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التوثيق الالكتروني والميكروفيلم



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لم ترد بالأصل



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Erbium : YAG Laser Sclerostomy in Glaucoma

Thesis

Submitted for partial fulfillment of MD degree in
Ophthalmology

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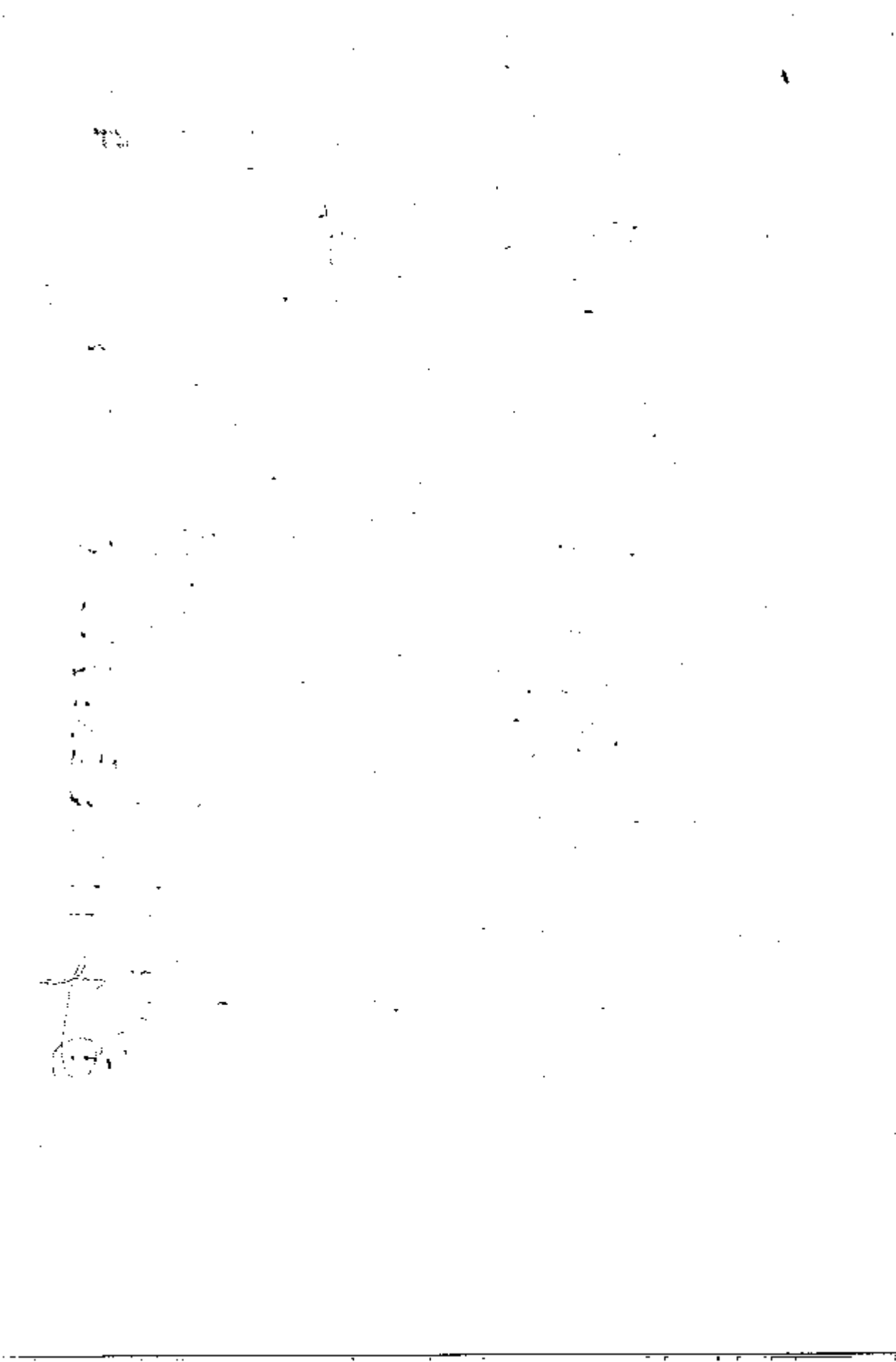
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Abstract

Key Words: Erbium: YAG laser, Glaucoma Laser, Laser Sclerostomy.

