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Original Research Article

Ocular Manifestations in Rosacea: A Clinical Study

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Abstract:

Background: Rosacea is a multisystem disorder and to the general practitioner, involvement of the skin is what comes to the mind first of all. A broad array of ocular manifestations encompasses this condition and ocular examination is as essential as examination of other part of body when rosacea is talked about.

Objectives: To study the ocular manifestations in patients with rosacea and to correlate the ocular and dermatological manifestations of rosacea

Methods: 114 newly diagnosed Rosacea patients were enrolled in study. Complete dermatological and ocular examination recorded and analysed.

Observations: Lid margin involvement, corneal affections with significant dry eye.

Conclusions: All the patients attending to either of departments should have complete ophthalmologic and dermatologic evaluations, so that both ocular and dermatologic manifestations can be treated at the earliest, and complications can be avoided. Symptoms frequently go undiagnosed because they are too nonspecific.

Keywords: Ocular Menifestations, Rosacea.

Introduction

Rosacea is well recognized as a chronic cutaneous disorder primarily of the convexities of the central face (cheeks, chin, nose and central forehead), often characterized by remissions and exacerbations. Based on present knowledge, it is considered a syndrome or typology, encompassing various combinations of such cutaneous signs as flushing, erythema, telangiectasia, edema, papules, pustules, ocular lesions & rhinophyma. In most cases, some, rather than all of these stigmata appear in a given patient. [1]

There is no specific test for rosacea, but its characteristic appearance, cutaneous distribution, discrete course, typical target population, and response to various therapies make accurate diagnosis possible [2].Ocular findings are grouped as either minor or major, non-sight to sight threatening. Minor complications are much more common. Prevalence of ocular involvement in patients with rosacea has been reported as low as 3 % [1] to as high as 58 % .[6] Symptoms frequently go undiagnosed because they are too nonspecific. A common presentation is, a patient with mild conjunctivitis with soreness, grittiness and lacrimation. Patient with ocular Rosacea have been reported to have sub normal tear production (dry eyes) and they have frequent complaints of burning out of proportion to the clinical signs of disease. The reported signs are conjunctival hyperaemia, telangiectasia of the lids, blepharitis, superficial punctate keratitis, meibomian gland dysfunction presenting as chalazion or chronic staphylococcal infection as manifested by styes, corneal vascularization and infiltrates, corneal vascularization and thinning, marginal corneal ulceration, episcleritis, scleritis, iritis, viteritis and a decrease in TBUT (tear breakup time). In a patient of ocular rosacea some but not all of the above mentioned signs may be present. [3,4]

Among dermatologists ocular rosacea may be designated as an orphan disease. It generally goes unrecognized, undiagnosed, under treated and under reported. [4] Dermatologists and ophthalmologists have recorded widely differing estimates because they don't see the same patients. [2]The ocular symptoms are so non-specific that the condition remains under diagnosed. If both ophthalmologists and dermatologists examine the same patient for both ocular and skin manifestations, the detection rate of ocular rosacea will increase and early measures could be initiated

to save eyes. The present study was designed keeping the same objective in consideration and every attempt was made that every rosacea patient had to be examined by dermatologist for skin involvement and by an ophthalmologist for ocular manifestations.

Aims and Objectives

- To study the ocular manifestations in patients with rosacea.
- To correlate the ocular and dermatological manifestations of rosacea.

Materials and Methods

The present study was a clinical study, which was conducted in a period of one year. All consecutive patients presenting in the Department of Dermatology and Department of Ophthalmology during this time, were included in this study.

Methods

114 newly diagnosed Rosacea patients were identified and enrolled for clinical study. Arrangements were made in such a way that each roseaca patient tobe examined by both departments.

Both dermatological and ocular findings of each patient recorded after valid consent of each patient including permission for photograph to be taken and published.

