

Assessment of Correlation of Meiboscale with Symptom Score Index and Meibomian Gland Dysfunction Sign Score

Received: 25 October 2022, **Revised:** 24 November 2022, **Accepted:** 28 December 2022

¹Dr. Renuka Sarwate, ²Dr. Anjali Patil, ³Dr. Abhiraj Mane

¹Senior Resident, ²Associate Professor, ³Resident, Department of Ophthalmology, Krishna Institute of Medical Sciences (Deemed to be University) (KIMS), Karad, Maharashtra, India

Corresponding author: Dr. Abhiraj Mane, Resident, Department of Ophthalmology, Krishna Institute of Medical Sciences (Deemed to be University) (KIMS), Karad, Maharashtra, India Email: am65837@gmail.com

Key words

Meiboscale, Meibomian gland disease, ocular

Abstract

Background:The most frequent mechanism for MGD is a low delivery state marked by gland obstruction. The present study was conducted to assess association of Meiboscale with symptom score and meibomian gland dysfunction sign score.

Materials & Methods: sixty subjects having meibomian gland malfunction of both sexes underwent a complete visual assessment. The MGD sign value was estimated in both eyes through the sum of 6 grading systems. Association among OSDI score, sign score and MGL score based on Meiboscale was evaluated.

Results: Out of sixty subjects, men were 38 whereas women were 22. The average ocular surface disease index (OSDI) was 40.3, Meibomian gland dysfunction (MGD) was 7.41 and Meiboscale MGL score was 1.92. There was strong correlation of MGL score with MGD sign score ($P < 0.05$). There was no correlation between MGL and OSDI and OSDI with MGD sign score ($P > 0.05$).

Conclusion: Meiboscale can be used for reliable assessment and grading of MGD, and has clinical utility similar to the sum of six MGD sign scores.

1. Introduction

Meibomian gland dysfunction occurs to be a chronic disorder of the meibomian glands that is characterised by alterations in the glandular discharge as well as terminal duct occlusion. Although it can be present in up to eighty six percent of individuals with dry eye condition, it is frequently asymptomatic, therefore goes undiagnosed. Asymptomatic sufferers must be identified as soon as possible so they can get treated right away.¹ A low delivery status marked by gland blockage is the most frequent cause of

MGD.² Epithelial hyperkeratinization, that causes duct occlusion, meibum stasis, cystic dilation, as well as eventually disuse acinar atrophy and gland dropout, is thought to represent the underlying pathogenesis.³ Recent research has expanded on this concept and identifies aberrant meibocytes as a significant factor in MGD.

Pathophysiologic analyses assessing the effects of intrinsic as well as extrinsic MGD risk variables on meibocyte development and renewal provide evidence for the involvement of the meibocyte in MGD.⁴

MGD can be evaluated using the Ocular Surface Disease Index, the 6 MGD sign ratings, as well as the upgraded Meiboscale. A thorough analysis of the data did not turn up any proof that there is a relationship among the 3 systems, even if they can aid in the classification of MGD.⁵ The goal of the current research was to evaluate the relationship between the Meiboscale symptom score as well as the Meibomian Gland Dysfunction Sign score.

2. Materials & Methods

The current research enrolled sixty subjects of meibomian gland dysfunction of both sexes.

Everyone submitted their written consent for the being a part of the trial.

Information like name, age, sex etc. was documented. Everyone underwent complete visual assessment. The MGD sign score was estimated in both eyes through the totalling of 6 grading systems. They underwent imaging of the upper as well as lower eyelids by specular microscope. The region of meibomian gland loss was clinically evaluated as well as scored by Meiboscale photographic card. Association among OSDI score, sign score and MGL score based on Meiboscale was evaluated. Information thus gathered was subjected to statistical analysis. P value of less than 0.05 was considered remarkable.

3. Results

Table I Distribution of patients

Total- 60		
Gender	Males	Females
Number	38	22

Table I shows that out of 60 patients, males were 38 and females were 22.

Table II Assessment of parameters

Parameters	Mean	SD
Ocular surface disease index (OSDI)	40.3	5.2
Meibomian gland dysfunction (MGD)	7.41	1.5
Meiboscale MGL score	1.92	0.82

Table II, graph I shows that mean ocular surface disease index (OSDI) was 40.3,

Meibomian gland dysfunction (MGD) was 7.41 and Meiboscale MGL score was 1.92.

