

Sri Lakshmi Narayana Institute of Medical Sciences

Annexure 1

Date 18/12/2017

From
Prof.D.Baba, MS
Professor and Head,
Ophthalmology,
Sri Lakshmi Narayana Institute Of Medical Science,
Bharath Institute of Higher Education and Research,
Chennai

To
The Dean,
Sri Lakshmi Narayana Institute Of Medical Sciences,
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Permission to conduct value-added course: PENETRATING KERATOPLASTY

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value added course titled: PENETRATING KERATOPLASTY on JAN-2018 – APR -2018. We solicit your kind permission for the same.

Kind Regards

PROF.D.BABA, MS
HOD, OPHTHALMOLOGY

FOR THE USE OF DEANS OFFICE.

Names of Committee members for evaluating the course.

The Dean: Prof.K.Balagurumurthi, M.S.

The HOD: Prof.D.Baba M.S.

The Expert: Dr.Muthukrishnan DN&M.S.

The committee has discussed about the course and is approved

Muthukrishnan
Subject Expert

Prof. D. Baba
PROF.D.BABA, MS, HOD
DEPARTMENT OF OPHTHALMOLOGY,
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES,
Bharath Institute of Higher Education and Research,
Chennai-600 030



OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

[Recognised by Medical Council of India, Ministry of Health letter No. U12012/249/2005-ME (P-II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Ref. No. SLIMS/Dean Off/VAC / OPII09

Date: 18.12.2017

From
The Dean
Sri Lakshmi Narayana Institute of Medical sciences,
Pondicherry - 605502

To
The Registrar,
Bharath Institute of Higher Education and Research,
Chennai - 600073.

Respected Sir

Sub: Request for permission and approval of Syllabus for certificate course (Value
Added course) for the academic year 2017-2018 - Reg
Ref: Requesting letter received from Departments

With reference to the above, herewith forwarding the proposed list of Value-added
courses for necessary permission and approval of syllabus to conduct the same.

1. PENETRATING KERATOPLASTY
2. RETINOBLASTOMA

This is for your kind information and needful action.

Thanking you

Yours faithfully

[DEAN]

EncP's:

1. Requesting letter received from department
2. Syllabus of the course
3. Details of faculty handling course

**Sri Lakshmi Narayana Institute of Medical Sciences,
Puducherry**

VALUE ADDED COURSE –

1. PENETRATING KERATOPLASTY
2. RETINOBLASTOMA

COURSE CO-ORDINATOR DETAILS

Faculty Name: Prof.D.Baba, MS

Email ID: ophthalmologyprofba@gmail.com

Mobile number: 8585485988



Bharath

INSTITUTE OF HIGHER EDUCATION AND RESEARCH
Bharath Institute of Higher Education and Research, Chennai - 600073.

Ref. No. BHER/VAC /OPH09

Date: 20.12.2017

From

The Registrar,
Bharath Institute of Higher Education and Research,
Chennai - 600073.

To

The Dean
Sri Laxshmi Narayana Institute of Medical sciences,
Pondicherry - 605502

Sir / Madam,

Sub: Approval of Syllabus to conduct certificate course (Value Added course) for the academic year 2017-2018 Reg.

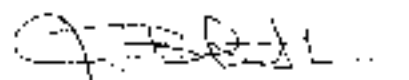
Ref: Ref. No. SLIMS/Dean OI/VAC /OPH09 Dated: 18.12.2017

With reference to the above, it is to inform that the proposal submitted to conduct Value Added Course has been accepted and approved by BHER, council meeting. List of the VAC are mentioned below for the academic year 2017- 2018. The abstract of the VAC course completion detail should be submitted to the Registrar office.

1. PENETRATING KERATOPLASTY
2. RETINOBLASTOMA

Thanking you

Yours faithfully


REGISTRAR



OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 002.

[Recognized by Medical Council of India, Ministry of Health letter No. U/1201/2019/2005-ME (P-4) dt. 11/07/2011]
[Alliated to Bharath University, Chennai - TN]

Circular

3.12.2017

Sub: Organising Value-added Course: PENETRATING KERATOPLASTY

With reference to the above mentioned subject, it is to bring to your notice that Sri Lakshmi Narayana Institute of Medical Sciences, Bharath Institute of Higher Education and Research is organizing **"PENETRATING KERATOPLASTY"**. The course content and registration form is enclosed below."