Inclusion Criteria

- All patients having cutaneous manifestations were subjected to ocular examination and were included in study.
- Inclusion criteria for patients having only ocular involvement, without cutaneous involvement, were those with the classical symptoms and signs of rosacea

Exclusion Criteria

- Ocular disease such as injuries, chemical conjunctivitis, viral and bacterial conjunctivitis, immuno-logical diseases that might interfere with evaluation
- Hypersensitivity to xylocaine, rose bengal, and fluorescein
- Contact lens wearer
- Patients previously diagnosed as cases of kerato-conjuctivitis sicca i.e. with arthritis, xerostomia, parotid & lacrimal gland enlargement and abnormal Schirmer Test-I
- Use of any other systematic antibiotic during and proceeding four weeks
- Exposure resulting from lagophthalmos, neurotropy and neuroparalysis
- All red itchy eyes having eosinophilia on conjunc-tival smear examination

Ocular symptoms and signs were taken into consideration, analyzed and graded as mild up to 2, moderate 3-6 and severe 7 or more. [5]

Slit Lamp bimicroscopic examination was done in all cases for both eyes. Status of Meibomian glands and their secretions was assessed. The lid margin was assessed and conjunctiva was seen for telangiectasia and cornea for superficial punctate keratitis and marginal infiltrates, with white light before and after installation of rose Bengal dye and through cobalt blue filter after installation of Fluorescein. Fluorescein staining was assessed through Cobalt blue filter and was graded from 0 to 3 for each of the upper, middle, and lower thirds of the cornea. Rose Bengal staining of the temporal conjunctiva, cornea, and nasal conjunctiva was also graded from 0 to 3 after examination with ordinary light without any filter. The grading scale was defined according to the staining extent: 0 for negative; 1, scattered minute; 2, moderate spotty; and 3, diffuse blotchy staining.

Schirmer Test - I (without topical anesthesia): It was done to assess tear volume in each eye at each visit. A value above 15.0 mm was considered normal,[6] and Schirmer Test - I (with topical anesthesia): 5 minutes Schirmer test with topical anesthesia was done to assess tear volume in each eye at each visit. A value above 5.0 mm was considered normal. [5,7]

Tear Break Up Time (TBUT): The test was repeated 3 times in each eye and average TBUT was taken. An attempt was made to maintain constant temperature humidity and airflow. A normal TBUT greater than 10 seconds was taken as normal. [5]

Statistical analysis: It was done using paired t-test. All the data was analyzed using student's 't' test and 'p' value was calculated at 5 % level. 'p' value less than 0.005 implied that the data was statistically significant at 5 % level (95 % confidence limits) and a value of more than 0.005 was taken as statistically insignificant

Results

Out of 114 Rosacea patients examined

- Group-1(Patients with Skin manifestations only) had 55 (48.24%) patients
- Group-2 Patients with (Both Skin and Ocular manifestations) had 35 (30.75%) patients
- Group-3 (Patients with Ocular manifestations only) had 24 (21.05%) patients
- 90 patients had dermatological manifestations (78.94%)
- 59 patients had ocular involvement (51.75%)

Of 114 patients 43(37.72%) were males and 71 were female (62.28%) Incidence of rosacea among male and females, with regard to both cutaneous

and ocular manifestations. In case of only cutaneous manifestations, men being affected less than half proportion as compared to women (F/M : 2.23/1). However when eyes were involved, the proportion was almost equal, being slightly higher in women (F/M:1.26/1).

The maximum skin involvement being in age group 20 and 49 years and ocular involvement in 30 and 69 years The mean age of presentation, in Group-A (Patients with cutaneous manifestations only) for males was 44.52 yrs., and for females 36.34 yrs and in Group-C (Patients with Ocular manifestations only), males was 51.72 yrs and for females 44.13 yrs.

We observed that females in both groups were affected earlier in age than males and ocular involvement was a decade later cutaneous involvement.

Table 1: Relative onset of Cutaneous and Ocular Manifestations in group-B

Involvement of skin and eyes	Women%	Men%
Simultaneous	25%	33.33%
Skin first	55%	40%
Eyes first	20%	26.67%

The ocular and cutaneous manifestations occurred simultaneously in 10 (28.75%) patients, but the incidence was more in men (33.33%); in comparison to women (25%).

