



Sri Lakshmi Narayana Institute of Medical Sciences

Annexure 1

Date 5/5/2020

From
Prof.D.Baba, MS
Professor and Head,
Ophthalmology,
Sri Lakshmi Narayana Institute Of Medical Sciences
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: AMNIOTIC MEMBRANE GRAFT

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: AMNIOTIC MEMBRANE GRAFT on **JULY 2020 TO OCT 2020**. 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:

The HOD:

The Expert:

The committee has discussed about the course and is approved.

DEAN
Prof.K.BALAGURUNATHAN,MS
(General surgeon)
SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
USUDU, PONDICHERRY

Subject Expert

PROFESSOR & HOD
HOD
DEPARTMENT OF OPHTHALMOLOGY,
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
PUDUCHERRY-605 002.



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. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Ref. No. SLIMS/Dean Off/VAC / OPH03

Date: 25.05.2020

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 2020-2021 - 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. SQUINT EVALUATION
2. LASERS IN OPHTHALMOLOGY
3. AMNIOTIC MEMBRANE GRAFT

This is for your kind information and needful action.

Thanking you

Yours faithfully



[DEAN]

Encl'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. SQUINT EVALUATION
2. LASERS IN OPHTHALMOLOGY
3. AMNIOTIC MEMBRANE GRAFT

COURSE CO-ORDINATOR DETAILS

Faculty Name: Prof.D.Baba, MS

Email ID: ophthalmologyprof@gmail.com

Mobile number: 8585485988



Bharath

INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

Ref. No. BHIER/ VAC / OPH03

Date: 12.06.2020

From

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

To

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

Sir / Madam,

Sub: Approval of Syllabus to conduct certificate course (Value Added course) for the academic year 2020-2021 – Reg.
Ref: Ref. No. SLIMS/Dean Off/VAC /OPH03 Dated: 25.05.2020

With reference to the above, it is to inform that the proposal submitted to conduct Value Added Course has been accepted and approved by BIHER, council meeting. List of the VAC are mentioned below for the academic year 2020– 2021. The abstract of the VAC course completion detail should be submitted to the Registrar office.

1. SQUINT EVALUATION
2. LASERS IN OPHTHALMOLOGY
3. AMNIOTIC MEMBRANE GRAFT

Thanking you

Yours faithfully


REGISTRAR



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. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affiliated to Bharath University, Chennai - TN]

Circular

28.06.2020

Sub: Organising Value-added Course: AMNIOTIC MEMBRANE GRAFT

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 “**AMNIOTIC MEMBRANE GRAFT**”. 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 10TH JULY 2020. Applications received after the mentioned date shall not be entertained under any circumstances.


Dean

DEAN
Prof.K.BALAGURUNATHAN M.S
(General surgeon)
SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
OSUDU PONDICHERRY

Encl: Copy of Course content

VALUE ADDED COURSE

1. Name of the programme & Code

Amniotic membrane graft

2. Duration & Period

30 hrs & July-2020 – Oct-2020

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:

July-2020 -Oct-2020 (1)


8. Year of discontinuation: 2021


9. Summary report of each program year-wise

Value Added Course- July-2020 – Oct-2020					
Sl. No	Course Code	Course Name	Resource Persons	Target Students	Strength & Year
1	OPH03	Amniotic membrane graft	Prof.K.Rathnakumar, M.S, D.O,	30	2020

10. Course Feed Back

Enclosed as Annexure- V


Prof. K. Rathnakumar, M.S, D.O,
(Prof-Ophthalmology)
RESOURCE PERSON


Prof. D. Baba, M.S,
(Prof & HOD-Ophthal)
COORDINATOR
PROFESSOR & HOD
DEPARTMENT OF OPHTHALMOLOGY,
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
PUDUCHERRY-605 502.