The application must reach the institution along with all the necessary documents as mentioned. The hard copy of the application should be sent to the institution by registered/ speed post only so as to reach on or before 30th DEC 2017. Applications received after the mentioned date shall not be entertained under any circumstances.

Dean

Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram Village, Vilianur Commune,
Kudapakkam Post, Pudukkottai District,
Puducherry - 605 002.

Encl: Copy of Course content

VALUE ADDED COURSE

1. Name of the programme & Code

Penetrating Keratoplasty

2. Duration & Period

30 hrs & Jan -2018 -- Apr -2018

3. Information Brochure and Course Content of Value Added Courses

Enclosed as Annexure- I

4. List of students enrolled

Enclosed as Annexure- II

5. Assessment procedures:

Multiple choice questions. *Enclosed as Annexure- III*

6. Certificate model

Enclosed as Annexure- IV

7. No. of times offered during the same year:

Jan -2018 – Apr -2018 (1)

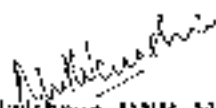
8. Year of discontinuation: 2018

9. Summary report of each program year-wise

Sl. No	Course Code	Value Added Course- Jan -2018 – Apr -2018		Strength & Year
		Course Name	Resource Persons	
1	OPH09	Penetrating Keratoplasty	Dr.Muthukrishnan DNB, M.S,	30 2017

10. Course Feed Back

Enclosed as Annexure- V


Dr.Muthukrishnan, DNB, M.S,
(Asst.Prof)

RESOURCE PERSON


**Prof. D. Baba, M.S,- HOD
COORDINATOR**

DEPARTMENT HEAD
DEPARTMENT OF OPHTHALMOLOGY
AND ORBITAL AND ADJUNCTIVE ORGANS
K. J. Somaiya Institute of Postgraduate Medical Education

Annexure 2 – Course Proposal

Course Title: PENETRATING KERATOPLASTY

Course Objective:

1. Definition of keratoplasty
2. Types of keratoplasty
3. Donor graft preparation
4. Host bed trephination
5. Interrupted & continuous sutures
6. Eye banks and their uses
7. Enucleation of cornea harvesting
8. Storage media

Course Outcome: On successful completion of the course the students will be able to understand penetrating keratoplasty, its indications, method of performing the same and follow up in the post operative period.

Course Audience: MBBS UNDERGRADUATES

Course Coordinator: PROF.D.BABA, MS,

Course Faculties with Qualification and Designation:

1. Prof.D.Babu, MS, - HOD Ophthalmology
2. Dr.Muthukrishnan, DNB, M.S,

Course Curriculum/Topics with schedule (Min of 30 hours)

SING	Date	Topic	Time	Hours
1.	10/2/2018	<u>Definition of keratoplasty</u>	4-6PM	2
2.	15/2/2018	<u>Types of keratoplasty</u>	4-7PM	3
3.	22/2/2018	<u>Types of keratoplasty</u>	4-6PM	3
4.	25/2/2018	<u>Donor graft preparation</u>	4-6PM	2
5.	30/2/2018	<u>Donor graft preparation</u>	4-7PM	3
6.	10/3/2018	<u>Host bed trephination</u>	4-7PM	4
7.	13/3/2018	<u>Host bed trephination</u>	4-7PM	4
8.	15/3/2018	<u>Interrupted & continuous sutures</u>	2-6PM	2
9.	17/3/2018	<u>Eye banks and their uses</u>	4-6PM	2
10.	20/3/2018	<u>Eye banks and their uses</u>	4-7PM	3
11.	21/3/2018	<u>Enucleation of cornea harvesting</u>	4-6PM	2

12.	28/3/2018	Storage media	4-6PM	2
			TOTAL	30
			HOURS	

REFERENCE BOOKS: (Minimum 2)

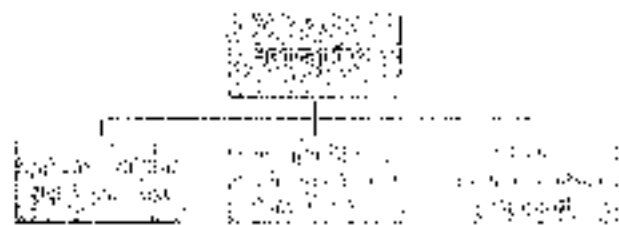
1. JACK J KANSKI clinical ophthalmology a systemic approach-6th edition,
2. PARSON'S Diseases of the eye – 19th edition

PENETRATING KERATOPLASTY

Penetrating keratoplasty is the surgical removal of diseased or scarred cornea from the host and replaced with full thickness cornea from the donor.

