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A Clinical Study of Periorbital Dermatoses

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Abstract
Background: *Periorbital dermatoses are usually persistent conditions which can influence the quality of life of patients, and proximity to the eye ball can cause therapeutic challenge. There is lack of adequate data regarding the frequency and distribution of periorbital dermatoses in India.*
Aims: *To study the clinical features of periorbital dermatoses and to assess the association of systemic diseases with periorbital dermatoses.*
Methods: *This was a hospital based descriptive study. All patients diagnosed to have periorbital dermatoses at the Dermatology Department of a tertiary care hospital over a period of one and a half years were studied.*
Results: *The common periorbital disorders encountered in the study were tumours (38%), pigmentary disorders (19.5%), xanthelasma (10.5%), infections (9.5%), periorbital dermatitis (5.5%) and naevoid conditions (3%). The most common systemic association with periorbital dermatoses was diabetes mellitus (31%).*
Conclusion: *Periorbital tumours were seen in 76 patients of which syringoma was the most common followed by dermatosis papulosanigra. Benign tumours outnumbered malignant tumours.*
Keywords: *Periorbital dermatoses , tumours , systemic association.*

Introduction

Periorbital dermatoses are dermatological manifestations occurring in the area around the eyes including the eyelids. These are very common conditions which create both diagnostic and therapeutic challenge for dermatologists and the similarity of symptoms in this area causes a diagnostic dilemma[1]. The anatomical differences pertaining to the area predispose it to multiple dermatoses which sometimes localise specifically to the periorbital region. Most patients with periorbital dermatoses are highly distressed because of the visible involvement of the face.

Periorbital dermatoses can be classified according to their nature and morphology. The common dermatoses encountered are periorbital tumours which can be benign or malignant, pigmentary disorders both periorbital hyperpigmentation and hypopigmentation, infections, periorbital dermatitis. This is a hospital based descriptive study undertaken with the aim of categorizing the spectrum of periorbital dermatoses and to assess

the association of systemic diseases with periorbital dermatoses in our setting. There are not much studies in Indian population regarding periorbital dermatoses.

Methods

Two hundred consecutive patients with periorbital dermatoses who attended Dermatology Department of a tertiary care hospital were studied over a period of one and a half years. Those patients whose periorbital skin lesions were a part of generalised skin lesions were excluded. After getting written informed consent, detailed history was taken. Detailed clinical examination including general and cutaneous examination was done. Investigations including blood routine examination, fasting blood sugar,postprandial blood sugar, fasting lipid profile and thyroid function tests were done in all patients to assess any systemic association. All data were entered in standard proforma.

Qualitative variables were analysed using proportions. Quantitative variables were analysed using mean and standard deviation. Chi square test was applied to note if there is any statistical significance between periorbital dermatoses and systemic diseases and a 'p' value less than 0.05 was considered to be statistically significant

Results

A total of two hundred patients with periorbital dermatoses were studied over a period of one and a half years. The most common age group affected was 41 to 50 years accounting for 29.5% cases.

The mean age of the patients was 42.98 years. 132 patients were females and 63 were males with a male: female ratio of 1:2.17. The age of onset in majority of cases was between 41 and 50 (25%).

The lesions were asymptomatic in majority of the cases (73.5%). The commonest symptom was itching which was present in 17% of cases.

Among the two hundred patients, 129 cases had comorbidities. 62 cases had history of diabetes mellitus,41 had history of thyroid dysfunction ,39 had dyslipidaemia, 32 had history of atopy and 24 cases had hypertension. One patient had history of pulmonary tuberculosis.13 patients were obese.

Majority of lesions in the periorbital region were papules(46%) followed by plaques and macules (Table 1) .34.5% cases had involvement of both lower eyelids followed by involvement of upper and lower eyelids of both sides in 30%.

FBS was raised in 28.5% cases, PPBS raised in 20.5% cases. Total cholesterol was elevated in 51% cases, LDL in 15.5% cases, triglycerides in 25% cases. HDL was low in 13.5% cases. 13.5% cases had hypothyroidism.