Annexure 2 – Course Proposal

Course Title: AMNIOTIC MEMBRANE GRAFT

Course Objective:

1. Amniotic membrane
2. Procurement of the graft
3. Preparation of the graft
4. Storage media
5. Storage techniques
6. Indications and usages
7. Membrane handling
8. Follow up and recovery

Course Outcome: On successful completion of the course the students will be able to understand the usage of Amniotic membrane grafts in Various ocular procedures

Course Audience: MBBS UNDERGRADUATES

Course Coordinator: PROF.D.BABA, MS,

Course Faculties with Qualification and Designation:

1. Prof.D.Baba, MS, - HOD Ophthalmology
2. Prof.K.Rathnakumar, MS,DO, - Professor Ophthalmology

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

SINo	Date	Topic	Time	Hours
1.	18/7/2020	1. Amniotic membrane	4-6PM	2
2.	20/7/2020	2. Procurement of the graft	4-7PM	3
3.	22/7/2020	2. Procurement of the graft	4-6PM	3
4.	25/7/2020	3. Preparation of the graft	4-6PM	2
5.	29/7/2020	3. Preparation of the graft	4-7PM	3

6.	10/8/2020	4. Storage media	4-7PM	3
7.	13/8/2020	4. Storage media	4-7PM	3
8.	15/8/2020	5. Storage techniques	4-6PM	2
9.	17/8/2020	5. Storage techniques	4-6PM	2
10.	20/8/2020	6. Indications and usages	4-7PM	3
11.	21/8/2020	7. Membrane handling	4-6PM	2
12.	25/8/2020	8. Follow up and recovery	4-6PM	2
			TOTAL HOURS	30

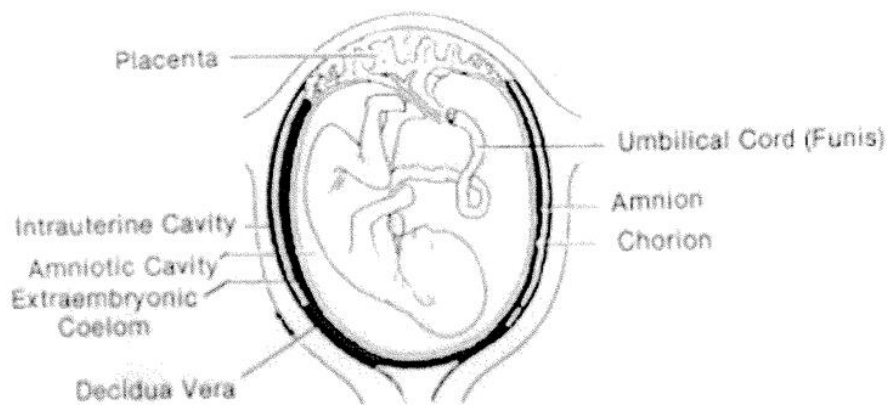
REFERENCE BOOKS: (Minimum 2)

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

AMNIOTIC MEMBRANE GRAFT

Introduction:

- AM is the Innermost layer forming the fetal membrane.
- First used by Davis in 1910 in skin transplant.
- First documented ophthalmic application for conjunctival surface reconstruction in 1940 by De Roth.
- Sorsby et al in 1946 reported its use in acute ocular burns.
- Kim and Tseng successfully reintroduced usage in 1995



- Surrounds the developing fetus
- Derived from fetal tissue
- Amnion is translucent structure adjacent to amniotic fluid and provides nutrients
- Chorion is opaque membrane attached to the decidua

Composition:

- Inner surface- single layer- cuboidal/columnar epithelium. Also has numerous microvilli with cytoplasmic core.

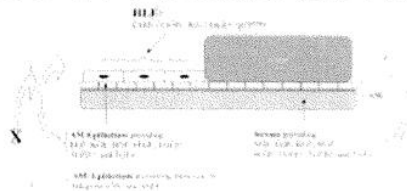
Derived from –embryonic ectoderm

- Basement membrane- collagen type 4,5 & laminin
- Loose stromal matrix
- A collagen layer-cross linked-mainly type 3 collagen- responsible for high tensile strength.
- Devoid of nerve, blood supply & lymphatics.