- von Hippel, in 1886, was the first person to successfully perform a lamellar corneal graft in a human

INDICATIONS



Optical indications

1. Pseudophakic or aphakic bullous keratopathy
2. Primary corneal endotheliopathies- Fuchs,CHED,PPD
3. Corneal ectasias- keratoconus, keratoglobus
4. Congenital corneal opacities- peters anomaly
5. Acquired corneal scars- post traumatic, post infectious, post viral keratitis
6. Failed grafts/corneal dystrophies- macular corneal dystrophy, schnyder crystalline dystrophy if vision deteriorates

Therapeutic Indications

- Non healing infectious keratitis
- Infectious keratitis with perforation
- Post chemical injury with corneal melt

Tectonic indications

- To reconstruct ocular surface in case of corneal perforations
- Or strengthen the cornea in cases of corneal melts in corneal thinning

CONTRAINDICATIONS FOR THE USE OF DONOR TISSUE FOR KERATOPLASTY

1. Death of unknown cause
2. Death from CNS disease of unknown cause
3. Creutzfeldt Jacob disease
4. SSPE
5. Progressive multifocal leucoencephalopathy
6. Congenital rubella
7. Reyes syndrome
8. Active viral encephalitis
9. Active septicaemia (bacteraemia, viraemia, fungemia)
10. Active bacterial or fungal endocarditis
11. Active viral hepatitis
12. Rabies
13. Active leukemias
14. Acute disseminated lymphomas
15. High risk for HIV infection, HIV patients
16. HEPATITIS B surface antigen positive donors
17. HEPATITIS C seropositive
18. Ocular tumors- malignant melanoma, retinoblastoma
19. Active intraocular inflammation
20. Congenital or acquired disorders of the eye that would preclude a successful outcome for the intended use (e.g., a central donor corneal scar for an intended penetrating keratoplasty, keratoconus, and keratoglobus)
21. Pterygia or other superficial disorders of the conjunctiva or corneal surface involving the central optical area of the corneal button

Prior intraocular or anterior segment surgery:

- a. Refractive corneal procedures, e.g., radial keratotomy, lamellar inserts, etc.
- b. Laser photorefractive surgery is allowed to be used in cases of tectonic grafting and posterior lamellar procedures

- c. Corneas from patients with anterior segment (e.g., cataract, intraocular lens, glaucoma filtration) surgery may be used if screened by specular microscopy and meet the Eye Bank's endothelial standards
- d. Laser surgical procedures such as argon laser trabeculoplasty and retinal and panretinal photocoagulation do not necessarily preclude use for penetrating keratoplasty but should be cleared by the Medical Director

Specific exclusion criteria for children

- Children meeting any of the exclusionary criteria listed above for adults should not be accepted as donors
- Children born to mothers with HIV infection or mothers who meet the behavioral or laboratory exclusionary criteria for adult donors
- regardless of their HIV status should not be accepted as donors unless HIV infection can be definitely excluded in the child as follows:
- Children >18 months of age who are born to mothers with or at risk for HIV infection, who have not been breast fed within the last
- 12 months, and whose HIV antibody tests, physical examination, and review of medical records do not indicate evidence of HIV infection can be accepted as donors
- Children <18 months of age who are born to mothers with or at risk for HIV infection or children of mothers with or at risk of HIV
- infection who have been breast fed within the past 12 months should not be accepted as donors regardless of their HIV tests results

Recipient considerations- preoperative evaluation

- Pre existing pathology

1. Visual potential assessment

Visual acuity, pupillary reflexes, coexistent pathologies

2. Anterior segment examination:

- Site, density of corneal scar
- Tear film stability, dry eye
- Corneal sensation
- Ocular surface disorders
- Pre existing pathology

Pre operative preparation

1. Anti infective agents:

Topical 5% povidone iodine drops before surgery

2. IOP control

Ocular compression- with Honans ballon- 30 mm hg for 30 min

Preoperative mannitol

3. Anesthesia: peribulbar block with lidocaine and bupivacaine

4. Pupil dilation:

2% pilocarpine- to reduce lens damage

Pupil dilation- If planned for cataract extraction

Surgical procedure

Globe exposure:

- Appropriate lid speculum- minimal pressure on globe
- Superior and inferior recti suture or
- Corneal traction suture

Scleral fixation ring:

- Called FLIERINGA RING to prevent globe collapse in aphaxic patients
- Sutured 3-4mm from limbus
- Size 17 or 18 mm rings commonly used

Host cornea marking

- Geometric axis- center of horizontal and vertical diameter of cornea.
- Optical axis- center of pupil – which is slightly nasal
- Center marked with gentian violet
- a stained 8 or 12 prong radial marker – to aid in placement of sutures for better alignment and symmetry

IN KERATOCONUS graft is kept decentered according to the situation of the cone.

