MATERIAL AND METHODS
MATERIAL AND METHODS

In the present study cases were selected from the cataract patients attending the eye outpatient department of M.L.B. Medical college, Jhansi.

The cataract patients selected in this study did not have any systemic disease affecting the eye like diabetes or hypertension and did not have any ocular pathology especially glaucoma or any other active or healed ocular disease. They had no previous ocular surgery or prolonged use of steroids for any cause.

All the cataract patients were randomly assigned into two groups of 30 patients each Group I- Those who underwent conventional cataract surgery with lens implantation using (11-12mm) large limbal incision and wound closure with continuous shoelace suturing Group II. Those who underwent cataract extraction with lens implantation with 6mm scleral tunnel no
stitch self sealing incision. Each group was followed up at 2 weeks, 4 weeks and 6 weeks postoperatively.

**Preoperative evaluation**

A detailed history was taken and a comprehensive general examination was conducted and relevant investigations were carried out.

The snellen's acuity both unaided and aided was recorded. The intraocular pressure was recorded. Patients having intraocular pressure greater than 21mm of Hg were excluded from study.

Anterior segment examination was done and any active or latent pathology was looked for and excluded.

Posterior segment examination was done where ever possible using direct and indirect ophthalmoscopy.
Keratometry was done using the Bausch and Lamb Model keratometer.

A scan Biometry wad done using the Opticrom 2000 Mizar model to establish the axial length and the IOL power was calculated using the SRK II formula.

**Operative Procedure.**

After the routine preparation of the eye prior to surgery, adequate mydriasis was achieved by using tropicamide and phenylephrine combination and maintained by NSAID eye drops. Instilled at 10 minute interval two hours prior to surgery. 500 mg acetazolamide was given with .25mg alprazolam on the previous night and two hours prior to surgery.

Peribulbar anaesthesia was used in all cases and hypotonia achieved by oculo compression using 2% Xylocaine and Adrenaline (1 : 100000).
All surgeries were performed under the operating microscope with coaxial illumination. The eye was cleaned and draped.

**Group I -**

Patients were operated through clear large limbal incision the operation being extracapsular cataract extraction with posterior chamber lens implantation and closure of the wound with monofilament polyamide 10/0 suture in a shoe lace pattern.

**Group II -**

A formix based conjunctival flap was raised. Bleeders were secured through wet field electrocautery.

A 6.5mm straight incision was made on the sclera from 12 O' clock to 2 O' clock position. It was about 3mm away from the limbus in the centre .3mm deep.

A crescent blade is used to make the scleral tunnel along the incision extending to about 2mm into the clear cornea.
SCLERAL TUNNEL INCISION
(SCHEMATIC)

P - PUPIL
EL - EXTERNAL LIMBUS
SP - SIDE PORT

B₁ - AREA OVER LAMELLAR SCLERAL INCISION
B₂ - EXTENT OF CORNEAL STROMAL DISSECTION

CROSS SECTION

S - SCLERA
C - CORNEA
CV - CORNEAL VALVE
T - TUNNEL
SF - SCLERAL FLAP
INSTRUMENTS USED IN CONSTRUCTION OF SCLERAL TUNNEL

Crescent Blade

5.5mm Triangular Keratome
The incision was enlarged by using 5.5mm triangular keratome.

The side port was used to make a stab incision at the limbus temporally and to enter the anterior chamber. Viscoelastic sustance (methye cellulose 2%) was injected into the Anterior chamber.

A 26 gauge 1/2 inch needle was fashionid into a cystitome. It was introduced into the anterior chamber and anterior capsulotomy performed by can opener technique through the side port.

Then, at the end of the tunnel at 3.mm triangular keratome was used to enter the anterior chamber.

This was followed by hydrodissection and hydrodilination by injecting BSS through 26 gange canula under the anterior capsule and between the nucleus and epinucleus.
Methylcellulose was injected into the anterior chamber. When the nucleus was small it was withdrawn by putting 5.5mm wire rectis under the micleus when the nuclens was large it was broken into smaller fragments using the nucleus cracking forcep and the fragments were either removed by with drawing with the wire rectis or viscoexpression.

The remaining epiunciocleus and cortex was removed by irrigation and aspiration canula using BSS as the irrigating fluid in a bottle at a hight of 40 inches above the eye level.

After cleaning, the chamber was reformed with viscoelastic and 6.5mm PMMA is put in the bag using the MC phersons forceps.

Viscoelastic sustance in then removed using the irrigation / aspiration canula. The conjunctiva is repositioned and fixed by stay sutures. The incision is self sealing because of corneal valve closure and stromal hydration.
Subconjunctival gentamycin dexamethasone infection was given.

**Post operative evaluation**

A detailed examination was done on the first and second postoperative day and the patient was discharged subsequent examination was done on 2 weeks, 4 weeks and 6 weeks

Factors studied were.

1. Astigmatism
2. Visual acuity

Spectacle correction was given at 6 weeks and the final aided visual acuity noted.

Examination was done to look for parameters such as IOL position iritis, posterior capsular opacification.