MATERIAL
&
METHODS
MATERIAL AND METHODS

The present study was conducted in the Post Graduate Department of Ophthalmology M.L.B. Medical College Jhansi to evaluate the comparative study of square / triangular scleral flap in trabeculectomy along with 5-FU.

All the patients of primary open angle glaucoma included in this study were selected from the out patient department of M.L.B. Medical College, Jhansi.

The patients selected were divided in two groups, Group A and Group B on the basis of scleral flap.

Group A was described as a square scleral flap with 5-FU.

Group B was described as triangular scleral flap with 5-FU.

Every selected patient was examined and investigated on the following lines:-

I. Identification of the patient: -

Following particular were recorded: - Name, Age, Sex, Address and Occupation. Then every patients was allotted a patient code
HISTORY OF PRESENT ILLNESS:

History of diminution of vision, its rate of progression, any history of headache and eye pain, its severity, duration and association with vomiting, coloured halos, redness, discharge and watering of eye was inquired and recorded. History of antigalaucoma therapy as well as any other ocular therapy was asked and recorded.

PAST HISTORY:

Past history regarding previous ocular diseases and their treatment was asked and noted. History of ocular trauma or other visual disturbances was taken. History of diabetes, hypertension and tuberculosis is also inquired and noted.

PERSONAL HISTORY:-

History of smoking, tobacco chewing, and addiction to alcohol or drug is taken. Inquiry is also made about cough, constipation and straining while micturation.

EXAMINATION:

GENERAL EXAMINATION:-

Recording of pulse, temperature, respiratory rate and blood pressure was done and noted.
SYSTEMIC EXAMINATION:

Examination of Cardio vascular system, Central Nervous System, Respiratory System and G.I. tract was done.

LOCAL EXAMINATION (EYE EXAMINATION)-

The local examination was done under bright illumination to examine the conjunctiva, cornea, anterior chamber, iris, pupil and lens.

The slit lamp examination was done routinely particularly to examine the transparency of cornea, aqueous flare, keratic precipitates, extent of lenticular opacities, and pigment dispersion over the lens and to elicit pupillary reaction in doubtful cases.

SPECIAL EXAMINATION:

1. Visual Acuity-

Best corrected visual acuity recorded preoperatively in terms of Snellen's test type, finger counting, and hand movement, perception of light and projection of rays depending upon the individual's visual status.
2. Pupillary Examination-

Pupils of both eyes were examined with the help of slit lamp for:-

➢ Pupillary reaction
➢ Size of pupil
➢ Shape of pupil

➢ Presence of any synechiae

3. Fundus examination-

This was done with Welch Allyn direct ophthalmoscope, Keeler's indirect ophthalmoscope and 90 D lens. The condition of optic disc such as size, shape, colour, margins, cup- disc ratio, nasal shifting of vessels, neuroretinal rim and parapapillary area was noted and if possible photographed with funds camera. Besides this any other abnormality in funds was also recorded.

4. Gonioscopy-

It was done cooperative patients by Goldman’s three mirror gonioscope to access the angle status whether open or closed. Beside these the peripheral anterior
synechiae and neovascularisation of the angle, if any were noted.

5. Field Charting –

Field charting was done pre operatively in cooperative patients with good vision. Peripheral field charting was done with the Goldman’s perimeter and central field with Bjerrum’s screen.

6. Tonometry-

Tonometry was performed with Schiotz’s tonometer, with a standard technique in all cases. One particular Schiotz’s tonometer was used pre and post operatively.

Post operatively intra ocular pressure was recorded 2nd day, 10th day, 6th week, 3rd month, 6th month.

Every patient was subjected preoperatively to investigations like:

- Routine blood Examination
- Routine urine Examination
- Blood sugar - Fasting, PP
- Conjunctival smear Examination
- Syringing of nasolacrimal passage
- Xylocaine sensitivity test.

**Preoperative Medications:**

Preoperative effective control of intraocular pressure was obtained by minimum Medical therapy including acetazolamide, Ciprofloxacin eye drops four times daily for 3 days preoperatively given to every patient informed written consent was taken from all the patients, prior to surgery.

