Meibomian Gland Dysfunction (MGD): A Common Eyelid Disorder and Usually Missed by Ophthalmologists in their Clinical Practice

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ABSTRACT

Purpose: To find out the causes of mis-diagnosis of meibomian gland dysfunction (MGD) and to evaluate the outcome of its management.

Patients and Methods: A randomized clinical trial was conducted at Sahabuddin Medical college Hospital, Dhaka and United hospital Dhaka and private chamber, Dhaka from January, 2011 to March, 2012. Total 400 cases were selected randomly irrespective of sex. Patient attended with mild discomfort were examined under slit lamp properly. Diagnosis was confirmed by history and slit lamp examination of eyelids, conjunctiva and cornea. Pregnant and lactating mother were excluded from this study. All patients were treated as prefixed schedule: counseling, lid hygiene, systemic antibiotics, topical antibiotics, topical steroids and tear substitutes. Each patient was followed up after two weeks, four weeks, six weeks, three months and six months from the starting of the treatment.

Results: Out of 400 subjects 220 (55%) were dropped out due to lack of or irregular follow up. After 6 months of follow up 80% (144/180) patient were cured from their symptoms. 55% and 15% patient had history of previous consultation with ophthalmologist and physicians respectively. Among them 60% patient had mal-diagnosis as well as the treatment. Follow up performance were 78%, 62%, 50%, 38% & 20% after two weeks, four weeks, six weeks, three months and six months respectively. 65% patients had irregular follow up.

Conclusion: Along with patient education and encouragement, proper treatment and appropriate counseling with regular follow up MGD can be successfully controlled in most patients to improve their overall quality of life. To avoid misdiagnosis each patient should properly be examined with slit lamp and the lid margin properly be evaluated.

Key words: Meibomian gland dysfunction (MGD), slit lamp biomicroscopic examination, lid margin and counseling.

Introduction

Lid inflammation or blepharitits, a common problem in ophthalmic practice, is also a frequent cause for visits to physicians. In general practice, 2.3% visits were for ocular problems, 70% of which were diagnosed as bacterial conjunctivitis, allergic conjunctivitis, meibomian cyst or blepharitis.

MGD is a major form of blepharitis, is an extremely common, yet often overlooked chronic condition of the posterior eyelids. Patient complaints of nonspecific symptoms like mild discomfort with burning, irritation, itching, redness, photophobia and fluctuation of vision. Lid margin is round & thickened, erythema, hyperkeratinization, telangiectasia and vascularization in MGD. Sometimes there is notching and seborrhic scales on the lid margin. Specific treatments are available that considerably alleviate this condition.

Therefore it is important to recognize its presence in a patient complaining of dry eye like symptoms. Lacrimal insufficiency and dermatologic conditions are often concomitant and must be identified and address in concert with the treatment of meibomian gland disease for effective therapy.

Patients and Methods

A randomized clinical trial was conducted at Sahabuddin Medical college Hospital, United Hospita Dhaka & private chambers, Dhaka from January, 2010 to March, 2011. Total 400 cases were selected randomly irrespective of sex. Patient came with nonspecific symptoms like mild discomfort with burning, irritation, itching, redness, photophobia and fluctuation of vision. Lid margin is round & thickened, erythema, hyperkeratinization, telangiectasia and vascularization in MGD. Sometimes there is notching and seborrhic scales on the lid margin. Specific treatments are available that considerably alleviate this condition.

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On pressure to lid margin turbid, foamy, granular or thick tooth-paste likes secretion came out. Collection of Meibomian froth on the angle of the canthus is the hallmark of MGD. Sometimes number of meibomian glands reduced and displacement of gland orifices with some atrophic changes. Diagnosis of MGD is based on eye examination only; no investigation is needed at all. Informed consent was taken from each patient. Pregnant and lactating mother were excluded from this study. 400 patients were selected for this study. Due to irregular follow up and failure to follow up, a large number of patients dropped out (220 Patient). Out of five follow up visits, Patient who were able to attend at least three visits were ultimately included in this study i.e. only 45% (180/400) of patients.

All patients were treated as prefixed treatment schedule and consisting four steps e.g. (i). Counseling (ii). Lid hygiene (iii). Medication: systemic antibiotics, topical antibiotics with steroids and tear substitutes and (iv). Follow up.

1. Counseling: All patients were asked that MGD is a chronic condition and that the lid hygiene should become a part of the patient daily routine.

