



Video Journal of ISMSICS

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Dr Prathmesh Mehta is an accomplished and highly experienced Cataract, Refractive and Cornea transplant surgeon, practicing in Bandra, Mumbai. He completed his training in ophthalmology in Feb 2010 from the world renowned Aravind Eye Care System. He took further training in Cornea speciality from Aravind, Pondicherry. He was heading the cornea service at Vasan Eye Care, Saidapet Chennai

and Chaithanya Eye Hospital, Trivandrum. His main areas of interest are complex cataract, keratoconus and lamellar corneal surgery. He has trained several national and international budding surgeons in cataract and corneal transplant surgery. He has presented in various national and interna-

tional conferences and is an invited speaker in various meetings. Recently, as a part of mission work, he went to Cambodia, Khmer Sight Mission, to provide free vision restoring surgeries to the natives.

The entire team of ISMSICS wishes him all the best in his future endeavors.

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From the Editor's Desk

As we finish our post-graduation, most of us are in a dilemma, whether to set up our own practice, get into a corporate job, or join government medical services. One question that remains is, 'Can I do Phaco?' Even when we discuss our future prospects with our seniors, the same question comes up, 'Can you do Phaco?' Every interviewer at every job interview asks, 'Can you do Phaco?'

I am yet to come across a person who asks me, '**Can you do a good cataract surgery?**'

The primary aim of a cataract surgery is visual rehabilitation. Blanket therapy of zero refraction is never the aim. Knowing the needs of the patient and then planning the refractive outcome would be a better option. For example, if I am giving zero refraction to an old female whose major part of work is to watch TV and read newspaper, I am committing at a major error in the application of my concepts. A little myopic astigmatism between 70 - 110 degrees will give her a good depth of vision, at all the distances she has to deal with including use of a smartphone. My purpose is to convey that visual rehabilitation is not achieving zero refraction. Even if you want to keep the patient spectacle free, assess the requirements and kinds of jobs your patient needs to perform. If I am to give zero refraction in both the eyes of a banker, I have made him dependent on near and intermediate vision glasses for at least 8 hours a day. Though it does boost my ego, my patient is dependent on glasses. How many people do we actually meet who have to work beyond 6 metres for a major part of the day?

I would call a cataract surgery good if, patient's visual demands have been fulfilled, endothelium is not compromised, pupil is round, IOL is placed in the bag with good centration, and the wound is well sealed with limited surgically in-

duced astigmatism. Where is the expensive Phaco machine or Femto Laser in these criteria? The results lie in one's pre-operative workup and planning, surgery itself, and post-operative management.

This is where I put Manual SICS in the picture. A surgeon who is fulfilling these criteria while performing a Manual SICS is bound to give not only good, but even better results than any other surgery performed with the aid of high end equipment.

Manual SICS, in my view has certain advantages over other reportedly more advanced cataract removal techniques. These are:

- Scleral entry wound is covered and is cut off from the external environment by the tenon's and conjunctiva at the end of the surgery. In addition to the physical protection, sclera being vascular structure heals faster. So safety becomes better.

- Manual SICS has more SIA (Surgically Induced Astigmatism). Yes, I consider it as an advantage. It helps me to neutralize pre-existing corneal astigmatism by placing the incision on steep axis. It also helps me to induce some against the rule astigmatism in non-astigmatic cases for better intermediate and near vision. It has reduced my dependence on Torics and Multifocals.

- All advantages of a closed chamber surgery.

- An easier learning curve with lesser complications keeps the morale of a surgeon high.

- Investment required to convert to an advanced sutureless surgery is the least. It gives one

not only equivalent, but arguably better results. The only investment is ones time to develop the skill. And that remains the same for every surgery.

My idea here is to pass on this message to the young that one doesn't add an extra feather in his or her cap by just doing a Phaco. One needs to develop good surgical skills. It doesn't matter whether one has performed Phaco or Manual SICS, or even ECCE. Patient needs good result, which depends upon the command on the '*artist within*' that one possesses, and not on machine power.

Manual SICS is not something to be ashamed of. I do Manual SICS and I do it with pride. I can deliver with just my hands, what a Phaco surgeon or a surgeon performing FLACS (Femto Laser Assisted Cataract Surgery) delivers after spending a fortune on this equipment. Manual SICS needs more studies and publications to prove its stature. So, perform Manual SICS, share your results, publish your results, and listen to the stalwarts and not the trade.

