

OPHTHALMOLOGY INSTRUMENTS

UNIVERSAL METALLIC EYE SPECULUM



EYE SPECULUM WITH GUARD OR WITH SOLID BLADES



WIRE SPECULUM



USES

Eye speculum are used to keep the lids apart during :

- Intraocular operations- cataract surgery, glaucoma surgery and keratoplasty
- Extraocular surgery- squint / pterygium surgery
- Examination of the eye in a patient with blepharospasm
- Enucleation and evisceration operation
- Removal of conjunctival and corneal foreign bodies

PLAIN FORCEPS



USES

- To hold the conjunctiva during an surgical procedure
- To tie the sutures
- To hold the scleral flap during trabeculectomy
- To hold the skin during eyelid surgery
- To hold the nasal mucosal flaps and lacrimal sac flaps in DCR operation

GLOBE FIXATING FORCEPS



- It has 2x3 or 3x4 at the tip.
- It is applied near the limbus to hold the conjunctiva and episcleral tissue together

USES

- 1) To fix the eyeball during operations on the eyeball
- 2) To hold the eyeball during forced- duction test

SUPERIOR RECTUS HOLDING FORCEPS



- It is a toothed forceps (1x2 teeth) with S-shaped double curve near the tip

USES

- 1) It is used to hold the superior rectus muscle while passing the bridle suture under it.
- 2) It stabilizes eyeball during any operations

CORNEO-SCLERAL FORCEPS



- Corneo-scleral forceps are with very fine teeth(1x2) at the tip

USES: These are used to hold the cornea or scleral edge for suturing during cataract, glaucoma, repair of corneal and/or scleral tears and keratoplasty operations

IRIS FORCEPS



- These are small and delicate forceps having fine (1x2 teeth) on the inner side of the limbs

USES: To catch the iris during various surgical procedures for the purpose of iridectomy

ARUGA'S INTRACAPSULAR FORCEPS



- They have a cup on the inner side of the tip of each limb, margins of the cup are smooth and hence do not damage the lens capsule when applied

USES: In ICCE (intracapsular cataract extraction) surgeries to hold lens capsule during lens delivery

EPIILATION FORCEPS



- These are small stout forceps with blunt and flat ends

USES: Epilate cilia in trichiasis and sty, to remove cilia after electrolysis, cryolysis and to remove cilia lodged in the punctum

ARETRY FORCEPS



- Blunt tipped stout forceps with scissor like configuration ,multiple straight grooves and locking mechanism near the ringed end

Uses: 1) To catch bleeding vessels during surgeries of lids and lacrimal sac

2) To hold skin and muscle stay sutures

3) To hold peanut gauze pellets for blunt dissection in lacrimal sac surgery and extraocular surgery

4) To hold the gauze pieces while packing the socket after enucleation or exenteration operation.

LENS EXPRESSOR (HOOK)



- Flat metal handle with rounded curve at one end, Tip of curve is knobbed.
- The plane of the handle is at right angles to the curvature of the hook
- Uses : 1) Can be used as muscle hook
2) To express nucleus in ECCE
3) Used along with wire vectis to extract the dislocated lens

MUSCLE HOOK



- It has a blunt guarding knob at the end to prevent the muscle from slippage.
- The plane of the handle is same as that of curvature of hook

USES: 1) Engage the extraocular muscles during surgery

2) can be also used as lens expressor

DESMARRE'S RETARCTOR



- Saddle shaped instrument folded on itself at one end

USES: 1) Retract the lids during examination of eyeball in cases of blepharospasm

2) Used in children in cases with marked swelling and ecchymosis, removal of corneoscleral sutures, removal of corneal foreign body, double eversion of upper eyelid to examine superior fornix

