

Clinical spectrum of periorbital dermatosis in Iraqi patients attending Al-Kindy Dermatology Center

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Abstract

Background: Periorbital dermatosis is a term used to encompass any dermatological manifestation involving the region around the eyes, solely or as a part of conditions affecting other neighboring or distant body regions. It represents a common dermatological presentation encountered daily.

Objective: To study the frequency and pattern of dermatological diseases in the periorbital region.

Methods: A descriptive cross-sectional study was conducted in the Dermatology and Venereology department in Al-Kindy Teaching Hospital, Baghdad, Iraq during a period from 7th January 2021 to 23rd December 2021. A total of 406 patients with periorbital dermatoses were enrolled. The diagnosis was made clinically.

Results: Of the 406 participants, 235 (57.9%) were females, and 171 (42.1%) were males. The most common age group implied in the study was <10 years, with 105 (25.9%) cases. Neoplastic dermatoses were the most reported conditions in 102 (25.1%) of the patients followed by inflammatory dermatoses with 97 (23.9%) reported cases. For neoplastic XV conditions, adnexal 31 (30.4%) and melanocytic 30 (29.4%) were over-presented among other neoplasms.

Conclusion: There is a diversity of cutaneous diseases involving the periorbital region. The female patients are predominantly affected more than males.

Keywords: Periorbital dermatosis; Dermoscopy; Wood's lamp examination; KOH examination

1. Introduction

Periorbital dermatosis is a term used to encompass any dermatological manifestation involving the region around the eyes, solely or as a part of conditions affecting other neighboring or distant body regions. It is used interchangeably with the term 'periocular dermatoses' [1]. This group of dermatoses has a diverse array of clinical presentations, giving to the unique embryologic, anatomic, and physiologic features of the periorbital region. They can pose both diagnostic and therapeutic challenges concerning the peculiarly sensitive skin of the region [2]. The anatomical position of the eye close to skin renders it more vulnerable to various pathological processes involving the area as in herpes zoster, cicatricial pemphigoid...etc [3]. Periorbital dermatoses can serve as a clue to an underlying systemic disease e.g. xanthelasma is associated with hypercholesterolemia [4]. The periorbital region is considered one of the major aesthetic units of the face. It is easily visible, the reason which makes the patient seek medical help for any condition involving it.

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The eye and skin share a common embryological origin. The ectoderm forms the surface epithelium of the eyebrow, eyelid, conjunctiva, corneal epithelium, lacrimal gland, and its drainage system. The deeper connective tissues and their vascular components are derived from mesodermal ancestry [5].

By observing the surface anatomy, the periorbital region is situated in the upper half of the face and is considered one of the major cosmetic units. It consists of two main structures which enclose and protect the eyeball; the eyebrow and the upper and lower eyelids. They are edged by the bony prominences of the orbital rim [6]. The eyebrow (supercilii) is a transverse hair-bearing elevation between the forehead and the upper eyelid. It is formed by the skin, subcutaneous tissue, and muscle on the bony supraorbital ridge. In addition to protecting the eye from sweat and bright light, it plays an important role in facial expression owing to a somewhat wide range of motion by the contributing action of the frontalis muscle, orbicularis

oculi muscle, and corrugator supercilii muscle [7].

The skin of the eyebrow is thick and mobile, with an abundance of sebaceous glands. The hairs are stiff and form a comma-like area, its head (with vertical hairs) is medial and typically below the orbital margin, the body lies along the margin (with oblique or horizontal hairs). The tail is usually above the orbital margin [7]. Hence, this study aimed to investigate the frequency and pattern of dermatological diseases in the periorbital region.

2. Methods

2.1. Study patients and Sample size

A total of 406 patients with periorbital dermatoses attending the Dermatology and Venereology Department in AlKindy Hospital, were enrolled. The diagnosis was made clinically in the majority of patients by obtaining a complete history and conducting a methodical physical examination and in some instances, performing bedside diagnostics (dermoscopy, wood's lamp examination, and KOH examination), laboratory tests, and skin biopsy.