Feel free to write to us and share your difficulties and problems. We assure you that your doubts will be addressed by most experienced surgeons on our panel with scientific data to support our answers.

Manual SICS is not just a surgery, but an 'Art, Craft, and Science'. And it is here, to stay.

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SICS or Phacoemulsification: Corneal incision forms the basis of good surgery.

Corneal incision forms the first basic and most important step for a successful completion of good SICS or phacoemulsification. The main characters of a good incision are:-

- It should be self-sealing
- Non-leaky
- Not very tight
- Long enough to ensure a secure wound closure, and Astigmatically neutral

Phacoemulsification

The incisions commonly used in phacoemulsification are.

- Primary side port incision
- Secondary side port incision
- Scleral tunnel
- Clear corneal incisions
- Side port incision

Side port Incision

Normally 2 sideport incisions are made; primary and secondary

It should ideally be 1 to 1.5mm clear corneal incision.

A square tunnel is preferable

Primary side port incision is usually made at 90 degree from the main port incision on the right side for the right handed surgeon and left side for the left handed surgeon. Usually made with 15 degree lance tip and about 2/3 of the lance tip is entered in the anterior chamber for the primary incision. As I am a right handed surgeon I will be explaining the uses in those perspective

Uses of primary side port incision

- Injection of preservative free anaesthetic
- Injection of trypan blue
- Injection of viscoadhesive devices
- Fashioning of capsulorrhexis
- Injection of air
- Use of dialler
- Use of irrigation aspiration canula

Injection of intracameral antibiotics

Secondary side port incision is usually made at about 15 to 20 degree clockwise from the main port incision. It is usually made for the stability of the eye-ball. About 1/3rd of the lance tip is entered into the anterior chamber for the secondary incision

Uses of secondary side port incision

(Some surgeons donot make a secondary side port incision and prefer making just single primary side post incision.) For those who make a secondary incision uses are

To make the eye ball stable during surgery in topical anaesthesia

Injection of intracameral antibiotics

Use of chopper and dialler

Common problems encountered

Scleral location

Usually made accidentally

More posterior location

Because of the vascularity it bleeds more

Due to tendency of the scleral tissue to retract it increase the incidence of wound leak

And also increase the incidence of prolapse of iris

Management: in case of excess prolapse of the iris, a secondary side port is fashioned out and these kind of incisions need to be sutured in the end of the surgery

Use of Excess force while entering

Cause

Unnecessary force to fashion out the side port entry

Usually happens with a blunt instrument which can lead to irregularity in the entry

This is usually seen while passing canula (eg viscocanula) which usually cause hindrance in the entry

Prevention

This can be prevented with the help of sharp instrument

Management : in case of excessive difficulty a secondary side port can be fashioned out

Scleral tunnel

An ideal tunnel

minimum width of 3mm in the center
flares out at the periphery.

depth of $1/3$ to $1/2$ thickness of sclera is ideal (300 to 500m)

Common problems encountered

Premature entry:-

Cause

Early perforation of the cornea

Can happen because of very sharp instrument

Not moving the knife in accordance with curvature of dome of cornea

Initial groove is too deep

Result

The smaller corneal lip thus produced will not have an efficient valvular function resulting in an unstable chamber and repeated iris prolapse.

Management:-

In case of soft cataract, with fully dilated pupil and no iris prolapse, one may proceed with the surgery as planned.

If the pupil is not well dilated or there is repeated iris prolapse or the cataract is hard then the surgery will have to be modified.

If the initial tunnel is made at 12 O'clock, one can suture the initial incision and complete the nucleotomy from a clear corneal temporal incision. The original 12 O'clock tunnel can be used for lens insertion. After IOL implantation, suture the wound.

Scleral disinsertion

Cause

This occurs if the initial cut is more than 80% to 90% deep.

Results

This results in wound gape and astigmatism.

Management:-

After carefully estimating the depth; the tunnel construction should be initiated at $1/3^{\text{rd}}$ to $1/2$ the depth; rather than initiating from the base of the initial cut.

Torn edges:-

Cause

construction of the wound with blunt instrument during surgery or while enlarging the incision for IOL insertion.

Results

With a torn edge the incision loses its self-sealing capacity and may lead to a leaking wound.

Prevention

Use of sharp instruments



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