CAT'S PAW LACRIMAL WOUND RETRACTOR



- It is a fork like instrument with terminals bent inward

USES: 1) To retract skin during lacrimal sac and lid surgery

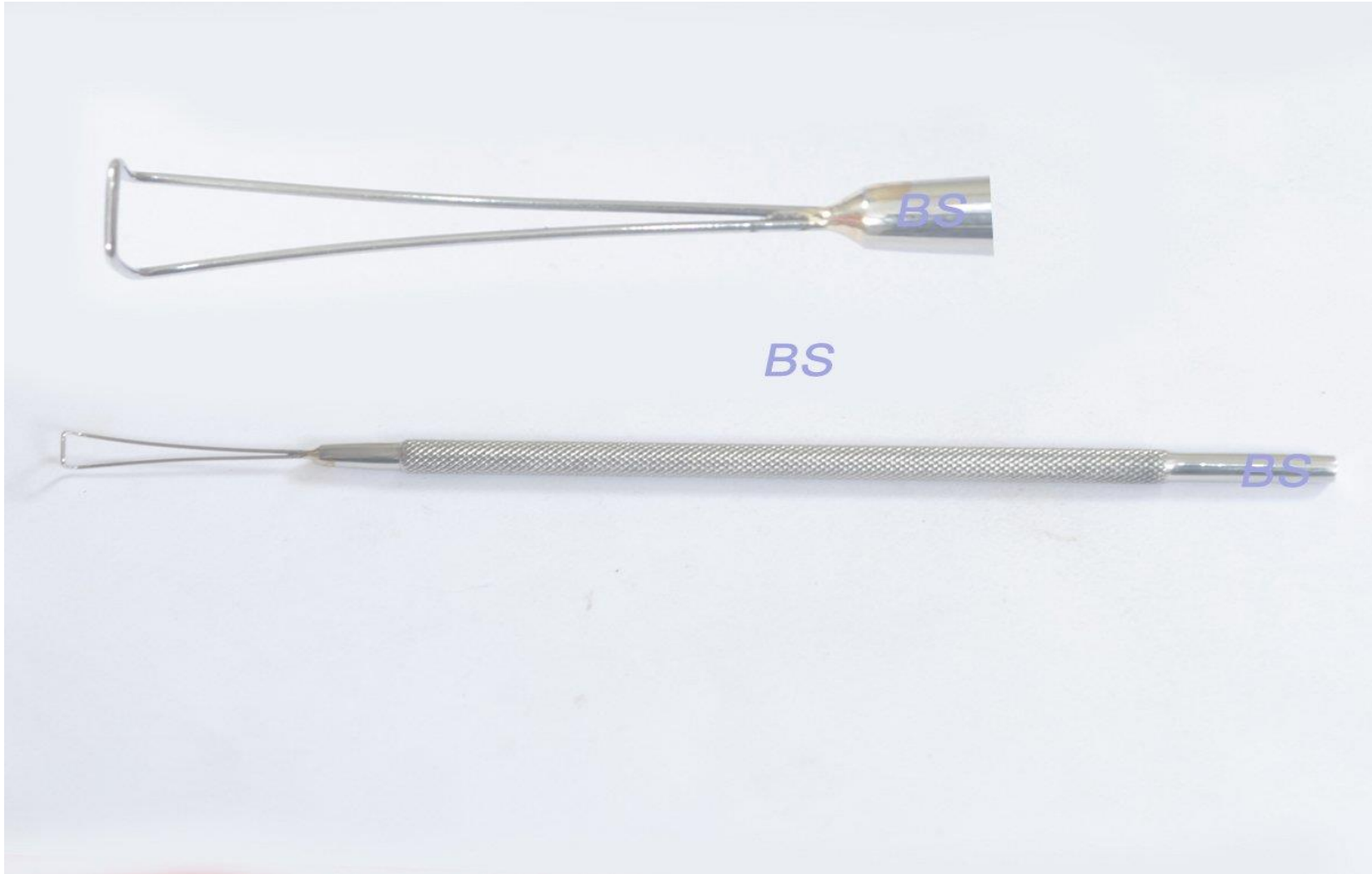
SELF-RETAINING LACRIMAL WOUND MULLER'S RETRACTOR



- It has two limbs with 3 curved pins on each for engaging the edges of the skin incision
- The limbs are kept in a retracted position by a fixing screw

USES: To retract the skin during surgery on the lacrimal sac like during DCT or DCR

IRIS RETRACTOR



- It has a handle with curved blade (conforms to the pupillary margin) at one end

USES: 1)Retract upper edge of pupil in cryoextraction technique of ICCE

2) aspirate lens matter from behind iris at 12'0' clock position in ECCE

SPRING ACTION(BARRAQUER'S TYPE) NEEDLE HOLDER



The jaws of the needle holder are finely serrated to hold the fine needle firmly

USES: Spring type needle holders are used for passing sutures in the conjunctiva, cornea, sclera and extraocular muscles.