The cutaneous manifestations occurred first in 55% of women with greatest prevalence within previous five years (35%). The skin involvement was observed first in 40% of men, with history of 6-10 years duration by large number of men (20%). Small number of both men and women were suffering with skin disease, for more than 10 years, without involvement of eyes.The ocular manifestations began first in almost one- fifth of cases, the eyes were involved first without any skin involvement in 26.67% of men in comparison to 20% of women. The frequency of ocular involvement was more in men as compared to females.

Out of 114 total rosacea patients examined, 90 patients (Group A + Group B) had the dermatological manifestations of various types.

Table 2: Dermatological manifestations of various types in 90 patients (Group A + Group B)

	Erythmatotelangectaticrosacea - (ETR)	Papulopustular rosacea (PPR)	Phymatos rosacea(PR)
No of patients	65 (72.22%)	19 (21.11%)	6 (6.66%)

These triggers were ranked according to likelihood of precipitating flare-up as shown in table below

Table 3:showing various trigger factors in rosacea

Factor	No. & % of patients affected	No. & % of patients in whom factor was No. 1 trigger	No. & % of patients in whom factor was No. 2 trigger
Sun	71(62.28%)	24(21.05%)	10(08.77%)
Stress	56(49.12%)	18(15.78%)	12(10.52%)
Hot weather	49(42.98%)	12(10.52%)	11(09. 64%)
Hair dye	46(40.35%)	19(16.66%)	12(10.52%)
Spicy food	45(39.47%)	22(19.29%)	08(07.01%)
Exercise	39(34.21%)	14(12.28%)	06(05.26%)
Cold weather	34(29.82%)	09(07.89%)	05(04.38%)
Alcohol	28(24.56%)	16(14.03%)	06(05.26%)
Hot beverages	26(22.80%)	06(05.26%)	03(02.63%)
Humidity	18(15.78%)	04(03.50%)	03(02.63%)
Skin care	14(12.28%)	05(04.38%)	02(01.75%)
Drugs	03(02.63%)	01(0.87%)	02(01.75%)

59 patients, with ocular involvement ‘reported experiencing one or more symptoms, in 118 eyes, occasionally, frequently or as a constant feature in their eyes. Among the symptoms analyzed burning sensations in 76 eyes (64.40%), itching in 62eyes (52.54%), redness in 56 eyes (47.45%) , foreign body sensations in 42 eyes (35.59%), watering in 32 eyes (27.11%), stinging sensations in 26 eyes (22.03%), Eye lid bumps in 19 eyes (16.10%) Dryness in 18 eyes (15.25%) Foaming in 16 eyes (13.55%) Styes in 14 eyes (11.86%) Mattering/Crusting in 12 eyes (10.16%) Scaling in 12 eyes (10.16%) Swelling in & around eyes in 8 eyes (6.77%) Photosensitivity in 7 eyes (5.93%) Blurred vision in 7 eyes (5.93%) and Pain in eyes in 4 eyes (3.38%) were found.

Table 4:

Sl. No.	Symptom	Noofeyes
1.	**Burning sensation**	**76 (64.40%)**
2.	**Itching**	**62 (52.54%)**
3.	**Redness**	**56 (47.45%)**
4.	**Irritation&Foreignbodysensation**	**42 (35.59%)**
5.	Watering/ Tearing	32 (27.11%)
6.	Stinging	26 (22.03%)
7.	Eye lid bumps	19 (16.10%)
8.	Dryness	18 (15.25%)
9.	Foaming	16 (13.55%)
10.	Styes	14 (11.86%)
11.	Mattering/Crusting	12 (10.16%)
12.	Scaling	12 (10.16%)
13.	Swelling in & around eyes	08 (06.77%)
14.	Photosensitivity	07 (05.93%)
15.	Blurred vision	07 (05.93%)
16.	Pain in eyes	04 (03.38%)

For ocular symptoms, patients reported them experiencing one or more symptom occasionally, frequently or as a constant feature in their eyes. For them burning sensations, itching, redness, foreign body sensations, watering, stinging sensations and dryness were frequent or constant symptom (Table-8).There were 74.3% eyes to be reported of occurrence of at least 1 symptom frequently.