Basic functions

- Promotion of epithelialisation
- Inhibition of fibrosis

Properties of Amniotic membrane



Facilitates migration of epithelial cells
Reinforcement of basal cell adhesion
Induction of epithelial cell differentiation and promotes goblet cell differentiation
Anti-inflammatory action reduces scarring and vascularization
bacteriostatic properties
Lack of Immunogenicity

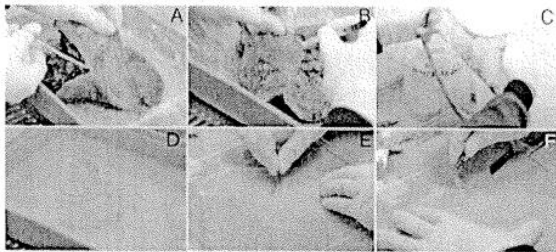
- Cytokines, growth factors and protease inhibitors (IL4,6) EPG, FGE TGR HGF and 2- microglobulin.
- Exclusion of inflammatory cells with anti-protease activities
- Suppression of TGP- signalling system and myofibroblast differentiation of normal fibroblasts
- Prolongation of life span of epithelial progenitor cells.

- Promotion of non-goblet cells epithelial differentiation
- Promotion of goblet cells differentiation when combined with epithelial fibroblast

Collection:

- Consenting Sero negative (Hepatitis B and C virus, Syphilis and HIV) maternal donors determined pre surgery
- elective caesarian section
- Under sterile conditions
- An antibiotic cocktail covering most of Gram positive and Negative bacteria and fungi in Balanced Salt Solution for 24 hours
- Second wash of BSS
- Amnion separated from chorion

Harvesting Amniotic membrane



Preservation

- BSS containing Ampicilin, Streptomycin and Amphotericin B used.
 - Scrapped manually to remove debris
 - Amnion is clear and Transparent
 - Nitrocellulose membranes of required size
 - Epithelial/basement layer up.
-
- Preserved in solution containing Modified Eagle's Medium (MEM) and glycerol in 1:1 ratio with 3.3% l-glutamine, 25 ug/ml Gentamicin, 50 units/ml penicillin, 100ug/ml ciprofloxacin and 0.5 mg/ml Amphotericin B
 - Stored in 50 ML wide mouthed screw capped irradiated transparent bottles at -80 Degrees

Preservation: 3 methods

- Freeze drying
- Freezing
- Hypothermic storage

AMG preparation

1. Amnion separated from chorion.
2. Amnion with chorion
3. Fresh membrane-no preservatives. Cleaned, stores in refrigerator at 4 deg cel, for 24 hrs before usage.

Clinical uses

1. Simple AMT: cell sources for epithelial regeneration and tear supply available eg. Pers.epi.defects.
2. Limbal stem cell deficient, but normal tear supply- chemical burns- AMT+ limbal stem cell transplantation
3. All 3 affected- steven Johnson syndrome- AMT+ limbal stem cell transplantation+ partial tarsoraphy.
4. AMT can also be done with PKP/ LKP
5. AMT with cyanoacrylate glue or human fibrin glue

Surgical techniques

- Thawed at room temperature
 - Rinsed three times in BSS
 - Gently separated from the nitrocellulose paper
 - Epithelium-basement membrane side up
-
- Stromal side up, away from the eye.
 - The stromal side of the membrane is sticky
 - Trimmed to the appropriate shape
 - 10-0 nylon interrupted sutures
 - Intercepted 10-0 nylon sutures

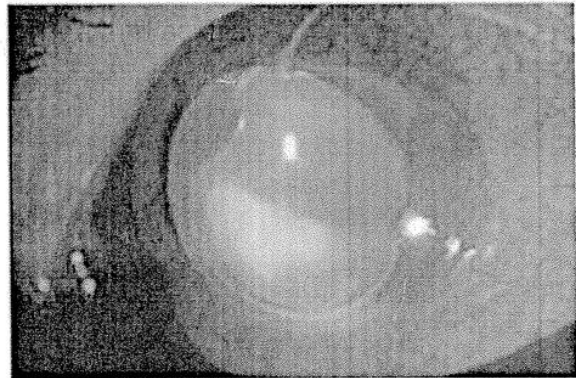
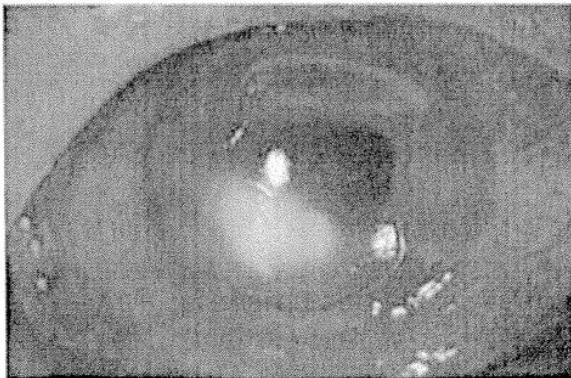
Technique