CASTROVEJO'S NEEDLE HOLDER



- It is a medium-sized spring action needle holder with a S-shaped locking system

USES: 1) It is generally used in extraocular surgery e.g., conjunctival suturing, squint surgery ,etc.

2) It can also be used for intraocular surgery

ARRUGA'S, STEVEN, SILCOCK'S AND KELT NEEDLE HOLDER

Thumb lock (unlock condition)

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Arruga's, Silcock's, Kelt's, Steven's
Needle holder with thumb lock

Thumb lock
(lock condition)

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- These are large needle holders with upper shank having a flat and broad plate to accommodate surgeon's thumb

USES: In lid surgeries and for passing superior rectus suture

CASTROVIEJO CALLIPER

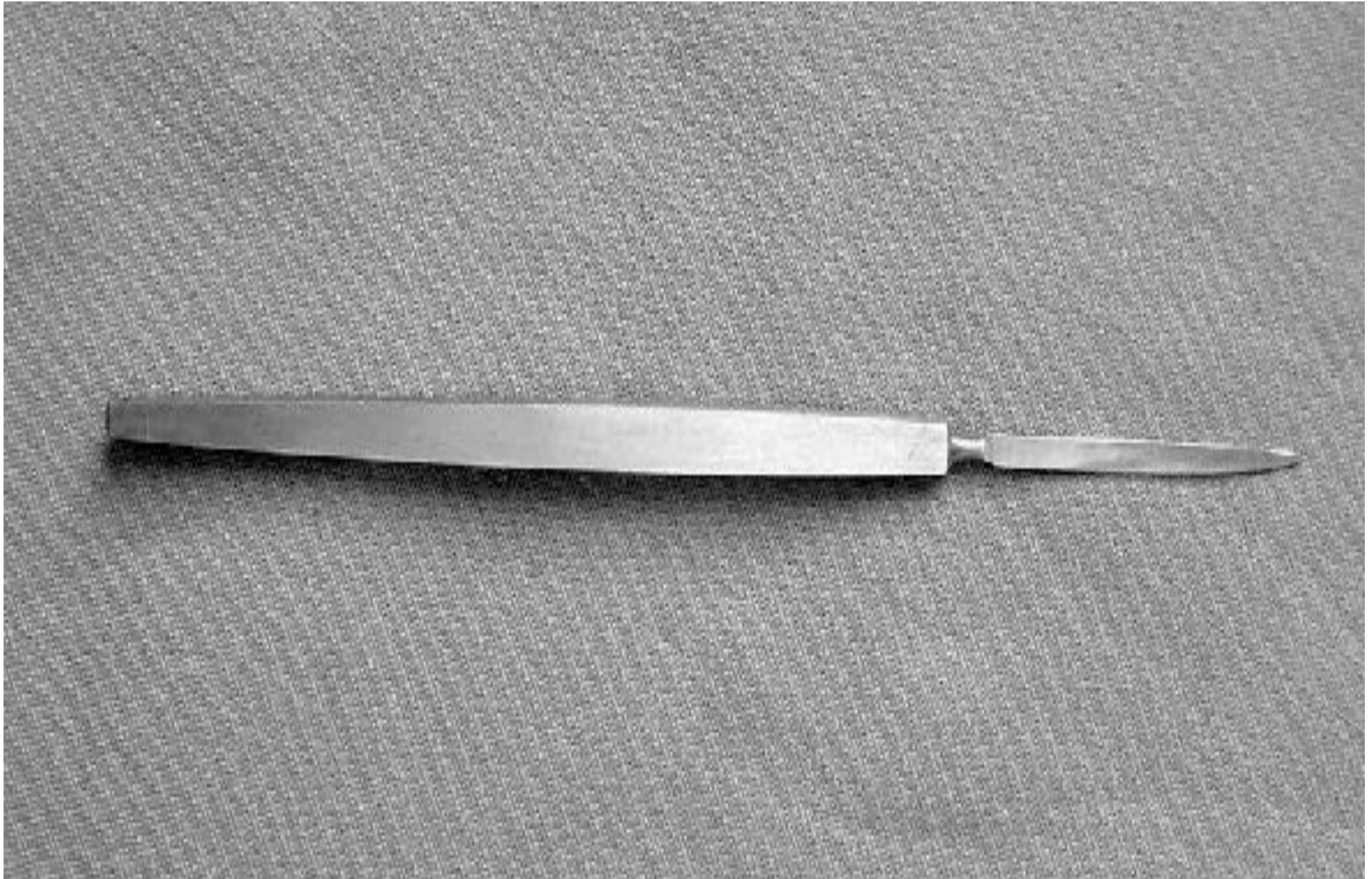


- Divider like instrument , to one arm of which is attached a graduated scale in mm
- The other arm can be moved by a screw over the scale

USES: 1)To take measurements during ptosis,squint,retinal detachment,pars-plana vitrectomy surgery

2)Measure corneal diameter and visible horizontal iris diameter

VON GRAEFE'S KNIFE



- It is a long,narrow,thin and straight blade with a sharp tip and cutting edge on one side.

USES:1) It is also used for fourdotiridectomy operation in patients with iris bombe formation

2)For making puncture in pars plana area during lenesctomy and vitrectomy operation

KERATOME



- A keratome has a thin diamond-shaped blade with a sharp apex and two cutting edges.

USES: To make valvular corneal incisions for entry into anterior chamber for all modern techniques of cataract surgeries (phacoemulcification, SICS, ECCE)

PARACENTESIS NEEDLE



- It is a small lancet-shaped needle with sharp cutting edges resembling in appearance to a small keratome

USES: It is used for paracentesis and to make a very small corneoscleral incisions.

TOOKE'S KNIFE



- It has a short flat blade with a semicircular blunt dissecting edge, which is bevelled on both the surfaces like a chisel

