Effect of Argon Laser Trabeculoplasty on Subsequent Trabeculectomy

Thesis

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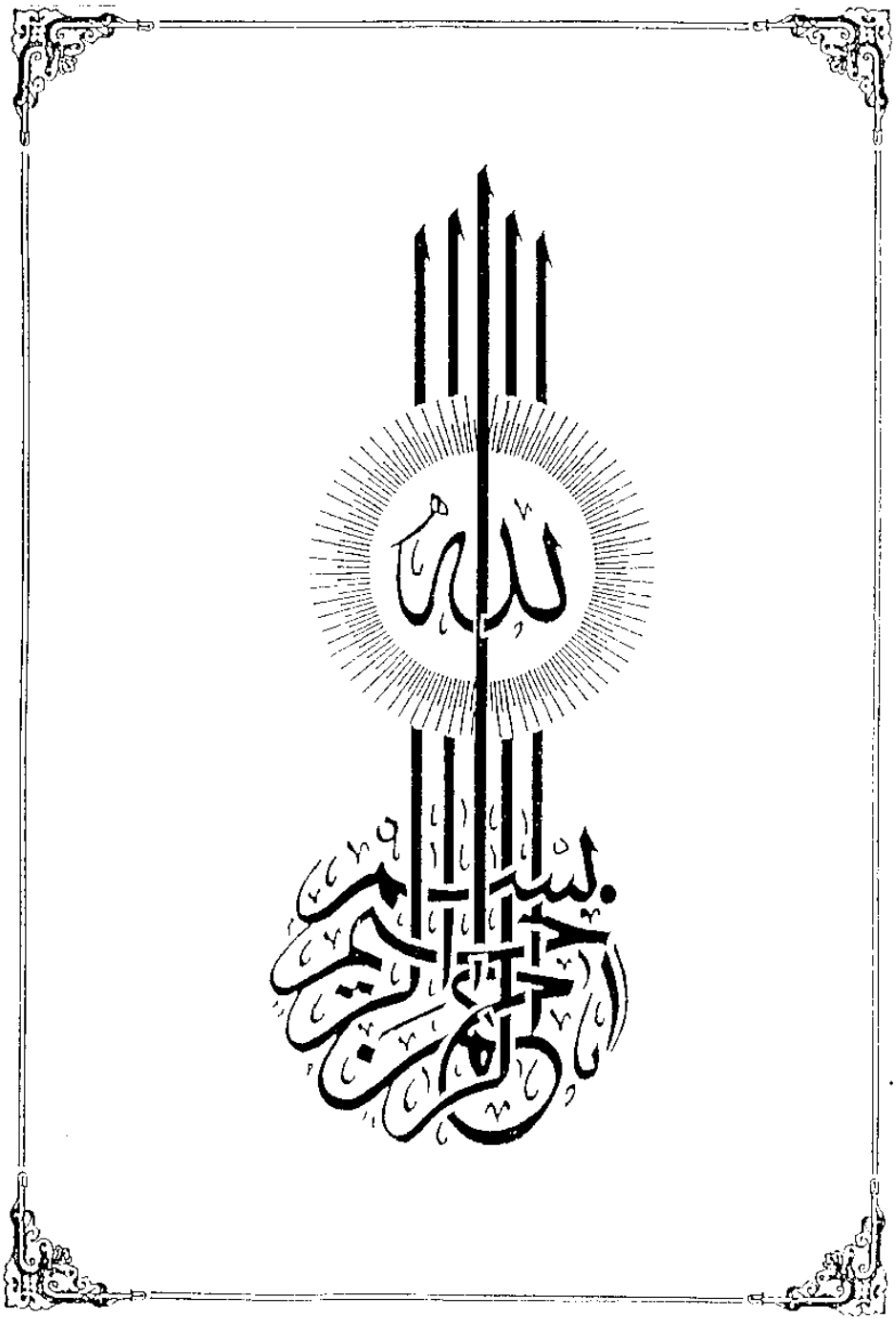

To My Parents

To My Wife

To My Children
Mahmoud, Ahmed and Salma

List of abbreviations

TM	Trabecular meshwork.
AM	Electron microscope.
ALT	Argon laser trabeculoplasty.
IOP	Intraocular pressure.
POAG	Primary open-angle glaucoma.
PAS	Peripheral anterior synechiae
CME	Cystoid macular edema.
ATM	Anterior trabecular meshwork.
PTM	Posterior trabecular meshwork.

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Introduction

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Despite the current modalities of medical and surgical therapy, patients still become blind from glaucoma, apparently due to the insufficient pressure reduction.

Argon laser trabeculoplasty (ALT) has been successful in treating cases with open-angle glaucoma when maximal tolerated medical therapy had been ineffective (Ticho and Nesher, 1989). It is clear that ALT reduces the need for invasive surgery (Thomas et al., 1982) or at least postpone it (Gilbert et al., 1986). The success rate of ALT as published in literature ranged between 46% and 94% over 5 years of follow-up (Ticho and Nesher, 1989). While these results are encouraging, a significant number of patients still require filtration surgery following ALT (Schoenleber et al., 1987).

The effect of ALT on subsequent filtration surgery is controversial. Some authors found no recognized difference in the response to filtration surgery following ALT (Schoenleber et al., 1987). While Perkins et al., (1986) found that the success rate of filtration surgery without prior ALT is higher than with prior ALT.

Post-laser inflammatory changes can have a devastating effect on filtration surgery as evidenced by the low success rate of filtration surgery in glaucoma due to uveitis (Krupin et al., 1982). Alteration of structural

anatomy with damage to the trabecular meshwork due to ALT may adversely affect the outcome of filtration surgery (Schoenleber et al., 1987).

Electron microscopic studies of trabeculectomy specimens from eyes that received laser photocoagulation of trabecular meshwork prior to trabeculectomy have shown several changes that may account for possible failure of subsequent filtration surgery.

Aim of the work

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The aim of this work was to study the possible effects of argon laser trabeculoplasty on the subsequent filtering surgery that may be required in case of failure of laser procedure. To demonstrate that effect it was our aim to compare the success rate and complications of initial filtering surgery and that following argon laser trabeculopasty. The study included histopathological examination (in selected cases) of trabecular meshwork (TM) using light and electron microscopes.

Review of Literature