- Conj peritomy at limbus
- Perilimbal inflamed and scarred tissue removed to expose bare sclera upto 5-7 mm from the limbus
- Abnormal vascularised corneal epithelium and pannus removed
- Amg thawed, peeled from nitrocellulose paper
- Fashioned into required size and shape
- Secured to corneal edge of the defect , **epithelial side facing up.**
- Secured with 10-0 nylon suture to cornea and sclera

AMT in ophthalmology

Persistent epithelial defects due to herpes simplex keratitis

- Ulcerated area debrided with cellulose surgical sponge
- AMG prepared and placed onto recipient area
- Secured with sutures
- Post op- antibiotic, steroid drops
- Bandage contact lens applied until reepithelisation completed.



Pterygium

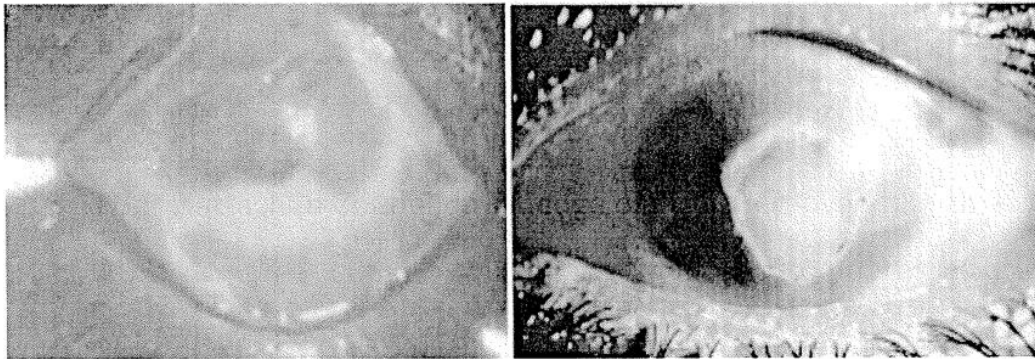
- After excision- bare sclera covered with required size AMG.

SYMBLEPHARON:

Same as above with fornix reformation and symblepharon ring application at end of surgery.

Corneal ulcer

- Base of ulcer- debrided properly
- Poorly attached epithelium at edge of ulcer- removed bluntly as possible.
- AMG prepared- cut into small pieces , stuffed into depressed area of ulcer
- Second layer-over stuffed layer with epi side facing up- acts as basement membrane.
- Third layer on top of all AM patch upto limbus with epi side up and secured with sutures.



AMT with glue application

- Indic: corneal perforation
- Base of ulcer debrided
- Small drop of glue applied to perforation site
- After polymerisation of glue, AC formed with visco
- Iris should be free from tissue adhesive and cornea

- AMG placed over glue and secured with sutures

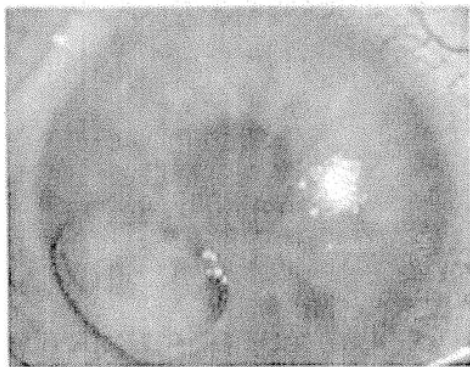
Pseudophakic bullous keratopathy

- Alt to conj flaps
- Decreased pain noted
- Early epithelisation

FOLLOWING BAND SHAPED KERATOPATHY

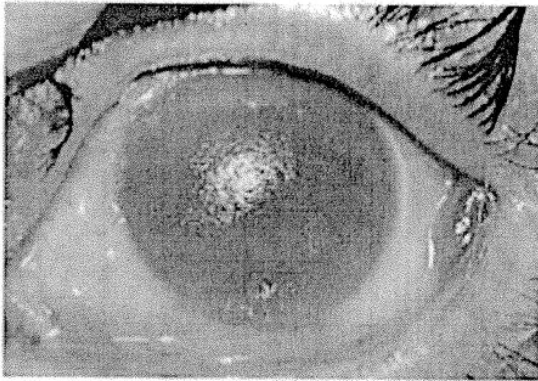
After surgical removal of calcific deposit with or without edta application