USES:1)To separate pterygium head or limbal dermoid from the underlying corneal lamellae

2)To separate corneal lamellae in lamellar keratoplasty

3) To separate partial thickness lamellae of sclera during trabeculectomy

15° SIDE PORT ENTRY BLADE



- It is a fine straight knife with a sharp pointed tip and cutting edge on one side

USES: It is used to make a small valvular clear corneal incision in phacoemulsification and other intraocular surgeries including pars plana vitrectomy

MVR OR VLANCE BLADE



MVR OR VLANCE BLADE

- It is a fine straight but triangular knife similar to 15° side port entry blade but the cutting edges on both sides.

USES: Its uses are similar to 15° side port entry blade

CYSTITOME OR CAPSULOTOME



- It is a small needle knife with a bent tip which is sharp on both the edges.

USES: It is used for doing anterior capsulotomy or capsulorhexis during extracapsular cataract extraction

FOREIGN BODY SPUD



FOREIGN BODY SPUD

- It has a small, stout and flat blade with blunt tip and edges on both sides

USES: It is used to remove corneal foreign body

RAZOR BLADE FRAGMENT WITH BLADE HOLDER



- **USES:** It is the most commonly used cutting device for making incisions in cataract, glaucoma, keratoplasty, sclerotomy, pterygium and many other operations.

CRESCENT KNIFE



- It is blunt-tipped bevel up knife having knife having cut-splitting action at the tip and both sides.

USES : It is used to make tunnel incision in the sclera and cornea for phacoemulsification, SICS and sutureless trabeculectomy

PLAIN STRAIGHT SCISSORS



- It is a fine pointed scissors with straight sharp cutting blades

USES: It is used to cut conjunctival sutures, eyelashes, and muscles.

PLAIN CURVED SCISSORS



- It is a fine pointed scissors with curved, sharp cutting blades.

USES: It is used to cut and undermine conjunctiva in various operations and to undermine skin during operations on lids and lacrimal sac.