Trephine sizing

trephine size depends on various factors

- Host cornea size

- Pathology size
- Rejection risk
- size < 6.5 mm- high astigmatism,
- And less endothelium transferred which is less favourable in endothelial diseases
- Size > 8.5 mm grafts- increased risk of PAS and hence glaucoma
- Increased risk of graft rejection- as close proximity to limbus
- **HOST CORNEA DIAMETER:**
- 11.5mm or less- trephine size 7.5 or 7.75mm
- If 12.5mm or more- trephine size 8.25 or 8.5mm is chosen
- Donor graft of same size as host size is considered in cases of keratoconus in order to decrease postoperative myopia.

DONOR TREPHINATION

- Having decided the size of the graft, the surgeon should remove the donor button before removing the host button.
- removed from a whole globe or more commonly, from a corneoscleral button.
- The corneoscleral button is placed endothelial side up on a Teflon block and trephination is performed with disposable trephines.
- Donor buttons trephined from the posterior corneal surface are slightly smaller in diameter than buttons trephined from the anterior surface.

OVERSIZE DONOR BUTTON BY 0.25MM ?

- The use of a 0.25 mm oversize in the donor counteracts the smaller graft size produced by endothelial trephination, and produces fairly equivalent matching of the donor and recipient trephination.
- Oversizing by 0.5 mm decreases the risk of postoperative glaucoma but increases the steepness of the graft and myopia
- Donor button –coated with visco for optimal endothelial protection or put in storage media until needed

What is The Ideal trephination.?

- is one that produces a central, uniform cut, with vertical y aligned edges, while avoiding damage to the intraocular structures.
- Trephination types:

a. Suction-assisted trephines - Barron Hessburg, Hunna, and Krumeich trephination systems.

b.) Free standing, handle-mounted trephines- Troutman Punch and Scharinger trephine.

Trephines



Host cornea trephination

- irregular trephination of the host bed and donor are
- important factors in determining the degree of postoperative astigmatism
- Aim of recipient trephination is to ensure a
- **round, regular, and well-centered recipient bed.**
- The surgeon ensures that the trephine is held perpendicular to the cornea and
- centered over it using the previously marked center as a guide
- The peripheral corneal ring between the blade and the limbus should be even to ensure optimal centration
- In order to stabilize the globe, the assistant exerts mild traction on the recti sutures and slightly up lifts the globe, while the surgeon may

further grasp the limbus with a toothed forceps for additional stability.

- The handle with attached trephine is then gently rotated, with a mild downward compressive force. The cornea is cut by making smooth back-and-forth rotations of the trephine around its axis while applying firm even pressure.

- Excessive downward pressure may result in corneal distortion, leading to an undercut, sloping trephination edge.
- The anterior chamber is entered in a controlled manner, using a sharp blade held at an angle
- Viscoelastic is then introduced to reform the anterior chamber

- and to discourage prolapse of the iris, lens, and vitreous, as the remaining cornea is excised.

- The corneal excision is then completed with corneal scissors.
- Remnant tags of corneal tissue or Descemet's membrane are carefully trimmed flush with the scissors.
- **Suction systems** : have the advantage of being able to retain the position of the trephine during trephination without undue downwards compression.

Concomitant procedures

- After the host button has been excised, relevant concomitant procedures, such as cataract extraction, IOL implantation, anterior vitrectomy, or pupil reconstruction
- Lysis of peripheral anterior synechiae,
- reconstruction of the iris and pupil margin, and IOL lens exchange are done

Suturing of donor corneal tissue

- A viscoelastic agent is applied into the anterior chamber as well as the edges of the recipient corneal bed just prior to placement of the donor button, so as to protect the endothelium of the donor cornea against contact with other intraocular structures during suturing.

