بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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Corneal topographic changes after correction of ptosis by levator muscle resection measured by Scheimpflug imaging

Thesis

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Islam Hamdi

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List of Abbreviations

Abb.	Full term
AL	Anterior layer
BCVA	Best corrected visual acuity
CCT	Central corneal thickness
CL	Contact lens
CYL	Cylinder
HS	Highly significant
ITL	Inter muscular ligament
LPM	Lamina proporia mucosae
LPS	Levator palpebrae superioris
MM	Müller's muscle
MRD	Marginal reflex Distance
NS	Non-significant
OOM	Orbicularis oculi muscle
OS	Orbital septum
PL	Posterior layer
S	Significant
SMFAT	Submascular fibroadipose tissue
Ta	Tarsus
UCVA	Uncorrected visual acuity
WL	Whitnall's ligament

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INTRODUCTION

The cornea is a transparent avascular connective tissue that acts as the primary infection and structural barrier of the eye. Together with the overlying tear film, it also provides a proper anterior refractive surface for the eye. Its clarity is the result of many factors including the structural anatomy and physiology of its cellular components ***(DelMonte and Kim, 2011)***

Ptosis is the drooping or sagging of an area of the body. Eyelid ptosis is an abnormally low position of the upper lid, which can affect one or both of the eyelids, can be divided into several categories but to simplify is broken down into two categories: congenital or acquired ***(Finsterer, 2003)***.

Imaging of the cornea and anterior segment has advanced significantly in recent years allowing a greater understanding of the structure and refractive function of the front of the eye. An important class of devices is the Scheimpflug camera-based systems, which permit detailed mapping of the anterior and posterior corneal surfaces, the measurement of corneal pachymetry and a number of other anterior chamber parameters. Applications include the diagnosis of anterior segment pathology with monitoring of disease progression, pre- and post-refractive surgery assessment and research. ***(Corbett et al., 2019)***

Eyelid ptosis may be associated with visual and functional impairment and cosmetic problems. Treatment of ptosis is indicated where vision is impaired or where there is an undesired appearance. The vision can be impaired not only when the upper eyelid covers the pupil but even for refractive reasons ***(Savino et al., 2016).***

Patients who have undergone upper eyelid surgery occasionally complain of blurred vision in the operated eye ***(Shao et al., 2004)***

Corneal astigmatism can occur as a result of unequal curvature along the two principal meridia of the anterior cornea (known as corneal astigmatism). Astigmatism is a commonly encountered refractive error, accounting for about 13 per cent of the refractive errors of the human eye ***(Read et al., 2007)***

Surgical repositioning of the eyelid increased pressure vectors on the cornea and the globe from above, thereby inducing with-the-rule astigmatism (i.e., corneal curvature greatest at the 90-degree axis ***(Youssef et al., 2020).***

Surgical procedures designed to correct ptosis should be directed toward correction of the underlying pathologic condition. The 3 categories of surgical procedures most commonly used in ptosis repair are external (transcutaneous) levator advancement, internal (transconjunctival) levator/ tarsus/ Müller muscle resection approaches and frontalis muscle suspensions ***(Laplant et al., 2020).***

The present study therefore investigates whether different upper eyelid surgical strategies could affect changes in corneal topography.

AIM OF THE WORK

To evaluate the corneal topographic changes after levator resection surgery in patients affected by congenital or acquired ptosis.