2.2. Data collection methods

A questionnaire was applied to all patients to gather the required information and documented in the data collection form. Through a direct interview with the patient, the data collection form was filled in by the researcher. The data collection form was included the patients's code, patient demographic data (age, sex), history, physical examination, laboratory test (if needed), and a provisional diagnosis of the condition. Documentation of cases was done by taking Digital photographs, by the camera of iPad Pro 12.9-inch (4th generation) and the camera of iPhone 11 Pro Max.

2.3. Statistical analysis

Analysis of the study data was carried out using the available statistical package of SPSS-27. Data were presented in frequency, percentage, mean, standard deviation, and range. The significance of difference of different means (quantitative data) was tested using Students t-test for difference between two independent means or the ANOVA test for the difference among more than two independent means. The significance of difference of different percentages was tested using the Pearson Chi-square test (χ^2 -test) with the application of Yate's correction or Fisher Exact test whenever applicable. Statistical significance was considered whenever the P-value was equal to or less than 0.05.

3. Results

3.1. Distribution of sociodemographic characteristics in participants

The study enrolled in a total of 406 eligible patients who met the inclusion criteria of periorbital dermatoses. As shown in (Table 1), the mean \pm SD for age distribution was 28.8 \pm 20.3, and the age ranged between (9d-100y). The most common age group implied in the study was <10 years with 105(25.9%) cases followed by age between 40-49 years with 69(17%). Of the 406 patients, 235 (57.9%) were females and 171 (42.1%) were males with significant difference (P<0.01)(Table 2).

Table 1 Distribution of sociodemographic characteristics in participants

Age/years	No.	%	P-value
<10	105	25.9	<0.0001
10-19	94	12.1	
20-29	55	13.5	
30-39	61	15.0	
40-49	69	17.0	
50-59	33	8.1	
60-69	25	6.2	
≥70	9	2.2	
Age mean±SD	28.8±20.3	Range(9d-100y)	

Table 2 Percentage of males and females in participants

Groups	No	%	P-value
Males	171	42.1	<0.01
Females	235	57.9	

3.2. Main classification of periorbital dermatoses

Neoplastic dermatoses were the most reported conditions in 102 (25.1%) of the patients. The second most common dermatoses were the inflammatory dermatoses 97 (23.9%) cases, followed by infectious dermatological conditions with 84 (20.7%) cases. Pigmentary dermatoses were present in 51 (12.6%) patients, followed by cystic, deposition, and hair lesions in decreasing order, as shown in (Table 3). The cystic lesions mainly consisted of milia (26 cases) and eccrine hidrocystoma (8 cases), while xanthelasma (12 cases) comprised the whole encountered deposition disorders.

Table 3 The classification of periorbital dermatoses of the study patients

Peri-orbital dermatosis	N	%
Inflammatory	97	23.9
Infectious	84	20.7
Cystic	39	9.6
Hair	9	2.2
Genodermatosis	3	0.7
Pigmentary	51	12.6
Hair	9	2.2
Deposition	12	3.0
Neoplastic	102	25.1
Others	9	2.2

3.3. Subcategorization of periorbital dermatoses

Among neoplastic conditions, adnexal (syringoma) 31 (30.4%) and melanocytic 30 (29.4%) were the most commonly encountered neoplasms followed by epidermal, fibrous, vascular, and lymphoproliferative conditions (**Table 3.6**). Benign neoplasms 95 (93.1%) constitute the vast majority of these disorders, with the malignant neoplasms, had been noticed in 6 (5.6%). Basal cell carcinoma (5 cases) was the most prevalent malignancy affecting the eyelids, also there was 1 patient diagnosed with mycoses fungoides involving the region. Skin tags were the most frequent fibrous proliferation were observed in 15 cases, seborrheic keratosis in 4 cases, and pseudolymphoma in 1 case.

Inflammatory disorders are subcategorized according to the underlying pathomechanism into; **endogenous** inflammatory dermatoses which are found in 75 (77.3%) and **exogenous** inflammatory dermatoses in 22 (22.7%). Eczematous inflammatory disorders have been found in 47 (48.5%)[**Table 3.6**]. Among endogenous components, 7 patients had angioedema, 5 patients had urticaria, and 5 patients presented with psoriasis. Of 47 individuals who had eczematous lesions, atopic dermatitis outnumbered other eczemas, that occurred in 17 patients. In addition, seborrheic dermatitis was the second most common eczematous condition, presented in 11 cases, followed by allergic and irritant contact dermatitis (8) and (5) patients respectively.