42.6% eyes had occurrence of 2 symptoms frequently and there were 3 symptoms occurring frequently in 35.7%of eyes as reported by patients, recorded as Frequency (Percent).

Table 5:Patient- reported Symptom Frequencies (n =118 eyes of 59 patients)

Symptom	Occasional	Frequent	Constant
Burningsensation	14.8%	69.9%	15.3%
Itching	27.5%	43.6%	29.9%
Redness	19.4%	56.8 %	23.8%
Irritation, F.B. sensation	25.1%	52.2%	22.7%
Watering/ Tearing	16.4%	61.8%	21.8%
Stinging	34.7%	53.8 %	11.5%
Dryness	33.4%	49.8%	16.8%

The symptoms were graded into Grade-I (Mild), Grade-II (Moderate) and Grade-III (Sever) as per no. of symptoms patient had:

1. 48 eyes (40.67%) had Grade-I (Mild) symptoms i.e.<3 symptoms
2. 60 eyes (50.86%) had Grade-II (Moderate) symptoms i.e.3-6symptoms
3. 10eyes (8.47%) had Grade-III (Sever) symptoms i.e>6 symptoms

Grades of symptoms in 118 eyes of 59 patients with ocular involvement.

Ocular signs: On bimicroscopic examination of 118 eyes, of rosacea patients with ocular manifestations, lid related manifestations were found to be the commonest. Erythema/ Telangiectasia of lid margin was found in 89 (75.42%) eyes, Meibomian gland dysfunction presenting as meibomitis, capped or plugged meibomian glands – was present in 82 (69.49%) eyes, blepharitis was seen in 68 (57.52%)eyes,whereas styes 25 (21.18%) and chalazion were observed i17(14.4%) n eyes. Conjunctivitis presenting as conjunctival hyperemia, mainly as interpalpaberal hyperemia, was seen in 56 (47.45%) eyes, papillary hypertrophy in 22 (18.64%) eyes, conjunctival scarring in 3 (2.54%) eyes, phlyctenular conjunctivitis in 2 (1.69%) eyes and conjunctival granulomas were observed in 2 (1.69%) eyes

Table 6:showing various ocular signs (n=118 eyes)

	Signs	No. of eyes
Lid related signs	**Telangiectasia ana Erythema of lid margin**	**89 (75.42%)**
	Meibomian gland dysfunction	**82 (69.49%)**
	Blepharitis	**68 (57.52%)**
	Styes	25(21.18%)
	Chalazion	17(14.4%)

Conjunctival involvement	Bulbar injection/ conj. hyperemia	56 (47.45%)
	Papillary hypertrophy	16 (13.55%)
	Conj. scarring	3(2.54%)
	Phlyctenular conjunctivitis	2(1.69%)
	Conjunctival granulomas	2 (1.69%)
Corneal involvement	Superficial punctate keratitis	49 (41.52%)
	Ciliary base congestion	21 (17.79%)
	Stromal infilterates	16 (13.55%)
	Recurrent corneal erosions	8 (6.77%)
	Marginal corneal ulcers	7(5.93%)
	Corneal thinning	3(2.54%)
	Corneal scarring	2(1.69%)
Other ocular signs	Tear lake deficiency(dry eye)	32(27.11%)
	Tear foaming	18 (15.25%)
	Episcleritis& scleritis	7(5.93%)
	Iiritis	3(2.54%)
	Viteritis	1 (0.84%)

Corneal involvement was observed as superficial punctate keratitis in 49 (41.52%) eyes mainly in the lower 1/3rd of cornea, Ciliary base congestion in 21 (17.79%) eyes,stromal infilterates in the 16 (13.55%) eyes, recurrent corneal erosions in 8 (6.77%) eyes and small marginal corneal ulcers in 7 (5.93%) eyes. In all cases the ulcers were situated in lower half of cornea. The corneal thinning was observed in 3(2.54%) eyes whereas corneal scarring was observed in 2(1.69%) eyes.Of the 118 eyes examined of 59 patients, in various groups, when analyzed had