TENOTOMY SCISSORS



- They are plain straight or curved scissor with blunt ends

USES: 1) Cut extraocular muscles during squint surgery and enucleation

2) To separate delicate tissues without damaging surrounding area in oculoplasty and squint surgery

CORNEAL SCISSORS/SECTION ENLARGING SCISSORS



- Fine curved scissors whose cutting blades are kept apart by spring action.
- They are universal corneal scissors

USES:1)To enlarge corneal or corneoscleral incision for conventional ICCE and ECCE

2)To enlarge corneal incision in keratoplasty

3)To cut scleral and trabecular tissue in trabeculectomy

4)To cut and undermine conjunctiva

DE WECKER'S SCISSOR



- Fine scissor with small blades directed at right angles to the arms.

USES: 1) To perform iridectomy , iridotomy

2) To cut prolapsed vitreous and pupillary membrane

SPRING SCISSOR(WESTCOTT'S)



VANNAS SCISSORS



- Stout scissors with straight or curved blade with sharp or blunt tips

USES: 1) Handy alternative to plane straight /curved ringed scissor for cutting and undermining conjunctiva

2) To cut sutures

- Fine delicate scissor with small cutting blades kept apart by spring actions.

USES:1) These are used for cutting anterior capsule of the lens in ECCE

2) Cutting scleral flap in trabeculectomy

3) pupillary sphincterotomy

4)For performing Iridectomy

5) For cutting pupillary membrane

ENUCLEATION SCISSORS



- Large stout and strong scissors having curved ,sharp blades with blunt ends.
- **USES:** To cut optic nerve during enucleation surgery

LID CLAMP/ENTROPION CLAMP



- It consists of a D shaped plate opposed by a U Shaped rim which when tightened with screw, clamps the tissues
- **USES:**1) It is used in lid surgery, e.g., entropion and ectropion corrections
2) It protects the eyeball, supports the lid tissue and provides hemostasis during surgery

CHALAZION CLAMP



Chalazian clamp

- It consists of two limbs like a forceps, which can be clamped with the help of a screw.
- The tip of one limb is flattened in the form of round disc while the tip of the other arm has a small circular ring.

USES: To fix the chalazion and achieve hemostasis during the incision and curettage operation

CHALAZION SCOOP



- It has a round and cupped tip

USES: used to curette the chalazion after incising it to scoopout the contents of the chalazion

PTOSIS CLAMP



- It is like a forceps with J shaped ends having internal serrations. The clamp has a locking mechanism

USES : To hold levator palpebrae superiors muscle during ptosis surgery

LENS SPATULA



- It is a flat metallic handle with tiny spoon shaped ends

USES: It is used to apply counter pressure at 12'0 clock position during expression of nucleus in extracapsular cataract extraction

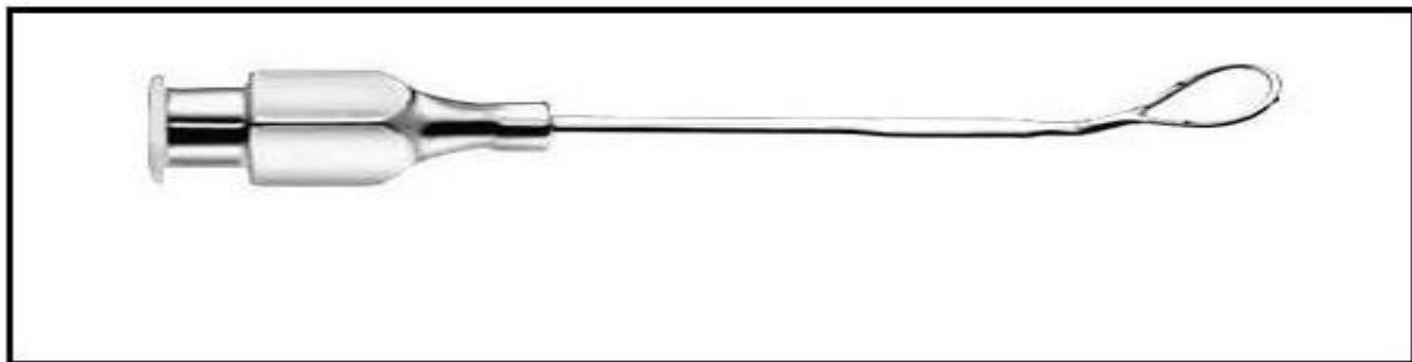
WIRE VECTIS



- It is a wire loop attached to a metallic handle

USES: It is used to remove subluxated lens and anteriorly dislocated lens in ICCE technique and the nucleus in ECCE technique