Periorbital Dermatoses Encountered

The most common dermatoses distributed in the periorbital region were tumours seen in 38% of patients. Periorbital pigmentation (19.5%), periorbital dermatitis (5.5%), infections (9.5%), naevoid conditions (3%) and miscellaneous (24%) constituted the other dermatoses encountered in the study.(Table 2)

Syringoma was the most common periorbital tumour seen in 28 patients. (Figure 1)The age of patients with syringoma was 35± 8.9 years. Male: Female ratio was 1: 3. Age of onset was 21 to 30 years in majority of the patients. The most common site was bilateral lower eyelids (82.1%). The other benign tumours were dermatoses-papulosanigra, seborrhoeic keratoses and skin tags. One patient had basal cell carcinoma. Benign tumours outnumbered malignant tumours. (Table 3)

Periorbital Pigmentation

39 patients had pigmentation over periorbital area. Periorbital hyperpigmentation was seen in 34 patients which included periocular melanosis, melasma, lentigines. Periorbital hypopigmentation was observed in 5 patients with vitiligo. (Table 4)

Periorbital Infections

Viral infections (14 cases) were the commonest among infections which included verrucae (Figure 2),herpes zoster, molluscum contagiosum (Figure

3) . Bacterial infections were seen in 3 patients, 2 with pyoderma and one case with Hansen's disease (BT). Pityriasis versicolor was seen in 2 patients.

Periorbital Dermatitis

Periorbital dermatitis was observed in 11 cases. Exogenous eczemas were more common compared to endogenous eczemas. Allergic contact dermatitis (Figure 4) was the most common eczema. All cases with allergic contact dermatitis gave history of application of topical medications. Quinolone eye drops was the most common allergen. Atopic dermatitis was seen in 2 patients and seborrhoeic dermatitis in 2 patients.

Periorbital Naevoid Conditions

Six patients had naevoid conditions, 3 cases with compound naevus, one each with naevus depigmentosus, naevus of Ota and verrucous epidermal naevus.

Periorbital Miscellaneous Disorders

Xanthelasma was the most common among miscellaneous diseases and was seen in 21 patients (Figure 5) Females dominated with a male: female ratio of 1 : 4.2. 76.19% of cases had a history of dyslipidemia (p=0.001), 33.3% had a history of diabetes mellitus (p=0.807) and 28.6% cases had a history of hypertension (p=0.014%). Statistically significant association was found between occurrence of xanthelasma in patients with history of dyslipidemia and hypertension. 76.1% cases had family history of xanthelasma (p=0.001). The association was statistically significant. 57.1% cases had BMI> 25 (p=0.021). The association was statistically significant. 90.5% cases had total cholesterol levels > 200 (p=0.001%). 57.1% had HDL levels < 40, 61.9% had LDL levels > 130 (p=0.001, 0.002 respectively). The association was statistically significant.

8 cases of milia, 7 cases of colloid milia and 6 cases of senile comedones were observed.

One patient had periorbital psoriasis affecting bilateral medial canthi (Table 5)

Table 1

Morphology	Frequency	Percentage
Macule	43	21.5
Papule	92	46.0
Plaque	45	22.5
Vesicle	4	2.0
Nodule	7	3.5
Ulcer	1	.5
Others	8	4.0

Table 2: Periorbital dermatoses encountered

Periorbital Dermatoses	Number Of Patients	Percentage
Peri orbital tumors	76	38
Periorbital pigmentation	39	19.5
Periorbital dermatitis	11	5.5
Infections	19	9.5
Naevoid conditions	6	3
Miscellaneous	49	24
Total	200	100

Table 3: Periorbital tumours

Periorbital Tumours	Male	Female	Total
Syringoma	7	21	28
DPN	2	17	19
Acrochordon	8	6	14
Classic seborrhoeic keratosis	5	6	11
Angiofibroma	0	1	1
BCC	1	0	1
Cutaneous horn	1	0	1
Trichoepithelioma	0	1	1

Table 4: Periorbital pigmentation

Periorbital hyperpigmentation	Male	Female	Total
Periocular Melanosis	1	24	25
Melasma	0	6	6
Lentigines	1	2	3
Periorbital hypopigmentation			
Vitiligo	1	4	5

Table 5: Periorbital miscellaneous disorders

	Male	Female	Total
Angioedema	1	2	3
Colloid milia	3	4	7
Localised hypertrichosis	0	1	1
Milia	4	4	8
Senile comedone	5	1	6
Xanthelasma	4	17	21
Alopecia areata	1	1	2
Psoriasis	1	0	1