- Grade-I signs in 5 eyes (Rt.eye-1, Lt. Eye-4)
- Grade-II signs in 87 eyes (Rt.eye-45, Lt. Eye-42)
- Grade-II signs in 26 eyes (Rt.eye-13, Lt. Eye-13)

Schirmer's' test In Schirmer's test without anaesthesia, out of 118 eyes with ocular manifestations of rosacea,

- 79 eyes were categorized in grade-0 i.e. >15 mm in 5 minutes
- 25 eyes were categorized in grade-I i.e. 11-15 mm in 5 minutes
- 14 eyes were categorized in grade-II i.e. 0-10 mm in 5 minutes

In Schirmer's test with topical anesthesia, out of 118 eyes with ocular manifestations of rosacea,

- 77 eyes were categorized in grade-0 i.e. >5 mm in 5 minutes
- 22 eyes were categorized in grade-I i.e. 4-5 mm in 5 minutes
- 19 eyes were categorized in grade-I I i.e. 0-3 mm in 5 minutes

In patients with cutaneous manifestations only the Schirmer's testing was normal and were categorized as grade-0

Tear break up time (TBUT)

Tear break up time was assessed in both eyes of all patients and average of three readings in each eye was recorded. We observed that in patients with cutaneous manifestations only, the values of TBUT were normal (i.e.>10 seconds) and were categorized as Grade-0, whereas in patients having ocular manifestations (n=118 eyes), 71 eyes were found to be in Grade- I (i.e.6-10 seconds) and 34 eyes were in Grade-II (i.e. 0-5 seconds).

Correlation between ophthalmic involvement and type of cutaneous disease

We tried to discover whether there was a correlation between the ophthalmic involvement and the type of cutaneous disease.35 of 59 patients (59.32%) with ocular rosacea had cutaneous findings. 11 (31.42%) of these 35 patients had isolated erythema and telangiectasia (stage-I). In 9 of these patients lid margin telangiectasia was prominent, tear break up time (TBUT) was affected in 8 patients, and conjunctival hyperemia was observed in 14 eyes of 7 patients of varying degrees. No abnormality in Schirmer's testing was noticed in these patients. 16 of 35 patients (45.71%) exhibited overlap of first and second stage of rosacea, erythema and telangiectasia associated with Papulopustular lesions. In 11 patients, conjunctival hyperemia and in 1 patient conjunctival granuloma was noticed, in 10 patients, meibomian gland dysfunction in form of meibomitis and in 6 patient's blepharitis was observed. 8 patients had superficial punctate keratitis with positive Fluorescein staining.

When the triple association of telangiectasia, papulopustular lesions and cutaneous hypertrophy in form of rhinophyma existed in 6 patients (17.14%), conjunctivitis or kerato-conjuctivitis was seen in 5 patients. Most of ocular signs were present in these patients including severe fall in TBUT, low values of Schirmer's testing, dry eyes and meibomian gland dysfunction in form of

meibomitis or in form of chalazia and sties existed. Only in one patient with rhinophyma (stage-III), no specific ocular signs were observed although ocular symptoms such as burning sensations abd irritation and foreign body sensations were present in both eyes. Schirmer's test was lower and rose bengal staining was mildly positive.

Among these 35 patients, when interviewed, 16(45.71%) had ocular involvement first and 19 patients (54.28%) had concomitant cutaneous and ocular involvements.

Among 114 patients with rosacea, 59 patients had ocular involvement. 33 of these patients attended ophthalmology department first whereas 26 patients attended dermatology department first and were later on referred for ophthalmic examination from dermatology department. Ocular involvement was observed in patients attending the dermatology clinic as 32.09% and in ophthalmology clinic as 55.93% against overall presentation of 51.75% in 114 patients with rosacea examined.