2. Lid hygiene: It consists of three steps:

1st step - Warm compresses: a warm washcloth is placed on the closed lids. As it cools, it is reheated in warm water and reapplied. This regimen is continued for about 10 minutes.

2nd step- Lid massage: this consists of pushing on the meibomian gland at the lid margin with a finger tip in a rotatory action towards the lid margin to express the meibomian gland contents, which have melted during the warm compresses step.

3rd step Lid margin (LM) scrubs: lid scrubs are passed along the lid margin to remove deposits and the abnormal oily secretions from the lids. A weak solution of baby shampoo (25% baby shampoos) applied with a cotton tip applicator.

3. Medication: Systemic antibiotics

Cap. Doxycycline, 100 mg; one capsule twice daily for one week and one capsule daily for six weeks. Topical antibiotics with weak steroid: three times daily for 6 weeks.Tear substitutes: four times daily for several months. Antibiotic ointment: Tetracycline or Steroid-antibiotic combination e.g. fluorometholone with gentamicine at bed time daily for 6 weeks.

4. Follows up: Each patient was followed up after two weeks, four weeks, six weeks, three months and six months from the starting of the treatment.

Results

Age of the patient was 55.0 +14.3 years (range 16-87 years). Male were 103 and female were 77. Sixty percent of patients were above 50 years of age. Out of 400 subjects 220 (55%) were dropped out due to lack of or irregular follow up. At the end of follow up 80% patient were cured from their symptoms. 55% and 15% patient had history of previous consultation with ophthalmologist and physicians respectively. 60% patient had mal-diagnosis as well as the treatment. Follow up performance were 78%, 62%, 50%, 38% & 20% after two weeks, four weeks, six weeks, three months and six months respectively. 65% patients had irregular follow up.

Discussion

Meibomian glands secrete lipids into the tear film, forming a superficial lipid layer that stabilizes it. Abnormalities in the meibomian glands cause instability in the tear film, resulting in either chronic irritation of eye, damage to the ocular surface epithelium. MGD is an extremely common cause of blepharitis. MGD can be defined as functional abnormality of the meibomian glands, resulting in unstable tear film, damage to the ocular surface epithelium, and Chronic irritative symptoms. It is caused most often by an obstruction of the meibomian glands secondary to hyperkeratinization of the duct epithelium and plugging with solidified secretions. These developments lead to a compromised tear film lipid layer with increased evaporation, increased tear osmolarity, and decreased tear break-up time. MGD causes increased evaporation of tears and has been identified as one of the major causes of dry eye syndrome. MGD is frequently associated with lacrimal insufficiency. Despite its clinical importance, however, there are no established diagnostic criteria for MGD. Biomicroscopic changes in the lid margin and gland orifices, expression of meibum and tear evaporation measurement have all been used in its diagnosis. In this study diagnosis is based only on history and slit lamp biomicroscopic findings of lid margin, conjunctiva and cornea, as because these changes not only due to MGD. In many epidemiologic studies on dry eye syndromes, dry eye has been diagnosed solely on the basis of subjective symptoms. In a recent epidemiological study by Lin et al in Taiwan, MGD was noted in 828 of 1361 subjects (60.8%) 65 years of age and this was comparable with this current study.
In this study males were more suffered than females, and this was supported by many investigators. Several studies have suggested an association between sex hormones and morphologic changes or secretion of lipid profiles of meibomian glands. Androgen deficiency has been shown to cause changes in the meibomian gland. In this study 400 subjects were selected randomly but at the end of the study 220 (55%) subjects were dropped due to irregular or failure of follow up. So, 45% (180) of patients were able to be included in this study. Out of 180 patients 80% (144) were cured from their complaints totally and rest were partially. Eighty percent of patients had history of consultation with ophthalmologist or physicians and 60% patients had misdiagnosis as well as treatment. So, poor patient compliant and misdiagnosis were two important causes of improper treatment of MGD.

Conclusion

Lid inflammation is a problem that is commonly encountered in a general ophthalmic practice. The severity of symptoms falls into a range of mild ocular irritation to severe discomfort and reduced vision. It is therefore important to understand the alterations in the normal physiology of the meibomian glands that results in lid inflammation in order to target therapies effectively. Along with patient education and encouragement, proper treatment, proper counseling with regular follow up MGD can be successfully controlled in most patients to improve their overall quality of life. To avoid misdiagnosis each patient should properly be examined with slit lamp and the lid margin properly be evaluated.

References