- Using a corneal spatula, the donor cornea is scooped out from the Teflon block and placed over the host bed.
- With a double-toothed forceps, the superior edge of the donor cornea is grasped and the needle of a 10-nylon suture is passed radially through the two tips of this forceps

Placement of cardinal sutures

- The primary fixation of the graft is usually by four interrupted 10-0 nylon sutures, placed in the four quadrants 90° apart.
- **The second suture at 6 o'clock is particularly important as it determines the final position and symmetric geometry of the donor cornea on the**

recipient, and helps in minimizing postoperative astigmatism.

- The remaining 3 and 9 o'clock cardinal sutures are then placed.
- The anterior chamber is reformed with viscoelastic
- Suturing is continued, taking care to ensure even and radial distribution

of the sutures

Suturing techniques

1. Interrupted sutures
2. Continuous / running sutures:

- Torque
- Anti torque
- No torque

3. Combined

Continuous and interrupted

suture materials

- 10-0 monofilament nylon- good tensile strength, low tissue reactivity
- 10-0 or 11-0 polypropylene- for continuous suture

Interrupted sutures

Advantages:

- Allows selective removal of each suture
- Tight closure of the wound
- Disadvantages: more inflammation and vascularisation because of more knots

Indications

- Vascularisation in host corneal bed
- Multiple failed grafts
- Inflammatory conditions
- Paediatric grafts and therapeutic grafts



Continuous suturing

Advantages:

Easy of placement and removal

Enable adjusting suture tension to control astigmatism in early postop period

Disadvantages

1.) To be done meticulously- single irregular bite can cause severe astigmatism

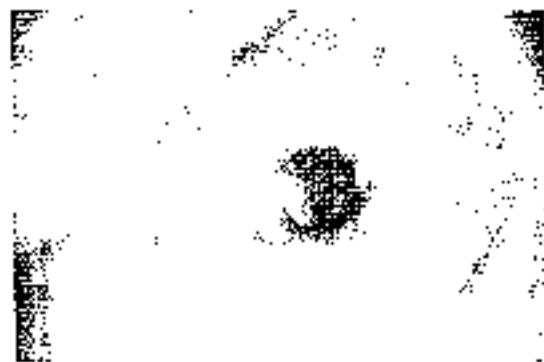
2.) even if a single loop of the suture should

break, tear through, or loosen, it is not unusual to find that several

adjacent loops also loosen, leading to significant wound

irregularity and astigmatism, or even wound dehiscence that requires surgical repair

Single continuous suture



Double running continuous suture

- Double running continuous sutures are used
- when the host bed is uniformly thick and avascular, and the wound is expected to heal evenly, such as in keratoconus or bullous keratopathy.
- Torque effect induced by first suture is counteracted by the other

- Two 10-0 prolene or one 10-0 prolene and one polypropylene can be used

Combined interrupted and continuous

One of the most commonly utilized suture patterns includes 12 interrupted sutures and a 12 bite continuous running suture (CS), although eight interrupted sutures and a 16-bite continuous running suture is also commonly employed.

After placement of the four cardinal interrupted sutures, eight additional interrupted sutures are placed with 10-0 nylon suture. After the sutures are trimmed and the knots are buried, the CS is completed.



Torque

- Torque,

here radial bites are equidistant between each of the interrupted sutures



Antitorque technique

- Here the apex of each bite in the donor cornea forms an isosceles triangle with each interrupted suture



Suture depth

- should be passed deeply into the stroma at an equivalent depth
- for both donor and recipient to allow accurate anterior–posterior donor–recipient apposition.
- Deep stromal bites are taken at ~80–90% depth, with care taken not to penetrate Descemet's layer, which would contribute to wound leak at the end of the operation.
- Sutures taken equidistant (0.75mm) on both sides
- Extra care should be taken to prevent under- or overriding of the graft
- All knots should be buried at the donor side.
- particularly important that the donor and recipient edges are

aligned properly and that neither an override nor an underide

- Poor apposition can interfere with reepithelialization of the graft and may lead to postoperative astigmatism.
- an intraoperative keratoscope would aid in distributing the tension of the graft by adjusting the tightness of sutures, thereby reducing postoperative astigmatism.

AC REFORMATION

- At the end of the procedure, the anterior chamber should be reformed with viscoelastic substance or saline solution.
- The wound is then checked for water tightness with a dry sponge.
- The surgery is completed with subconjunctival injections of antibiotics and steroids.