The ocular symptoms and signs were mild to moderate in intensity in patients attending the dermatology clinic first and patients were not concerned of them, whereas intensity of ocular symptoms and signs were moderate to severe in patients attending the ophthalmology clinic first and patients had serious concern regarding them.

Table below shows the ocular signs in patients with rosacea in dermatology and ophthalmologic clinics.

Table 7: The ocular signs in patients with rosacea in dermatology and ophthalmologic clinics

Signs	Dermatology	Ophthalmology	p Value
Lid telangectasia/erythema	36(22.22%)	58(87.88%)	.000
Meibomiam gland dysfunction	37(22.83%)	41(62.12%)	.000
Anterior blepharitis	29(17.90%)	43(65.15%)	.000
Conjunctival hyperemia	34(20.98%)	37(56.06%)	.002
Superficial punctate keratitis	31(19.13%)	14(21.21%)	.605

Statistical analysis was done using T-test, Chi-square test as and when applicable and Pearson correlation, Spearman's rho was analysed. The correlation was considered significant with p value <0.05 level and <0.01 was considered highly significant.

Discussion

The prevalence of ocular complaints in patients with rosacea is estimated at 45% to 85% of cases. However none of these complaints is specific for the disease. In a study conducted by Ghanam V. C. et al and Quarterman et al demonstrated that patients with cutaneous rosacea are likely to have some degree of ocular involvement. [8,9] The age range most common for patients with rosacea, as reported in dermatological literature, is 30 to 50 years and ocular rosacea occurs a decade later than cutaneous rosacea. [10] The youngest reported patient in modern studies was 14 years. In our study none of patients was from pediatric age group and the youngest patient was 22 years old female patient with ocular involvement, and 18 yrs with only cutaneous manifestations.

Only Akpek et al has reported small male preponderance (F/M:1/1.3).11 In our study there was female preponderance in both groups i.e. in cutaneous rosacea without ocular involvement, there were 38 female patients and 17 male patients (F/M: 2.23/1), in comparison to group with ocular involvement with 33 female and 26 male patients (F/M:1.26/1). There is a widespread clinical impression that rosacea mainly affects fair skinned people of northern European descent. A Celtic origin seems to predispose strongly to the disease. Less heavily pigmented Caucasoid from Asia and Asia minor certainly do suffer from rosacea but less frequently than those with light complexions and with blue eyes. [12]

In this study we divided the total 114 patients into three categories on the basis of the skin color (pigmentation) with ability to burn and tan, and analyzed them. 49 (42.98%) patients were found in grade III (with fair color, patients belonging to cold climate and high altitude i.e. upper Himachal region), and 58 (50.37%) patients in grade IV (average color) respectively. Only a small number of 7 (6.14%) patients had grade V pigmentation (dark complexion). None of our patients were black (grade VI), and in grade I and grade II. The symptoms and signs were more in grade III patients in comparison with grade IV and V.

The subjective symptoms of ocular rosacea, which are easily overlooked, are more common than the objective signs. The most common symptoms of ocular rosacea are nonspecific, rather common complaints, and include a foreign body sensations, grittiness, burning sensations, itching, tearing, redness, and photophobia.[1,13] Red eyes are frequently present in rosacea and burning sensation particularly a common symptom. Frequently, the symptoms are out of proportion to the minimal eye findings. [11,14]

As far as signs of ocular rosacea are there, the ocular manifestations in rosacea range from minor to sever, non-sight threatening to sight threatening complications. Blepharitis, conjunctival injection,

tearing, burning, recurrent chalazia, corneal vascularization and scarring, corneal ulceration and thinning, corneal and scleral perforation, episcleritis and iritis have been reported to occur in rosacea. [4,11,13]

