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التوثيق الالكتروني والميكروفيلم

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قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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تحفظ هذه الأقراص المدمجة بعيدا عن الغبار

Analysis of Ocular Cyclotorsion in Lying Position after Peribulbar Block

Thesis

Submitted for Partial Fulfillment
of Master Degree in **Ophthalmology**

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Jack Mikhael Zaki Mikhael

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List of Abbreviations

Abb.	Full term
HCL	*Hydrochloride*
HS	*Higly significant*
IO	*Inferior Oblique muscle*
IOLs	*Intraocular Lenses*
IR	*Inferior Rectus muscle*
LA	*Local Anaethesia*
LASIK	*Laser In Situ Keratomileusis*
NS	*Non Significant*
OR	*Odds Ratio*
PPV	*Positive Predictive Value*
PSD	*Pattern Standard Deviation*
ROC	*Receiver Operating Characteristic Curve*
S	*Significant*
SD	*Standart Deviation*
SO	*Superipr Oblique muscle*
SPSS	*Statistical Package for Social Science*
SR	*Superior Rectus muscle*

INTRODUCTION

Cyclotorsions are movements of cyclotorsion of the eyes. The cyclotorsion of the human eye occurs with movement of the head and body, changing the original position of the corneal axis. A significant different range of cyclotorsion between a sitting and a supine position was previously reported as varying from 2 to 7 degrees. The measurement of the rotation raised concern among refractive and cataract surgeons especially regarding astigmatism correction where a mistake in the position of the axis will lead to a significant impact in patients visual acuity ***(Kim and Joo, 2008).***

Peribulbar block is one of the techniques for anaesthesia for cataract surgery and is one of the most popular throughout the world because it is a safe procedure and it is able to warrant a cataract surgery with no pain ***(Clausel et al., 2008).***

The objective is not only the analgesia but also ocular akinesia during the surgical procedure. It is believed that after the peribulbar block, the torsional motion of the eye suffers distortions, which could result in consequences if not evaluated prior to surgery procedure ***(Chang, 2008).***

Toric intraocular lenses (IOLs) are spherocylinderical and correct for corneal astigamatism after cataract surgery. The orientation of the toric IOL in the capsular bag is critical because misaligment negates the desired effect of correcting astigmatism. If, for instance, a toric IOL rotates 30 degrees off

the prescribed axis of alignment, there is virtually no correction of astigmatism; if it rotates more than 45 degrees from the prescribed axis, the IOL augments the preoperative ocular cylinder ***(Novis, 2000).***

Aim of the Work

The aim of this prospective study is to determine the amount of ocular cyclotorsion in supine position after peribulbar block, to avoid misalignment of the toric IOL which negates the desired effect of correcting astigmatism.

Chapter 1

APPLIED ANATOMY

In humans there are three pairs of extraocular muscles in each orbit: a pair of horizontal rectus muscles (medial and lateral), a pair of vertical rectus muscles (superior and inferior), and a pair of oblique muscles (superior and inferior). The four rectus muscles come from the depth of the orbit and are attached to the sclera anterior to the equator near the cornea. The two oblique muscles approach the globe from in front, at the medial side of the orbit, and continue obliquely and laterally to insert on the sclera posterior to the equator on the temporal part of the globe ***(Zoth, 1905).***

1- The superior rectus muscle:

The superior rectus muscle (SR) arises from the upper part of the annular tendon superolateral to the optic foramen and its origin is attached to the dural sheath of the optic nerve The muscle passess forward and somewhat laterally beneath the levator muscle, at angle of 23-25 degree with aneroposterior axis as shown in (Figure 1). It pierces tenon's capsule and is inserted into the sclera about 7.7 mm posterior to the limbus by a tendon 5.8 mm long. The line of insertion is slightly curved and oblique. The fascial sheath of the superior rectus muscle and that of the levator palpebrae superioris muscle are connected by a band of connective tissue. A further slip of

fascia is also connected to the superior fornix of the conjunctiva ***(Wright, 2007).***

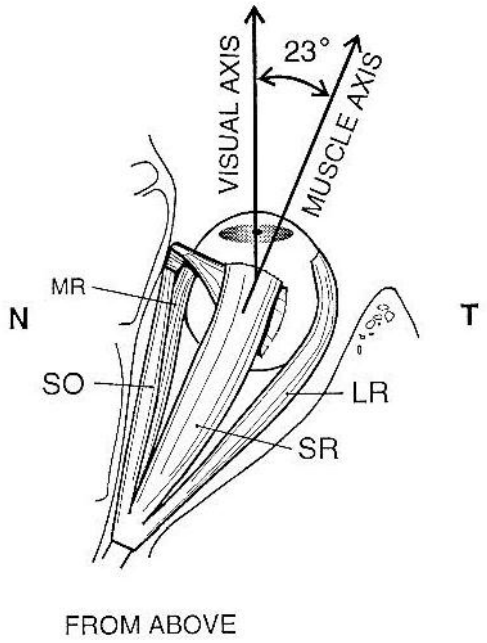

Fig. (1): Anatomy of the superior rectus muscle ***(Wright, 2007).***

Action:

The primary action of the superior rectus is elevation, which increases with aduction and becomes nil in full adduction. Subsidiary actions are adduction and intorsion. These subsidiary actions are dependent on eye position. If the eye is abducted 23 degree, the muscle and visual axis will be in line. In this positionit has no subsidiary actions and can only act as an elevator. If the eye is adduced 67 degree, the angle between the muscle and visual axes will be 90 degree. In this position the superior rectus acts only as an intorter ***(Wright et al., 2006).***