IRRIGATING WIRE VECTIS



- It is a modified vectis in which loop is made of a thick hollow wire

USES: It is most commonly used to deliver nucleus in the SICCS and in Conventional ECCE by hydro expression or visco expression technique

TWO-WAY IRRIGATION AND ASPIRATION CANNULA



- USES:1) For irrigation and aspiration of the lens matter in extraocular cataract extraction
2) Aspiration of hyphaema

IRIS REPOSITOR



- It consists of a delicate, flat, malleable, straight or bend blade with blunt edges and tip attached to a handle.

USES: 1) To reposit the iris in the anterior chamber in any intraocular surgery
2) To break synechiae at the pupillary margin

IOL HOLDING FORCEPS



- It is a spring action forceps with short, blunt and curved blade having smooth edges and tips with platform(no teeth or serrations)

USES: To hold optic of non-foldable PMMA IOL during implantation

KELMAN-MCPHERSON FORCEPS



- These are fine forceps with bent ends

USES: 1) To hold the superior haptic of IOL during its placement

2) To tear-off the anterior capsular flap in ECCE

3) Can be used for suture tying

SINSKEY HOOK OR IOL DIALER



- It is a fine but stout instrument with bent tip.
- The tip engages the dialing holes of the IOL

USES:1)It is used to dial the PMMA non foldable IOL for proper positioning in the capsular bag or ciliary sulcus

2)It can be used to manipulate the nucleus in phacoemulsification surgery

HYDRODISSECTION CANNULA



- **USE** : It is used to perform hydrodissection and hydrodelamination in phacoemulsification and SICS

LID SPATULA



- It is a simple metal plate having slightly convex surfaces at either end
- **USE:** To protect the globe and support the lid during entropion, ectropion, ptosis and other lid surgeries.

PUNCTUM DILATOR(NETTLESHIP'S)



- It has a cylindrical corrugated metal handle with a conical pointed tip

USE: To dilate the punctum and canaliculus during syringing, probing, dacryocystography, DCT and DCR procedures.

LACRIMAL PROBES (BOWMAM'S)



- These are a set of straight metal wires of varying thickness with blunt rounded ends and flattened central platform
- USE :1) To probe nasolacrimal duct in congenital blockage
2) To identify the lacrimal sac during DCT and DCR operations

LACRIMAL CANNULA



- It is a long curved hypodermic needle with blunt tip

USE:1) For syringing the lacrimal passages

2)As AC cannula for putting air, tryphan blue dye, pilocarpine and balanced salt solution in the anterior chamber during intraocular surgery

BONE PUNCH



- **USES:** It is used to enlarge the bony opening during DCR operation by punching the bone margins of the opening.
- Carelessness during this step can cause accidental damage to the nasal mucosa and the nasal septum

CHISEL



- It consists of a blade having a sharp cutting straight edge with one surface bevelled. it has a long and stout handle

USES: To cut the bone during DCR and orbitotomy operations

HAMMER



- It is a small steel hammer attached to a corrugated handle
- **USE** : To hammer the chisel during DCR and orbitotomy operations

LACRIMAL SAC DISSECTOR AND CURETTE



- It is a cylindrical instrument, one end of which is a blunt tipped dissector and the other end is curetted
- **USE:** In lacrimal sac surgery

BONE GOUGE



- It consists of a stout metallic handle, one end of which is longitudinally scooped. The edges of the scoop are sharp
- **USE:** To smoothen the irregularly cut margins of the bone by nibbling small projecting bone and in DCR operation and in orbitotomy operation

OPTIC NERVE GUIDE /ENUCLEATION SPOON



- It is a spoon shaped instrument with a central cleavage
- USE: To engage the optic nerve during enucleation

EVISCKERATION SPATULA



- USE : To separate out the uveal tissue from the sclera during evisceration operation

EVISCKERATION CURETTE



- USE: To curette out the intraocular contents during evisceration operation

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THANK YOU

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