Analysis of infectious dermatoses has demonstrated an overall prevalence of viral infections in 59 (70.2%) patients, followed by bacterial infections 12 (14.3%), fungal infections 9 (10.7%), and protozoal infestations(leishmania) 4 (4.8%). Molluscum contagiosum accounted for the majority (59.3%) of viral infections. Periorbital hyperpigmentation (typified by periorbital darkening) surpassed the hypopigmentation disorders (exemplified mainly by vitiligo), with 60.8% and 35.3% of pigmentary patients respectively (Table 3.6).

Table 6 Subcategories of periorbital dermatoses

periorbital dermatoses	Subcategories	No	%
Infectious (n=84)	Viral	59	70.2
	Bacterial	12	14.3
	Fungal	9	10.7
	Protozoal	4	4.8
Inflammatory (n=97)	Endogenous	75	77.3
	Exogenous	22	22.7
Inflammatory (n=97)	Eczematous	47	48.5
	Not	50	51.5
Pigmentary (n=51)	Hypopigmentation	18	35.3
	Hyperpigmentation	31	60.8
	Mixed	2	3.9
Neoplastic (n=102)	Benign	95	93.1
	Pre-malignant	1	1.0
	Malignant	6	5.9
Neoplastic (n=102)	Vascular	7	6.9
	Melanocytic	30	29.4
	Lymphoproliferative	2	2.0
	Fibrous	16	15.7
	Epidermal	16	15.7
	Adnexal	31	30.4

4. Discussion

The results of this work revealed an extended spectrum of dermatological conditions involving the area around the eyes. In our study, the female patients 57.9% preponderates the males' 42.1% with a female to male ratio of 1.3:1. These facts were closely comparable to other reported studies [8-14]96-101. The reasons for sex related disparities remain unknown, and maybe multifactorial. A possible explanation could be related to sex differences in the structure and function of skin, genetic predisposition, effects of sex hormones, race/ethnicity, sociocultural behavior, and environmental or geographic factors.

The present study showed the predominant involvement of <10y age group; 25.9% of patients, in contrast to other studies [8-13]96-101 which reported the prevalence of an older age group. This variation may be related to the sample size and the differences in the demographic characteristics between India and Iraq, where these studies are conducted.

Neoplastic dermatoses are the most prevalent conditions, which is consistent with the finding described in other studies. It was observed in 25.1% of participants, this was similar to what has been reported in Bhavsar and Nair 25.1% of patients [10]98, and closely compared to what had been mentioned in Besra et al. 25.2% of patients [9] 97 and Indradevi R et al. 26.3% of patients [11]99, whereas it was a relatively less than other studies. [8, 12, 13]96,100,101

Benign neoplasms 93.1% were predominate malignancies 5.9%, a finding that was comparable to what has been reported in the literature [14]102. Most studies noted seborrheic keratosis as the commonest neoplasm, it was reported by several studies. [8, 9, 11]97,98,100

In the current work, seborrheic keratosis was noticed in 4 cases only. The reasons may be related to the younger population in this study (tends to occur in the fourth and fifth decade) and to the geographical variation in the prevalence of seborrheic keratosis [15,16]109-110. Adnexal neoplasm (mostly syringoma) was the most prevalent tumor in this work seen in 30.4% of tumors, the mean age was 34.5±10.6 years, which is relatively similar to the results published by Arjun A et al 96. While Besra et al found syringoma slightly more common in males [9] 97, our study revealed a striking female predominance with a mean age of 34.5y, which is in concordance with the published literature. [8, 11, 17]96,99,103.

5. Conclusion

This work draws attention to the peculiarity of the periorbital region concerning specifications of the anatomical landmarks and the ultrastructural modifications of the skin in this area. There is a diversity of cutaneous diseases involving the periorbital region. The females are affected more than males. The prevalence of disorders is more common in children. Although neoplastic dermatoses are mostly reported among other diseases, they are closely equivalent to the number of inflammatory dermatoses.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors declare no conflict of interest.

Statement of ethical approval

Ethical approval for this study was done.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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