Figure 1: Syringoma

Figure 2 : Verruca

Figure :3 Molluscum Contagiosum

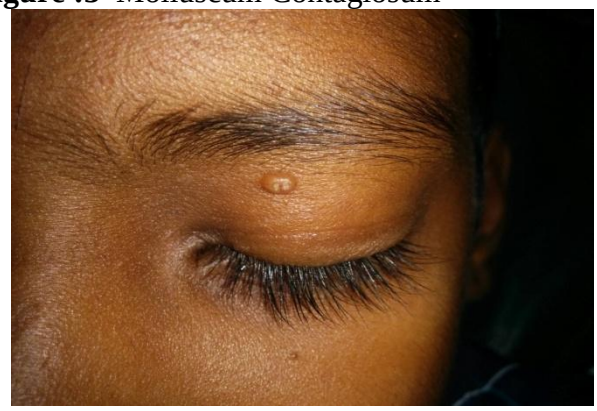
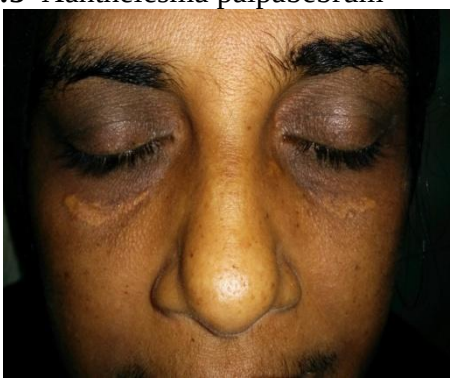


Figure: 4 Allergic contact dermatitis

Figure :5 Xanthelesma palpabebrum



Discussion

200 consecutive patients with periorbital dermatoses were included in the study. The most common age affected was 41 to 50 years. In the study by Bersa et al in South India, majority of cases were in the age group of 31 to 40 years. This was the only previous study regarding the prevalence of periorbital dermatoses in Indian scenario and world literature to compare our data.

Females outnumbered males with a male: female ratio of 1:2.17. Predominance of females was also observed in the study by Bersa et al. Most of the patients with periorbital dermatoses were asymptomatic (73.5%) and the most common symptom was itching which was also in concordance with the study by Bersa et al.

The common periorbital dermatoses encountered in the decreasing order of frequency in our study were periorbital tumours, pigmentary diseases, xanthelasma, infections, periorbital dermatitis and naevoid conditions. In the study by Bersa et al tumours and pigmentation were the most common but the number of patients with xanthelasma was too less compared to our study.

Tumours were the commonest dermatoses which contributed 38% of the cases. Benign tumours outnumbered malignant tumours. A decreased incidence of malignant tumours when compared to benign tumours was reported by Alfredo Rebora[2]. Syringoma, dermatosis papulosanigra, classical seborrhoeic keratosis and acrochordon constituted majority of the cases of periorbital tumours (95%), which was again supported by the study of Bersa et al. One case each of trichoepithelioma, angiofibroma and cutaneous horn were observed. One patient had periorbital basal cell carcinoma. Peralejo et al pointed out basal cell carcinoma to be the most common malignancy affecting theperiorbital area.[3]

Syringomas were the commonest tumour in this study, seen in 28 patients. Females outnumbered males with a male: female ratio of 1:3. This was in concordance with the study by Al Aradi et al[4] .However in the study by Bersa et al syringomas were more common in males. Majority of patients with syringoma showed involvement of bilateral lower eye lids which was in concordance with the study by Dr. Butterworth[5]. 17.8% of patients with syringoma had diabetes.

Dermatosis papulose nigra was observed in 9.5% of total patients in the study. Bersa et al observed this in 3.2% of their patients. The commonest age group affected in this study was 31 to 50 years which was in concordance with the study by Bersa et al. Classical seborrhoeic keratosis were seen in eleven patients and most of them belonged to the age group of 41 to 60 years. Lim et al observed the average age of patients with classical seborrhoeic keratosis to be 74 years[6]. Thus in this study DPN was more common among the younger age group and classical seborrhoeic keratosis was more common among the elderly which was also observed by Bersa et al. 72.7% of patients with classical seborrhoeic keratosis had associated diabetes mellitus and the association was statistically significant (p=0.002). BMI >25 was observed in 81.1% of patients and the association was found to be statistically significant (p=0.001). These observations were also established in the study by Bersa et al. Periorbital skin tags were seen in 14 cases. Males outnumbered females. However in the studies by Bhargava et al[7] and Bersa et al females outnumbered males.78.6% of patients with acrochordons had diabetes mellitus and the association was found to be statistically significant (p=0.001). This was in concordance with the study by Demir et al[8]. In our study 78.6% of patients with acrochordons had a total cholesterol more than 200 and the association was statistically significant (p=0.032) and was in concordance with the study by Shah et al in Indian population[9].