Graph I: Assessment of parameters

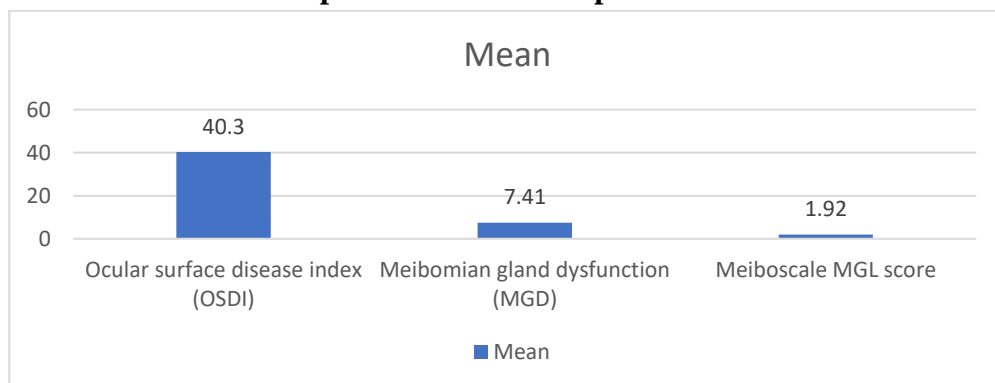


Table III Correlation of OSDI, sign score, and MGL score

Comparison		Spearman's rho	P value
MGL score	MGD sign score	0.82	0.01
	OSDI	0.35	0.09
OSDI	MGD sign score	0.43	0.08

Table III shows that there was strong correlation of MGL score with MGD sign score ($P < 0.05$). There was no correlation

between MGL and OSDI and OSDI with MGD sign score ($P > 0.05$).

4. Discussion

It is now clear that other components formerly linked to MGD, like hormones, systemic & topical drugs, diet, as well as ocular microbiota, could also alter meibocytes as a result of the developing concept that meibocyte dysfunction underpins MGD.⁶ Meibomian glands may also be diminished, missing, or substituted in a variety of congenital illnesses, as well as affected by external influences including the use of contact lenses.⁷ The goal of the current research was to assess the relationship between Meiboscale symptom score as well as MGD sign score.

Among sixty cases, we discovered that thirty eight of them comprised men whereas twenty two comprised women.

The average age of individuals having MGD, according to Robin et al.⁸, was 56.32 years. According to Brooks and Gupta⁹, the mean Meiboscale value for patients of thirty five years of age was 0.89. They haven't yet, nevertheless, given information regarding those who already suffer from MGD.

Various clinical manifestations of MGD comprise gland dropout, modified secretions, as well as alterations in eyelid shape. Slit lamp examination is used to evaluate morphological alterations, which can involve meibomian orifice plugging, foaminess at the edge of the eyelids,

hyperemia/telangiectasias, as well as variations in orifice location relative to the muco-cutaneous junction. By pressing on the eyelid borders as well as grading the expressibility and texture of the meibum, meibomian gland fluids are evaluated. In contrast to MGD, where meibum tends to take on a much more opaque as well as viscous-like appearance which is challenging to express, normal meibum is transparent and simple to expel. Transillumination from everted eyelids or, more precisely, infrared photography can be used to recognise meibomian gland dropout. Not every person possesses every clinical trait, and they are frequently inconsistent.

The MGL score and MGD sign score had a significant association. Numerous interrelated mechanisms, such as greater tear evaporation, hyperosmolarity, proinflammatory agents within tears, as well as inadequate lubrication between the globe's lids as well as surface, all contribute to ocular surface damage¹². These could cause irritation of the eyelids as well as ocular surface. The signs and symptoms of MGD are regarded to be a major factor in evaporative dry eye, which shares a lot of these ophthalmic manifestations with dry eye illness. Lemp et al.¹⁴ showed that among two hundred and ninety nine people having

aqueous and evaporative dry eye, those having aqueous or evaporative dry eye had more manifestations of dry eye than healthy controls. Nsihant et al. in 2015 revealed numerically noteworthy, although not clinically considerable, relationships among MGL score as well as OSDI score and among OSDI and sign score. Both numerically & clinically considerable correlations were found among MGL & MGD sign scores. A remarkable effect size was found via the J-T test.

The drawback of this study occurs to be it's smaller sample size.

5. Conclusion

Authors found that Meiboscale can be used for reliable assessment and grading of MGD, and has clinical utility similar to the sum of six MGD sign scores.

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