Followed by AMG

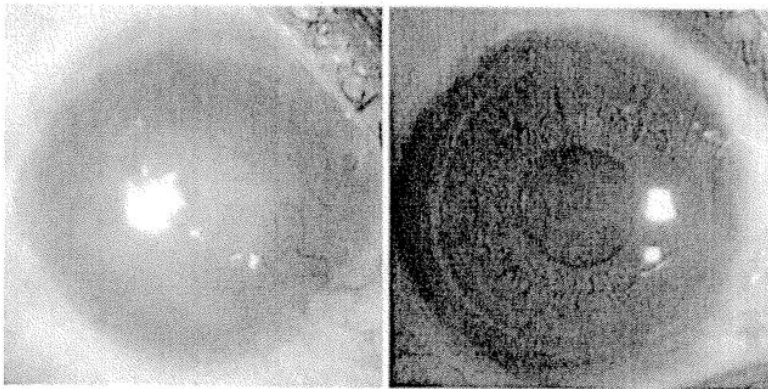


Acute chemical burns

- Mild and moderate burns –simple AM
- Severe burns- AMT+ limbal stem cell transplantation
- Following removal of ocular surface squamous neoplasia and other tumors with large defects.
- Following photorefractive keratectomy- helps in reducing corneal haze.



Conjunctival cicatrization/scar



Limbal stem cell transplant on amniotic membrane

Glaucoma surgery

- Antiadhesive property-desirable after trabeculectomy or during repair of leaking blebs- improves success rate of trab
- AM epithelises rapidly, antifibrotic properties, low immune response- ideal tissue for repair of leaking blebs.
- Am reduces subconjunctival fibrosis and promotes filtration when placed under scleral flap.
- Some studies reported better outcome- AMG supplemented with MMC in uncontrolled glaucoma.

Culture of corneal epithelial cells



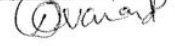
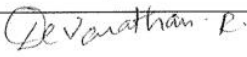
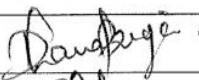

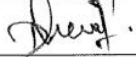
- A confluent primary culture of limbal corneal epithelial cells was established on cellular human AM after 14 days.
- Cells were partially stratified and well attached toAM, but BM was not fully formed.
- So autologous transplantation of cultivated corneal epithelium is feasible by using acellular AM as a carrier.

VALUE ADDED COURSE


Amniotic membrane graft

List of students enrolment – July 2020 – Oct-2020

SL.NO	University Reg. No.	NAME OF THE STUDENTS	Signature
1	U15MB250	AARTHI .H	Aarthi .H
2	U15MB251	ABARNA. M	Abarna .M
3	U15MB252	ABINAYA.J	Abinaya .J
4	U15MB253	ADARSH .S	Adarsh .S
5	U15MB254	AGILAN .A	Agilan .A
6	U15MB255	AKSHAYA .S	Akshaya .S
7	U15MB256	AKSSHAYA .M.R	Akshaya .M.R
8	U15MB257	AMARNATH. S	Amarnath .S
9	U15MB258	AMUDHESAR .K.M	Amudhesar .K.M
10	U15MB259	ANANDH.S	Anandh .S
11	U15MB260	ARCHITH VIGNESH .B	Archith .B
12	U15MB261	ARJUNBALAJI .A	Arjunbalaji .A
13	U15MB262	ARUL NIVETHINI V.A	Arul nivethini .V.A
14	U15MB263	ARUL PRINCE. E	Arul Prince .E
15	U15MB264	ARUNKUMAR .S	Arunkumar .S
16	U15MB265	ARUN PRASAD. K	Arunprasad .K
17	U15MB266	ARUNA .S	Aruna .S
18	U15MB267	ASAN THASTHAGIR. M	Asan .M
19	U15MB268	ASWIN. B	Aswin .B
20	U15MB269	BALAMANI KANDAN. S	Balamani kandan .S
21	U15MB270	BHALA KUMARAN .S	Bhalakumaran .S
22	U15MB271	CHELLAMARIAPPAN. S	Chellamariappan .S
23	U15MB272	CIBIBALAA. D	Cibibalaa .D

