Argon laser iridectomy has become a widely accepted highly successful procedure in the treatment of angle-closure glaucoma It has been found to be safe and effective. It is easily and conveniently performed on an out-patient basis. Now, it can replace the surgical iridectomy in relieving pupillary block.

In this study, we reviewed the literature about the anatomy of the iris and anatomy of the angle of the anterior chamber. We reviewed also, the pathophysiology of the primary angle-closure glaucoma. We lined out the laser biophysics, the argon laser system and effects of laser on ocular tissues.

Laser peripheral iridectomy has also been discussed : its aim, indications, contraindications, advantages, disadvantages, different techniques and complications.

Our aim in this study was to evaluate the argon laser in performing peripherl iridectomy in cases of primary narrow angle glaucoma and to evaluate different techniques used in performing laser peripheral iridectomy.

50 eyes of 38 patients having primary narrow angle glaucoma were included in this study. They were subjected to argon laser peripheral iridectomy.

We had 3 eyes with history of acute attack (s). 18 eyes with chronic angle-closure glaucoma and 29 eyes either fellow eyes or eyes with narrow occuldable angles.

Considering the intraocular pressure control, our success rate was 98% with a mean drop of 7.16 mmHg which is statistically significant.

18 eyes were perforated by the drum head technique and 31 eyes were perforated by the chipping away technique. We found that, with the drum head techique, we needed less laser power, less number of shots and consequently less energy although, we needed a mean sessions more than with the chipping away technique.

It was found that with Abraham lens, we needed less laser power, less number of shots, less energy and less number of sessions.

Perforation in a crypt was found to be insignificantly different from perforation outside crypt. But, the number of shots used for penetration was less (although statistically non significant) inside a crypt than outside.

The encountered complications were few manageable short term complications. They were pupillary distortion (30%), closure or narrowing of the iridectomy hole requiring reopening (14%) localized lens burns (10%) and corneal burns (2%).The most difficult complication was the failure to penetrate the iris.

CONCLUSION

We can conclude that argon laser has the ability to create patent iridectomies in an out-patient sittting. When it is used as an initial procedure in the treatment of angle closure glaucoma, patients are not exposed to the potential complications

associated with surgery. There is also, a reasonable chance that the simple procedure will succeed.

The light brown irides were the easiest to perforate. The post-lasrer spikes of elevated intraocular pressure can be prevented by routine prescription of carbonic anhydrase inhibitor (Diamox) immediately post-laser and for 24 hours.

Closure of the iridectomy hole was not noted in any treated eye if the iridectomy was patent for three months. The lenticular opacities due to laser burns did not progress during the follow up.

The use of the Abraham lens is a favor. It was found to fix the eye (with no need for retrobulbar infilteration even with uncooperative patient), magnify the perforation site with no effect on the depth of focus and to cause the laser beam to converge sharply with a reduction in the spot size focused on the iris. Thus increasing the power density on the iris. It also leads to increase the relative divergence of light at the cornea resulting in decrease of the power density at the corneal level.

An important factor to minimize the shots needed, is to superimpose each shot exactly onto the preceeded one. Another factor to minimize the number of shots, is to use the optimum power. Overheating leads to charcolization and under-heating leads to ineffectiveness.

Post-laser iritis can be calmed down by the routine use of post laser topical corticosteroid at least four timely a day for at least three days.

Lastly, we can say that laser peripheral iridectomy is a suitable procedure to be tried as an intial manouver for all cases of primary angle-closure glaucoma with pupillary block.