MATERIAL AND METHOD
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The present study was carried out in the department of Ophthalmology, M.L.B. Medical College & Hospital, Jhansi between March, 1989 to May, 1990. The patient selected have marked visual defect because of the lenticular opacities and raised intra-ocular pressure. The patients suffering from chronic simple glaucoma with cataract were taken up for the study.

The patients were of either sex and age ranged from 31 to 70 years. Number of eyes underwent surgery were 20. The minimum follow up period was 2 months. The surgery was done by the consultant surgeons of the department.

The following pattern was adopted for almost all the patient:

HISTORY OF PRESENT ILLNESS:

Any history of headache and eyesache, its severity duration and association with vomiting, diminution of vision, redness and watering of eye was inquired and recorded. History of anti-glaucoma therapy was asked, if any.
PAST HISTORY:

Regarding previous attack of some disease like trauma, vomiting, diabetes or visual disturbances, if any, was noted.

PERSONAL HISTORY:

History of smoking, tobacco, chewing and addiction of alcohol or drug is noted.

EXAMINATIONS:

Systemic:

Recording of pulse, blood pressure, temperature, examination of central nervous system, respiratory system, cardiovascular system and G.I. tract.

Local:

The local examination was done under bright illumination with the help of uniuocular loupe (10 x) and (+ 13 D) condencing lens. By this, we 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.
INVESTIGATIONS:

Routine:

It includes urine for albumin, sugar and microscopic examination in all the cases. And wherever indicated blood suger, total leucocyte count, differential leucocyte count blood haemoglobin, erythrocyte sedimentation rate etc.

Special:

(1) **Visual acuity**: This was recorded in terms of snellen's test type, finger counting, hand movements, perception of light and projection of rays, depending on the individuals visual status. The best corrected visual acuity was recorded in post-operative and follow up period.

(2) **Pupillary examination**: Pupil of both eyes were seen for -
- pupillary reaction;
- size of the pupil; and
- shape of the pupil.

Pupillary reaction - direct and consensual, pupillary reaction were seen with the help of torch.
(3) **Tonometry**: It was performed with the Schiotz tonometer with standard technique in all the cases. One particular Schiotz tonometer was used pre-operatively, post-operatively and in follow up period.

- Patient was asked to lie down in supine position looking straight at the ceiling of the examination room.

- Xylocaine 4% was instilled into the both eyes until local surface anaesthesia was complete.

- Both eye lids were separated with the finger without pressing on the eyeball and then the tonometer was placed vertically on the cornea, so that it rest by its own weight.

- Depending on the tension of the eye, there was a deflection of the recording needle on the scale.

- The reading on the scale was then translated from the conversion chart into milimeter of mercury.
PHOTOGRAPH SHOWING
SCHIOTZ TONOMETRY
(RIGHT EYE)
(4) **Fundus examination**: Both distant direct and direct ophthalmoscopy were done post-operatively by Keeler's Mediclum Ophthalmoscope. The condition of the media, optic disc such as size, shape, colour, excavation margins nasal shifting of vessels and disc cup ratio, were noted. Beside this any abnormality in the fundus was recorded.

(5) **Gonioscopy**: It was done in all the 20 patients by Goldman's three mirror gonioscope to assess mainly the angle status (open or closed). Beside these the peripheral anterior synechia and neovascularisation of the angle, if any, were noted.

When the desired investigations were complete, the patient was subjected for medical therapy followed by surgical intervention.

**Pre-operative preparation**: The patient were mentally prepared to undergo combined surgery (trabeculectomy with cataract extraction). To relieve the anxiety and to have good sleep night before the operation dazepam 5 mg tablet was given. The eye lashes were cut a day before and lignocain sensitivity has to be done with 3% lignocain.
The intraocular pressure was controlled with acetazolamide 250 mg tablet in suitable doses, along with timolol eye drop 0.25 to 0.5% two times in a day.

When the tension was not controlled, intravenous mannitol 20% was injected an hour before the operation. To premedicate the patient injection pentazocine 30 mg and injection phenargan 50 mg were given intramuscularly, half an hour before the operation.

ANAESTHESIA :

Topical : By instillation of 4% lignocain 4 - 5 times at 2 minutes interval.

Regional Akinesia : It was obtained by 2% lignocain with adrenalin by O' Briens's method preferably and whenever, essential by Vanlint's technique too.

Ciliary Block : By 1 ml. retrobulber injection of 2% lignocain with adrenalin followed by ocular massage for 2 - 3 minutes.

STEPS OF OPERATION :

The operation was done under 3 x magnification by magnifying glasses. After the lid and superior rectus suturing, a limbal based conjunctival flap was
formed over the superior. 180 degree approximately
8 mm from limbus at 12 O'clock position and gradually
tapered down close to the limbus at 3 and 9 O'clock
position. Flap was reflected over the cornea and limbus
cleared. The superficial vessels were thermally
cauterized.

A 4x 4 mm half thickness scleral flap was then
formed and dissected towards the cornea at 12 O'
clock position as in routine Watson's trabeculectomy.
Partial penetrating limbal grooves were then made on
the either side of the trabeculectomy flap.

Two preplaced 8.0 silk mattress suture were
passed through the grooves. A trabeculectomy window
measuring 3 x 1 was then formed with a razor blade
fragment. The posterior edge being along the line of
spur. This rectangular piece was elevated with a fine
toothed forceps and cut with corneal scissors. Thus
the region of canal of schlemm and trabeculae was
excised.

If iris prolapsed at this stage an iridectomy
preferably peripheral, otherwise complete was done.
Corneal scissors were then introduced through
trabeculectomy window to extend the corneal section,
passing through the performed grooves. If not already done, an iridectomy was done after the completion of section. After releasing the superior rectus muscle stich cataract extraction was done by cryoprobe. The two preplaced mattress sutures were tied iris was reposited. The scleral trap door was stiched back with two 8.0 silk buried sutures. The conjunctival flap were then stiched with 8.0 silk, sterile air was injected to reform the anterior chamber. Sub-conjunctival injection of decodorn 1 mg and gentamicin 10 mg was given, when indicated.

The operative complications were managed as in routine cataract extraction. After applying atropine 1% and antibiotic ointment, the eye was bandaged.

POST OPERATIVE MANAGEMENT:

A suitable systemic antibiotic usually chloramphenicol 250 mg four times a day with anti-inflammatory drugs were given to all the patients for 3 days atleast.

Daily dressing was done with corticosteroid and antibiotic ointments. 1% atropine was added in case of iritis or in whom sector iridectomy was performed. Injection gentamicin, decodorn and atropine were given, subconjunctivally when indicated.
The eye was examined on every dressing and post-operative details were noted. Particular attention was paid to the condition of section wound. Striate keratitis depth of anterior chamber, hyphaema and any sign of iritis were managed, accordingly.

In uncomplicated cases, the conjunctival and corneo-scleral stiches were removed, on 8th day and the patient was discharged subsequently with the follow up treatment and advice.

THE FOLLOW-UP:

The patients were advised for the follow up examination at one week interval, for two weeks, after discharge. Then fortnightly for three visits, one monthly examination for three months. Then at three to six months interval of whenever, there is any problem.

At follow up visits the eye was examined for any filtering bleb, transparency of cornea, depth of anterior chamber, and condition of iris etc. Funduscopy and gonioscopy was done. More emphasis was given on corrected visual acuity and intraocular pressure. All the findings were recorded for the final assessment.