24	U15MB273	DEEPIKA DIVYA KUMARI.B	
25	U15MB274	DEEPIKA PRIYADHARSHINI. B	
26	U15MB275	DEVANAND .M	
27	U15MB276	DEVANATHAN. R	
28	U15MB277	DHANA PRIYA .P	
29	U15MB278	DHANALAKSHMI. M	
30	U15MB279	DHANUSH .R	


Prof.K.Rathnakumar, MS,DO
RESOURCE PERSON


Prof.D.Baba, MS, -HOD
COORDINATOR
PROFESSOR & HOD
DEPARTMENT OF OPHTHALMOLOGY,
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
PUDUCHERRY-605 502.



SRI LAKSHMI NARAYANA INSTITUTE OF HIGHER EDUCATION
AND RESEARCH

Annexure - IV

AMNIOTIC MEMBRANE GRAFT
MULTIPLE CHOICE QUESTIONS

6

Course Code: OPH03

I. ANSWER ALL THE QUESTIONS

1. Amniotic membrane is obtained from
 - a. Teeth
 - b. Periosteum
 - c. Placenta
 - d. Skin

2. Amniotic membrane graft is done for
 - a. Chalazion
 - b. Conjunctivitis
 - c. After pterygium removal
 - d. Uveitis

3. Amniotic membrane is usual in
 - a. Salt solution
 - b. Formalin
 - c. Sulfamic acid
 - d. Glycol

4. Amniotic membrane graft can be used in all except
 - a. Pterygium exam
 - b. Chemical burn
 - c. Deep corneal ulcerates



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AND RESEARCH**

5. Limbal stem cell deficiency can be treated
- a. AMG
 - b. TKP
 - c. OKP
 - d. Paracetamol
6. Amniotic membrane is _____ layer of fetal membrane
- a. Innermost
 - b. Outermost
 - c. Middle
7. AMG first used in skin transplant by
- a. Davis
 - b. David
 - c. John
 - d. Abraham
8. AMG is preserved by all methods except
- a. Freeze injury
 - b. Fuzzing
 - c. Hypothermic storage
 - d. Room temperature
9. Function of AMG are all except
- a. Promotion of epithelise
 - b. Healing of ulcer
 - c. Aggravates corneal ulcer



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AND RESEARCH**

10. Amniotic membrane graft can be collected from all except

- a. Elective caesarian section
- b. Normal healthy mother
- c. HIV + mother
- d. None of the above





Sri Lakshmi Narayana Institute of Medical Sciences


Affiliated to Bharath Institute of Higher Education & Research
(Deemed to Be University under section 3 of the UGC Act 1956)



CERTIFICATE OF MERIT

This is to certify that AARTHI .H (U15MB250) has actively participated in the Value Added Course on AMNIOTIC MEMBRANE GRAFT held during JULY 2020 TO OCT 2020 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.


Prof. K. Rathnakumar, MS, DO,
RESOURCE PERSON


Prof. D. Baba, MS,
Prof & HOD - Ophthal
COORDINATOR




Sri Lakshmi Narayana Institute of Medical Sciences


Affiliated to Bharath Institute of Higher Education & Research
(Deemed to be University under section 3 of the UGC Act 1956)



CERTIFICATE OF MERIT

This is to certify that ABARNA. M(U15MB251) has actively participated in the Value Added Course on AMNIOTIC MEMBRANE GRAFT held during JULY 2020 TO OCT 2020 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.


Prof. K. Rathnakumar, MS, DO,
RESOURCE PERSON


Prof. D. Baba, MS,
COORDINATOR

Student Feedback Form

Course Name: **AMNIOTIC MEMBRANE GRAFT**

Subject Code: **OPH03**

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 sequence 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	1	2	3	4	5

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

Suggestions if any:

Abarna M
Signature

Date:

Annexure 5

Date : 28/10/2020

From
Prof.D.Baba, 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: AMNIOTIC MEMBRANE GRAFT

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: **AMNIOTIC MEMBRANE GRAFT** for 30students in JULY – OCT 2020. 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.Baba, MS

HOD ,Ophthalmology

Encl: Certificates

Photographs