Duke-Elder[15]stated that a mild blepharitis or frequently a blepharo-conjunctivitis appears in the course of most cases of rosacea; spread to conjunctiva assuming diffuse hyperemic type and rarely nodular conjunctivitis; Wise reported that the most common ocular signs in patients with rosacea from ophthalmologic clinic was blepharitis (93%), but Jenkin et al [17]. has reported the incidence of blepharitis in 47% of their patients. In the present study we found frank picture of blepharitis in 68 eyes (57.62%), more in patients with papulopustular rosacea and with rhinophyma having scaling, crusting, papular and pustular lesions, and thickening of lid-borders as compared to patients with erythmato-telangietatic rosacea. In almost every case there was diffuse involvement of palpeberal conjunctiva, and the picture of blepharo-conjunctivitis was observed. Trichiasis was not observed in any of the patients. However early features of blepharitis such as the hyperemia of the lid-margins of varying degrees, and fine scales were present in patients with erythmato-telangietatic rosacea. Telangiectasia of the eyelid margin routinely occurs and tends tn be parallel the cutaneous flushing rather than the extent of skin erruptions. [11,17]

Starr PAJ [15] has reported involvement of corneas in 33%, with the earliest corneal involvement as infiltration in superficial stroma. Wise has reported corneal infilterates and neovascularization in 67% and the results of study by Jenkin et al [16 s 41%.

Episcleritis was noticed in 4.23%, and frank scleritis was present in 2.54%. Both episcleritis and scleritis were present exclusively in female patients. These findings are consistent to the findings reported previously. [4,13] Quarterman et al concluded in their study that Schirmer's test was normal at base line in rosacea patients, but it did raise significantly after 12 weeks of therapy with doxycycline. [9]

Zengin et al. [18] observed TBUT levels in patients with meibomian gland dysfunction (ocular rosacea), significantly different from those of patients without meibomian gland dysfunction (dermatologic rosacea). These findings were in accordance with the previous study by Mcculley and Sciallis, who found a decrease in TBUT in 26 patients with blepharitis, 9 (35%) of whom were subsequently found to have cutaneous rosacea. Subsequently, after the meibomian glands were expressed manually, normalization of TBUT occurred. [18] We in our study found that In 9 of these patients lid margin telangiectasia was prominent, tear break up time (TBUT) was affected in 8 patients, and conjunctival hyperemia was observed in 14 eyes of 7 patients of varying degrees.

The increased frequency of migraine among rosacea patients suggests that it might be part of more generalized vascular disorder. Berg M et al. [10] in their study, on 879 individuals, observed that the tendency to flush was more common among the patients with rosacea. This supports the theory that flushing is a primary pathogenetic process in rosacea.3 of our patients had migrane.

There was little difference at the onset between age of the ocular and cutaneous lesions, though the former were less common in the second decade and more between fifth and seventh decade. In majority of cases the disease began between 30-60 years. Similar results were observed by Borrie [20] and he was of the opinion that the disease appeared to last longer when the eyes were involved, must be largely due to the fact that the severity of the ocular symptoms demand constant treatment and if the treatment of the skin is continued, the relapses are generally diminished, but this does not be so with regard to the eyes.

Wise[16] reported that patients from dermatologic clinics much less eye involvement than those from ophthalmologic clinics. Similar observations were made by Ghanem et al.[8} In the present study, we also found that the ocular manifestations in patients attending the dermatologic clinics first, were less as compared to patients attending first ophthalmology clinics.

Conclusions

These results suggest that the major (and most easily observable) ocular problems in rosacea patients presenting either to ophthalmology or dermatology clinics are lid disease-related complaints. In the present study, statistical analysis indicated that among lid related signs, telangiectasia (p=0.000), meibomian gland dysfunction in the form of meibomitis, inspissations or plugging (p=0.001), ant blepharitis (p=0.002), were significantly higher in ophthalmology patients when compared with dermatology patients. Of the conjunctival signs including interpalpaberal hyperemia, papillary reaction, diffuse hyperemia, phlyctenulosis, granuloma, and conjunctival scarring, only the presence of inter palpeberal hyperemia (p=0.002) was found higher in ophthalmology patients. The corneal, scleral and episcleral signs did not reveal a statistically significant difference between groups.

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