Ocular Manifestations of Mucocutaneous Disorders: A Prospective Study

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Abstract: Background: Dermatologic disorders usually have manifestations which involve the eyelids, conjunctiva, and cornea. The ocular complications may often be the most devastating outcome for survivors of the acute reaction. The key to success to minimize possibility of visual impairment is the prevention of complications. Objectives: This study highlights the ocular manifestations of various mucocutaneous disorders. Materials and Methods: A prospective study was conducted in the Department of Ophthalmology in a medical college hospital, over a period of 1 year, on patients presenting with mucocutaneous syndromes who were referred from the Departments of Dermatology and Medicine. Patients with co-morbid diseases like diabetes and hypertension wherein ocular involvement is likely were excluded from the study. Results: In this study, 103 patients with mucocutaneous disorders were examined, of which 65 (63.1%) had ocular involvement. Majority of the patients belonged to the 21-30 years age group; with a male preponderance. The most common mucocutaneous syndrome in this study was herpes (37%), followed by leprosy (27%). Ocular involvement was seen in 69% patients with herpes and 79% patients with leprosy. In this study, periorbital vesicles was the most common ocular manifestation in herpes (20%), followed by blepharitis, conjunctivitis, corneal epithelial defect and keratitis; however, in leprosy, madarosis (16%) was the commonest ocular lesion. Economic blindness (visual acuity <6/60) was seen in 6 cases, and visual handicap (visual acuity <6/18) in 20 cases. The most common cause of visual impairment was due to corneal implications. Over the course of next three months, 19 patients (25%) developed various ocular complications like dry eye (10%), corneal scar (5%), corneal vascularisation (3%), trichiasis (3%), symblepharon (8%), and ankyloblepharon (15%). Conclusion: Careful ophthalmic examinations during the early period of the skin reaction and early detection of complications like trichiasis, epithelial surface disease, and secondary infection can improve the outcome.

Keywords: Mucocutaneous disorders; Ocular lesions; Stevens-Johnson syndrome; Herpes; Leprosy.

Introduction: Ocular involvement in mucocutaneous disorders has been described since 1922, following discovery of Stevens-Johnson syndrome. Many skin disorders have been described to affect the eyes. Also ocular involvement in certain mucocutaneous disorders may aid in its diagnosis. The reasons for this association include:
1. Genodermatosis often affects both skin and eyes because both originate from embryonic ectodermal layers.
2. Acquired dermatological disorders may affect the mucocutaneous tissue of periorbital region.
3. Systemic diseases may manifest as dermatologic diseases.

This study highlights the ocular manifestations of various mucocutaneous disorders.

**MATERIALS AND METHODS:** A prospective study was conducted in the Department of Ophthalmology in a medical college hospital, over a period of 1 year, on patients presenting with mucocutaneous syndromes who were referred from the Departments of Dermatology and Medicine. The diagnosis was established by the dermatologist prior to referring the patient to the ophthalmologist. Patients with co-morbid diseases like diabetes and hypertension wherein ocular involvement is likely were excluded from the study. A proforma was filled regarding demographic details, incidence and etiology of various ocular manifestations in mucocutaneous syndromes, and the data was analyzed using standard statistical methods.

**RESULTS:** In this study, 103 patients with mucocutaneous disorders were examined, of which 65 (63.1%) had ocular involvement. Majority of the patients belonged to the 21-30 years age group; with a male preponderance (male: female 4:1). The most common mucocutaneous syndrome in this study was herpes (37%), followed by leprosy (27%). Ocular involvement was seen in 69% patients with herpes and 79% patients with leprosy. There was no significant difference in the age distribution of patients of mucocutaneous disorders as compared to that of patients with ocular involvement.

In this study, periorbital vesicles was the most common ocular manifestation in herpes (20%), followed by blepharitis, conjunctivitis, corneal epithelial defect and keratitis; however, in leprosy, madarosis (16%) was the commonest ocular lesion. In Erythema Multiforme, Stevens-Johnson syndrome and Toxic Epidermal Necrolysis, blepharoconjunctivitis was the most common; while conjunctivitis was seen in Pemphigus.

The incidence of visual handicap in various diseases was analyzed. Economic blindness (visual acuity <6/60) was seen in 6 cases, and visual handicap (visual acuity <6/18) in 20 cases. The most common cause of visual impairment was due to corneal implications. Over the course of next three months, 19 patients (25%) developed various ocular complications like dry eye (10%), corneal scar (5%), corneal vascularisation (3%), trichiasis (3%), symblepharon (8%), and ankyloblepharon (15%).

**DISCUSSION:** Ocular involvement in mucocutaneous disorders is very common; the incidence of ocular involvement in our study being 65%. Majority of the patients were adults, with a male preponderance. However, there was no relation between age distribution and ocular involvement in mucocutaneous disorders.

Our study showed leprosy (79%) as the most common mucocutaneous disorder with ocular involvement, followed by herpes, Stevens-Johnson syndrome (SJS) and Erythema Multiforme. The commonest ocular manifestation was conjunctivitis (50%), followed by periorbital vesicles (33%), madarosis (25%), and blepharitis (31%). Corneal involvement in the form of
superficial punctuate keratitis, was common in ocular herpes. Visual impairment was common, and 25% of patients when followed for 3 months developed post-syndrome ocular sequel in all types of mucocutaneous disorders.

In a study by Salem RA et al., eyelid lesions were the most common ocular involvement in leprosy, with corneal opacity being the major cause of blindness. Since ocular involvement in leprosy occurs late in the course of the disease, blinding complications can be prevented by early diagnosis of the lesion with prompt treatment.

In a study by Puri et al., lid and adnexal findings (45.8%) were most common ocular involvement in herpes zoster ophthalmicus, followed by conjunctivitis (41.1%). Corneal complication was seen in 38.2% of cases. Ocular complications of herpes zoster ophthalmicus may lead to visual handicap, post-herpetic neuralgia and sometimes fatal cerebral complications.

In a study by Kompella VB et al., eyelid lesions were seen in 91.51% patients, conjunctival lesions in 96.84% and corneal complications in 97.89% in patients with SJS. Predominant involvement in SJS includes the oral mucosa and conjunctiva. Studies have shown conjunctival involvement varying from 49% to 81%. In the acute phase, local measures advocated include lubricants, removal of pseudomembranes and lysis of symblepharon using a glass rod or symblepharon ring. Additional measures include topical antibiotics to prevent secondary infections, topical steroids to avoid formation of scars and topical cycloplegics to relieve pain due to ciliary spasm, and photophobia. Bandage contact lens can be used to maintain the integrity of corneal epithelium. During this crucial time, meticulous local measures instituted would prevent long-term ocular complications. Surgical therapy at advanced stage only aims to correct structural defects of lids, conjunctiva and cornea. Corneal transplantation has poor prognosis with cicatricial ocular disorders. Amniotic membrane transplantation for ocular surface reconstruction is done for selected cases of Stevens-Johnson syndrome.

CONCLUSION: Though ocular manifestations are usually self-limiting in mucocutaneous disorders, they may be severe in some patients resulting in visual handicap. Thus early ophthalmological examination and treatment may go a long way in preventing complications and sequel in mucocutaneous disorders.

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Fig. 1: Active corneal and conjunctival inflammation with symblepharon formation in Stevens-Johnson syndrome

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