57.14 % cases had triglyceride level greater than 150 and the association was statistically significant (p=0.004) and was in concordance with the study by Crook et al[10].

Thirty nine patients had pigmentation over periorbital area. Hyperpigmentation was more common (34 cases) compared to hypopigmentation (5 cases) in the periorbital region which was comparable with the findings by Bersa et al. Periocular melanosis was observed in 25 cases. 42.3% cases had a positive family history,but the finding was not statistically significant. This was also highlighted in the study by Ranu et al[11]. Melasma was exclusively seen in females in the study as observed by Bersa et al.

Among periorbital infections, viral infections outnumbered bacterial infections. The study by Bersa et al observed equal number of viral and bacterial infections. The commonest viral infection was verrucae seen in six cases in this study.

Only one case of Hansen's disease Borderline tuberculoid confined to the periorbital area was encountered in this study whereas Bersa et al observed three such cases.

11cases of periorbital dermatitis were encountered in this study. Exogenous eczemas were more common compared to endogenous eczemas as observed by Bersa et al. Allergic contact dermatitis to Quinolone eye drops was seen in five cases. In the study by Feser et al in Germany, consumers products were identified as the most

relevant allergic sources for periorbital contact dermatitis[12].

However, in our study we did not encounter any case of allergic contact dermatitis due to cosmetic use.

Two cases of atopic dermatitis involving the periorbital area were encountered and both had involvement of bilateral infraorbital area. Bersa et al observed bilateral upper eyelids as the commonest site of atopic dermatitis. Seborrhoeic dermatitis was encountered in two cases.

Other conditions observed were naevoid conditions, milia, colloidmilia, senile comedones. Al – Mutairi et al have observed periorbital area as one of the commonest sites of milia[13]. Senile comedones are often limited to the face particularly the periorbital area.

A notable entity in this study was xanthelasma which was observed in 21 patients and this was the commonest periorbital condition next to syringoma and periorbital melanosis. Surprisingly, the study by Bersa et al observed only two cases of xanthelasma during their study period. In our study the mean age of cases were54.95 ± 21 years which was comparable with the study by Ribera et al[14]. Females outnumbered males in the study. Statistically significant association was found between occurrence of xanthelasma in patients with dyslipidemia and hypertension (p= 0.001 and 0.014 respectively). The studies by Ribera et al and Watanabe et al[15] observed high prevalence of dyslipidemia in patients with xanthelasma and the study by Pedace et al observed hypertension in 7.7% of xanthelasma cases[16]. A significant association between xanthelasma and obesity was observed in our study which was in concordance with the study by Pedace et al. In our study 90.5% had elevated total cholesterol levels which was significant and was in concordance with the study by Ribera et al. 57.1% had HDL levels less than 40 and 61.9% had LDL levels more than 130 which were statistically significant (p=0.001 and 0.002 respectively).This was in concordance with the study by Watanabe et al.

One patient had periorbital psoriasis and the lesions affected bilateral medial canthi. Feser et al in their study on periorbital dermatitis have reported two cases of periorbital psoriasis.

Conclusion

The common dermatoses in the periorbital region observed in this study were tumours, pigmentary disorders, xanthelasma, infections, periorbital dermatitis and naevoid conditions. We observed diabetes mellitus as the most common systemic disease associated with periorbital dermatoses notably acrochordons and seborrhoeic keratosis. It is therefore imperative to screen these patients.

Although a few studies have been reported with reference to specific dermatoses, there is dearth of information regarding frequency and distribution of periorbital dermatoses in literature. So it warrants further extensive studies to understand the pattern of various periorbital dermatoses and to assess their association with systemic diseases.

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