Postoperative management

During the postoperative period, attention should be focused on

- the clarity of the graft,
- integrity of the wound and sutures,
- status of the ocular surface,
- Amount of anterior chamber activity,
- IOP (increased- d/t inflammation, retained visco or pre-existing glaucoma)
- the presence of signs of infection or rejection

Topical treatment

1.) Broad spectrum antibiotic-few weeks

2.) Steroids- 1% predacetate or 0.1% dexamethasone eye drops 2-3 hourly to control inflammation

- Continued for 12 months – on low dose steroids to prevent rejection.
- Follow up- IOP monitoring, cataractous changes

3.) Lubricating eye drops:

to protect the graft and enhance epithelial healing.

4.) topical antiglaucoma medications if IOP is high.

Immunosuppression for highrisk grafts

- Especially in repeat grafts
- r/o infections
- **PREDNISOLONE:**
1mg/kg/day tapered over 3 weeks
- **Cyclosporin A:**
Initial dose- 4-5mg/kg/day with maintenance dose of 200-250mcg/ml
- Ocular side effect : mild epitheliopathy
- Systemic: hypertension, nephrotoxicity

Suture removal

- Interrupted sutures – can be removed before 6-12 months
- Combined interrupted- at steep meridian- at 3 months
- Continuous sutures after 1 year
- Loose, vascularised sutures can be removed
- Always suture removed from recipient side
- Care taken not to pull the knot through the graft host junction

VALUE ADDED COURSEPENETRATING KERATOPLASTY

List of Students Enrolled JAN - 2018 - APR -2018

Sl.No	University Reg.No.	NAME OF THE STUDENTS	SIGNATURE
1	U18MB251	AASHLESIA DHARKAR	Aashlesha Dharkar
2	U18MB252	ABINAYAVARTHINI N	Abinayavarthini N
3	U18MB253	ADARSH KUMAR	Adarsh Kumar
4	U18MB254	AISWARYA PREMRAJ	Aiswarya Premraj
5	U18MB255	AKSHAYA R	Akshaya R
6	U18MB256	ALOK PANDA	Alok Panda
7	U18MB257	AMULYA N GOVDA	Amulya N Govda
8	U18MB258	ANINDA CHAKRABORTY	Aninda Chakraborty
9	U18MB259	ANJALI SADIWANI	Anjali Sadiwani
10	U18MB260	ANKU KUMAR	Anku Kumar
11	U18MB261	ANNIE WELLY	Annie Welly
12	U18MB262	ANTONY ROHAN	Antony Rohan
13	U18MB263	ANUPAMA	Anupama
14	U18MB264	AQSA QURESHI	Aqsa Qureshi
15	U18MB265	ARSHAD AMIN	Arshad Amin
16	U18MB266	ASHIQUE RIFANA M	Ashique Rifana M
17	U10MB267	ASHWIN R	Ashwin R
18	U18MB268	ASHWINIK	Ashwinik
19	U10MB269	ASMIT KESHAV	Asmit Keshav
20	U18MB270	AVIRAL TYAGI	Aviral Tyagi
21	U10MB271	AYUSH JAISWAL	Ayush Jaiswal

22	U18MB272	BANDHAM SANKERTHANA	<i>Bandham Sankertana</i>
23	U18MB273	BORIS NAMBRAM	<i>Boris Nambram</i>
24	U18MB274	BHICHHAMMAGARI SOURABH REDDY	<i>Bhichhammagari Sourabh Reddy</i>
25	U18MB275	CHARAN VARMA CA	<i>Charan Varma</i>
26	U18MB276	CHARU SAI	<i>Charu Sai</i>
27	U18MB277	CHINKA SARAN SAI	<i>Chinka Saran Sai</i>
28	U18MB270	CUTPIECEWALA ALI ASGAR MOHAMMED	<i>Cutpiecewala Ali Asgar Mohammed</i>
29	U18MB279	DATTATREYA BHATTACHARJEE	<i>Dattatreya Bhattacharjee</i>
30	U18MB200	DEEOPRIYA DEY	<i>Deeopriya Dey</i>

Muthukrishnan
DR.V.Muthukrishnan. DNB, M.S,
RESOURCE PERSON

D. Baba
Prof.D.Baba, MS-IID
COORDINATOR
 PROJECT COORDINATOR
 DEPARTMENT OF CHEMISTRY
 SRMISTM Institute of Science and Technology
 Kattankulathur - 603203