**Anaesthesia:**

Peribulbar or Retro bulbar anaesthesia by a combination of 2% xylocaine and 0.5% Adrenaline, (never should give the pinky ball).

**Operative techniques:**

A wire speculum was inserted to separate the lid or bride suture were applied to avoid any pressure on the globe. External pressure on the globe when the eyes open can make maintenance of the anterior chamber difficult the lashes should be out of the surgical exposure.
The superior rectous traction suture allows rotation of the globe inferiorly to bring the superior bulbar conjunctiva in to view. The suture is then clipped to the drape, keeping the globe in a fixed position.

Conjunctival flap was made either limbus or fornix based, but a limbus based flap seems to produce a more localized and elevated bleb and a fornix based flap is a more diffuse and flatter one. In limbus based flap the incision was extended superiorly 8 mm from and parallel to limbus. In fornix based flap 6 mm conjunctiva was dissected at limbus so clearly expose the sclera and limbus. Any bleeding vessel was cauterized.

Sclera flap was made either square or triangular. The square flap was made 3X3 mm with the help of a blade knife mounted on a B.P. handle and the triangular square flap was 3.5X3.5X3.5 mm. A half thickness square or triangular flap of sclera was dissected towards the cornea with the help of blade knife and 0.12 mm toothed forcip. The flap was extended forwards untill the anterior 1 mm of its bed consist of cornea.

Then a fluid retaining sponge is fashioned to approximately 2 to 3 mm long and wide and about 0.5 mm thick would be
soaked in 1ml of 50 mg undiluted 5-FU placed on the between sclera flap and the sponge will be left in position for two minutes. The sponge had removed and would be irrigated with 20 ml of balanced salt solution or from Ringer lactate.

Along the line of scleral spur thus defined about 2mm behind the corneolimbal junction a 3mm long radial incision was made on one side immediately by a sharp micro blade. This radial incision was started in clear cornea and extended posteriorly to the blue – white transitional jone, the site of Schwalbe’s line. A similar size radial incision was made on the another side. (The incision should not be made too far posteriorly because blockage of the trabeculectomy site by iris or ciliary process may lead to post operative failure.) The anterior lip of incision was grasped with a fine-toothed forcep and a block sized 3X1 mm of limbus tissue was excised. A broad peripheral iridectomy was performed which help avoid iris incarceration into the internal sclerostomy. The iris was repository back with help of iris repositor. Air was infected with a 30 gauge blunt canula to reformation of the anterior chamber. The corneo-Scleral flap was then approximated back to the scleral bed and sutured with
10/0 nylon interrupted suture. The limbus based conjunctival flap was closed with 10/0 nylon suture continuously and the fornix based conjunctival flap was sutured both ends through partial thickness sclera and the conjunctival flap margin.

A subconjunctival injection of 0.5 ml of gentamycin and 0.5 dexamethasone was given. A short-term mydriatics like tropicamide along with antibiotic-steroid eye ointment. Eye pad was applied and bandage was done.

During the intra operative period conjunctival biopsy specimen were obtained from all patients. Only patients who has primary open angle glaucoma with no history of previous ocular surgery or significant ophthalmic or systemic disease were included the study. None of the patient has received topical or systemic steroids prior to surgery.

Post Operative Care:

All patients received topical 0.1% dexamethason, atleast six times a day a minimum of 6 weeks and antibiotic eye drop four times a day for 4 to 6 weeks. Oral antibiotic and anti-inflammatory analgesics were also given for 5 days.
Post Operative Follow-up:

Each patient was subjected to a detailed eye examination at:-

1. On 2nd day of operation
2. On 10th day of operation
3. After 6th week of operation
4. After 3rd month of operation
5. After 6th months of operation

When clinically indicated patients were seen more frequently. All patients turned up for first 4 follow up visits of these patients intraocular pressure of their 3rd visit was taken into consideration.

Surgical Success:

Surgical success was defined as an intraocular pressure of 21mm Hg or less without any complication and failure was defined as an intraocular pressure greater then 21mm Hg with or without other ocular complications. Optic disc visual field and visual acuity criteria for success were not analysed, so that out come of trabeculectomy was assessed on the to criteria i.e. intraocular pressure control and post operative ocular complications.