1 male with ratio of 2:1.

Periorbital infections

Common infectious dermatoses involving periorbital region in our study include warts and herpes zoster (2 cases each) molluscum contagiosum (1 case). The most commonest type of wart in the periorbital region was filiform wart.

Herpes zoster opthalmicus constitutes 10-25% of all cases of HZ.[26] In our study 2 cases were seen, affecting 1 female and 1 male each. Incidence of herpes zoster increases with advancing age with patients over the age of 60 years at highest risk.[27] Here by in our study mean age group was 52.50±3.54 years and it may be one of the predisposing factors for precipitating an episode.

Periorbital eczema

A recent study at the department of Dermatology, university hospital of Erlangen (Germany) and the information network of departments of dermatology (IVDK) suggests that the incidence of periorbital eczema is 4.8% and 3.9% respectively.[28]

In our study periorbital eczema constituted 6.4% (n=7) of total study population (n=110). In the Erlangen and IVDK samples, more than 70% of the patients with periorbital eczema were over age of 40 years.[28] These results are almost similar to our study with mean age of 46.33±8.52 with female to male ratio 2:1. Females are most commonly affected than males. In our study, periorbital eczema constitutes 3 cases of ABCD, 3 cases of ACD and 1 case of BBD with ABCD and ACD contributing to 42.86% each of periorbital eczema and BBD 14.28%.

Miscellaneous

Other conditions in the periorbital area included in our study were xanthelasma palpebrarum (n=5, 26.3%), periorbital edema (n=3, 15.8%), psoriasis, tuberous sclerosis, colloid milia (n=2, 10.5%) each, lichen planus, periorbital DLE, pemphigus vulgaris, alopecia areata, xeroderma pigmentosum (n=1, 5.3%) each.

Xanthelasma palpebrarum: Variable incidence of xanthelasma is 0.56-1.5% has been reported from western countries.[29,30] The incidence in our study was 26.3%with 5 cases in miscellaneous conditions. In our study mean age group was 46.20±12.21years.This is in agreement with observations of Chhetri and Gangopadhya from India and Riebra.[31,32] Majority of patients (n=4) in our study were females. Gangopadhya and other authors have also reported higher prevalence in females.[32-36] Altered lipid levels were seen in 3(60%) patients having xanthelasma in our study. Reddy from india also reported elevated levels in 57.8% of patients.[37]

Milia: Milia are common benign keratinous cysts that occur most commonly on the face, particularly the eyelids and the cheeks. In our study milia was observed in the periorbital region in 2 males. In both the cases, milia was observed in the lower eyelid. In our study other condition reported are 3 cases of periorbital edema, out of which 2 are females, 1 male and mean age is 18.00±13.75. Psoriasis and tuberous sclerosis were reported in 2 cases involving the periorbital region. Both the psoriasis cases were females and in tuberous sclerosis the female and male ratio is 1:1.

CONCLUSION

Periorbital region is predisposed to multiple dermatoses and all types of skin disorders will affect this region. The periorbital region owing to its easy visibility makes the condition psychologically distressing to the patient. As

there were various periorbital conditions observed in our study, one should be aware of all periorbital conditions as it may be useful in early diagnosis of underlying systemic diseases. In our study periorbital area is vulnerable to almost all types of skin disorders like tumors, pigmentation infections and eczemas. Periorbital area is a delicate and an area of cosmetic concern. Hence one should be aware of all periorbital conditions to avoid any unnecessary biopsies as it may lead to scarring and pigmentation.

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