PENETRATING KERATOPLASTY

MULTIPLE CHOICE QUESTIONS

Course Code: OPH09

1. ANSWER ALL THE QUESTIONS

1. Keratoplasty means removal of diseased

- a) Cornea ✓
- b) Conjunctiva
- c) Sclera
- d) Iris

2. Tectonic indications includes

- a) Perforated corneal ulcer ✓
- b) Scarred cornea
- c) Keratoconus
- d) Cosmetic reasons

3. Suturing techniques includes

- a) Continuous sutures
- b) Interrupted sutures
- c) Continuous & Interrupted sutures
- d) All of the above: ✓

4. 1st suture is placed at

- a) 12^o clock Position ✓
- b) 6^o clock position
- c) 9^o clock position
- d) 3^o clock position



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AND RESEARCH**

5. Most important suture which determines the symmetriceometry is at
- a) 12^o clock
 - b) 6^o clock ✓
 - c) 3^o clock
 - d) 9^o clock position
6. Corneal Suturing is done with
- a) 2-0-silk
 - b) 5-0-vicryl
 - c) 10-0-nylon ✓
 - d) 6-0-catgut
7. Corneal sutures are placed at depth of
- a) 50% of cornea
 - b) 60% ✓
 - c) 10%
 - d) 80-90% of corneal thickness
8. Optical Indications includes
- a) PBK
 - b) Keratoconus
 - c) CHED
 - d) All of above ✓
9. Contraindications for donor cornea includes
- a) Rabies
 - b) SSPE
 - c) Hepatitis
 - d) All of above ✓



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AND RESEARCH**

10. Penetrating keratoplasty involves replacement of

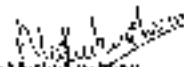
- a) 50% cornea
- b) Corneal endothelium
- c) Whole cornea ✓
- d) Anterior stroma




Sri Lakshmi Narayana Institute of Medical Sciences



THIS is to certify that ANSHULSITA BHASKAR (UW888251) has actively participated in the Value Added Course on **DIAGNOSTIC KERATOPLASTY** held during JAN 2018 TO APR 2018 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry - 605 002, India


Dr. Anitha Krishnan,
DNB - MS - Asst Professor
RESEARCH PERSON

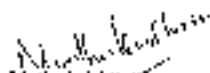

Prof. A. Balu, MS,
Prof & HOD - Ophthalmology
COORDINATOR




Sri Lakshmi Narayana Institute of Medical Sciences



This is to certify that **MUNAYYARAJUNES (U18503754)** has actively participated in the Video Course on **PENETRATING KERATOPLASTY** held during **JANUARY TO APRIL 2018** Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry - 605 002 India.


Dr. Muthukrishnan
DMD, MSc, Asst Professor
RESEARCH PERSON


Prof. D. Indira, MSc,
Prof. & HOD - Optical
CLINICIAN, FRC

Student Feedback Form

Course Name: **PENETRATING KERATOPLASTY**

Subject Code: **DPH09**

Name of Student _____ Roll No : _____

We are constantly looking to improve our classes and deliver the best training to you. Your evaluations, comments and suggestions will help us to improve our performance.

Sl. NO	Particulars	1	2	3	4	5
1	Objective of the course is clear					✓
2	Course contents met with your expectations					✓
3	Lecturer's lecture was well planned					✓
4	Lectures were clear and easy to understand					✓
5	Teaching aids were effective					✓
6	Instructors encourage interaction and were helpful					✓
7	The level of the course					✓
8	Overall rating of the course					

* Rating: 5 - Outstanding; 4 - Excellent; 3 - Good; 2 - Satisfactory; 1 - Not Satisfactory

Suggestions/Query:

--

Andalabha Murali
Signature

Date: _____

Annexure 5

Date : 29/4/2018

From
Prof.D.Babu, MS,
Professor and Head,
Ophthalmology,
Sri Lakshmi Narayana Institute Of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Through Proper Channel

To
The Dean,
Sri Lakshmi Narayana Institute Of Medical Sciences
Bharath Institute of Higher Education and Research,
Chennai.

Sub: Completion of value-added course: PENETRATING KERATOPLASTY

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: **PENETRATING KERATOPLASTY** for 30 students in JAN-APR 2018. We solicit your kind action to send certificates for the participants, that is attached with this letter. Also, I am attaching the photographs captured during the conduct of the course.

Kind Regards

Prof.D.Babu, MS

HOD, Ophthalmology

Encl: Certificates

Photographs