There are new multiple lasers, delivery systems and techniques that are common in glaucoma diagnostic and therapy. Erbium: YAG (solid state laser) with a wavelength $2.94\text{ }\mu\text{m}$ used to perform ab externo laser sclerostomy. A total number of 142 patients divided into POAG (n=61), neovascular glaucoma (n=20) and secondary aphakic and pseudophakic (n=61). The first group had 84.93% success rate for POAG and 40% for absolute POAG. The second group had 45.85% success rate. The third group had 63.41% success rate for aphakic and 59.4% for pseudophakic.



Ab-externo Erbium: YAG laser Sclerostomy in Glaucoma

Thesis

*Submitted For Partial Fulfillment Of
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By

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2000

The block contains two handwritten signatures. On the left is a signature that appears to be 'M. Y. Saif'. On the right is a signature that appears to be 'I. Gawdat'. There are also some faint, illegible handwritten marks between the two signatures.

Introduction

Recent years have seen unprecedented growth in diagnosis, therapy, laser and surgical technique in glaucoma.

There are now multiple lasers, delivery systems, and techniques that are common in glaucoma diagnostics and surgery. The most popular techniques in glaucoma laser surgery are extensively documented and have changed little since the late 1980's. These include iridectomy, iridotomy, trabeculoplasty, goniotomy, and trabeculectomy flap suture lysis. In recent years (1998), a large number of new glaucoma laser procedures have been proposed including goniotomy, endocyclophotocoagulation, cyclophotocoagulation, trabecular ablation, selective laser trabeculoplasty, bleb remodeling, bleb reopering, hyaloidotomy, and sphincterotomy. (Berlin MS, 1998)

Principle

Laser sclerostomy/sclerectomy has been attempted with multiple lasers. Laser sclerostomy in rabbit models has been found to be more successful than conventional sclerostomy surgical techniques which involve more tissue manipulation and are thus more prone to scar. It is therefore thought that laser sclerostomy may offer better results especially in eyes that have undergone prior surgical intervention (Pfeiffer M, 1993)

Sclerostomies have been successfully created with the Ho:YAG (THC:YAG) laser, the Nd:YAG laser, the 810-nm diode laser, the 308 nm XeCl excimer laser, the Er:YAG laser, and more recently with the Nd:YLF laser, the 193-nm argon fluoride excimer laser, the CW-dye laser (continuous wave- dye laser), and the CTE:YAG laser. Laser energy can be delivered ab externo, under a conjunctival flap, ab interno through a paracentesis, or ab interno through a goniotomy (Larner M.A. et al 1992)

Aim Of The Work

The aim of this work is to study the efficacy, economy and safety of using the Erbium: YAG laser Sclerostomy as it presents a new modality in controlling some cases of refractory glaucoma resistant to the usual measures.

Material

30 cases of glaucoma divided into 3 groups will be included in the study:

- Group I : Cases of POAG not responding to maximum tolerated local hypotensives
- Group II : Neovascular secondary glaucoma
- Group III : Aphakic and pseudophakic glaucoma

The above mentioned cases will be examined generally and locally. The external local examination will include: vision, IOP by Applanation or Shultz. Detailed slit lamp examination of the anterior segment with evaluation of the angle gonioscopically, drawing of the new vessels in the iris in cases of neovascular glaucoma and the cause of increased IOP in aphakia and pseudophakia. Fundus examination with special attention to the optic disc will be done for the cases if the media are clear. Field of vision will be done for the suitable cases.

Preparations of the cases for surgery will be carried out as usual. Anaesthesia will be local except in children in whom the general anaesthesia will be necessary

In the post operative care will be done for all patient by the following scheme

One day, One week, Every 2 weeks, then every month for 4 month, then every 3 months for one year with a minimum period of observation for 6 months

The following cases will be excluded from the study

1. COAG with shallow AC
2. Secondary glaucoma with fibrosis of the conjunctiva
3. Secondary glaucoma due to anterior segment pathology e.g. ant. staphyloma

Methods

The erbium: YAG laser with a wavelength $2.94 \mu\text{m}$ is a solid-state laser that uses erbium-aluminum-garnet host and the erbium as a dopant within the crystal.

Ab-Externo technique will be used with a sclerostomy probe through a conjunctival puncture to result in an external fistula between the anterior chamber and subconjunctival space

The study will include

- Introduction
- Aim of the work
- Review of the literature with the following items:
 - o Basics of laser and tissue interaction
 - o Erbium: YAG laser in Ophthalmology
 - o Techniques of Erbium: YAG laser Sclerostomy
 - o Comparative study of Erbium: YAG laser versus other techniques
 - o Complications of use of Erbium: YAG laser
 - o Future aspects in glaucoma surgery
- Material and Methods
- Results
- Discussion
- Conclusion
- Summary
- References



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