SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSUDU, AGARAM VILLAGE, KUDAPAKKAM POST, PUDUCHERRY-605502.

Date28.12.2019

From
DR.BALAJI SUBRAMANIYAN,
Professor and Head,
DEPARTMENT OF DENTISTRY
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: IMPLANTS

Dear Sir,

With reference to the subject mentioned above, the department proposes to conduct a value-added course titled: **IMPLANTS** on 2.1.2020. We solicit your kind permission for the same.

Kind Regards

DR.BALAJI SUBRAMANIYAN

FOR THE USE OF DEANS OFFICE

Names of Committee members for evaluating the course:

The Dean: DR.BALAGURUNATHAN

The HOD: DR.BALAJI SUBRAMANIYAN.R

The Expert: DR.BALAJI SUBRAMANIYAN.

The committee has discussed about the course and is approved.

Dean | Subject Expert | HOD

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KOODAPAKKAM POST,
PUDUCHERRY - 605 502

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

27.12.2020

Sub: Organising Value-added Course: IMPLANTS reg

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 organising **"IMPLANTS ON 2.1.20"**. 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 31.12.19. Applications received after the mentioned date shall not be entertained under any circumstances.

DEAN
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
OSUDU, AGARAM VILLAGE,
KUDAPAKKAM POST,
PUDUCHERRY - 605 502

Dean

Encl: Copy of Course content and Registration form.

COURSE PROPOSAL

Course Title: IMPLANTS

Course Objective: To enlighten students about significance of implants

Course Outcome: In depth knowledge regarding IMPLANTS

Course Audience: MBBS STUDENTS

Course Coordinator: DR. BALAGURUNATHAN

Course Faculties with Qualification and Designation:

1. **DR. BALAJI SUBRAMANIYAN M.D.S & PROFESSOR**

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

SlNo	Date	Topic	Time	Hours
1.	2.1.20	methods of tooth replacement	4PM-7PM	3 hrs
2.	11.1.20	Mutilated occlusion	4pm-7 pm	3hrs
3.	19.1.20	Mastication	5pm-8pm	3 hrs
4.	27.1.20	Implant treatment for patients with diabetes	4pm-7pm	3hrs
5.	2.2.20	Removable dentures	5pm-8pm	3 hrs
6.	12.2.20	Indications for fixed dentures	5pm-8pm	3 hrs
7.	20.2.20	Zygomatic implants	4pm-7pm	3 hrs
8.	25.2.20	Removable and fixed denture	5pm-8pm	3 hrs
9.	3.3.20	General health status prior to implant therapy	5pm-8pm	3 hrs
10.	10.3.20	Maxilla facial implants	4pm-7pm	3 hrs
			Total Hours	30

REFERENCE BOOKS: (Minimum 2)
1.MISCH'S IMPLANT DENTISTRY
2.DR.VENKAT'S TEXT BOOK OF IMPLANTS

IMPLANTS

ABSTRACT

Dental implants are widely used and are considered to be one of several treatment options that can be used to replace missing teeth. A number of implant-supported treatment options have been used successfully to replace a single tooth and multiple teeth, as well as a completely edentulous jaw. However, as the number of patients who have dental implants is increasing, dental personnel are more likely to see patients with implant-supported restorations or prostheses.

Nevertheless, dental implants may fail as a result of mechanical complications, such as screw loosening or due to biological causes like peri-implant diseases. As result, dental personnel should be able to recognize these complications and the factors that have negative effects on the success of such implant-supported restorations or prostheses.

The ultimate goal of dental implant therapy is to satisfy the patient's desire to replace one or more missing teeth in an esthetic and functional manner with long-term success. To achieve this goal, clinicians must first accurately and comprehensively assess the patient's overall physical and mental health.

Treatment planning for implant dentistry usually requires a greater degree of attention to detail and precision than other forms of dentistry. This results from the less forgiving clinical situation if an implant's angulation is wrong or the implant-supported restorations are not in proper occlusion compared with when natural teeth are supporting dental prosthetics. In addition, anatomic factors should be considered owing to the nerves, maxillary sinus, nasal floor, and other important anatomic structures commonly present in the area where implants need to be placed. Thus, a close working relationship between the surgeon placing the implant and the clinician restoring the implant is critical from the time treatment planning

IMPLANTS

INTRODUCTION

Teeth are one of the major components of stomatognathic system, which provides a pleasing smile in addition to its functional aspect of mastication. Loss of tooth/teeth results in loss of structural balance, inefficient oral function, poor esthetics, positional change in the remaining natural teeth. In order to reduce the adverse effects following tooth loss, replacement of teeth is necessary.

One of the major advances in prosthetic dentistry is implant-supported prosthesis that provides comfort as well as confidence for the patient's satisfaction. Implants are used to replace missing teeth, re-build the craniofacial skeleton, provide anchorage during orthodontic treatment, and even to help form new bone in the process of distraction osteogenesis.Dental implants have become mostly acceptable method for replacing missing teeth. Most of the general dentists, do not perform the placement of implants.

During the implant placement some major criteria are important. They are careful patient selection, thorough evaluation of relavant anatomical sites, meticulous surgical technique and delay loading which are important for an implant placement.[3]

The advent of osseo integrated implants in dentistry holds great promise for the future of implants and for the prosthesis they will support. The phenomenon of Osseointegration accidentally discovered by .Branmark, has been a major advance in the replacement of missing natural teeth. Branmark has defined

osseointegration as a relationship where "bone is in direct contact with the implant, without any immediate connective tissue".

Because implants are elective procedure, a predictable outcome is necessary in prosthodontic rehabilitation with the tissue integrated prosthesis. To achieve predictable results, the restorative dentist must communicate to the surgeon for the optimum position of implants. If placement of the implants is solely determined by the surgeon, he will be guided only by the anatomy of the patient .It is often difficult for the surgeon to estimate proper placement, where there is extensive loss of oral structures, without the assistance of the pretreatment evaluation and guidance by the restorative dentist. The dentist must consider esthetics, tooth placement, tissue contour, lip line, thickness and extension of the prosthesis. Osseointegrated implants are of little value if improperly inclined such that they cannot be used prosthodontically.

Historically, surgeons placed implants where the greatest amount of bone was present, without regard to the placement of final restoration. This often led to a compromised final prosthesis with a jeopardized occlusal scheme and poor esthetics. More recently emphasis has shifted from relatively arbitrary implant placement in good available host bone to placing the implant with consideration of the final prosthetic outcome, soft tissue management, emergence profile and tooth morphology. The goal of implant dentistry is not the implant; but the tooth which is replaced .To facilitates accurate translation from the desired plan to the surgical reality, templates or surgical guides are used.

A template may be defined as a pattern or a gauge, such as a thin metal plate with a cut pattern, used as a guide in making or reproducing models accurately. Prosthetic templates are often acrylic replicas of the diagnostic wax-up which

allows pre surgical visualization of the prosthesis. There by aiding in accurate placement to establish a logical continuity between diagnosis, prosthetic planning and surgical phase use of transfer device is essential. The surgical template dictates the surgeon the implant body placement that offers the best combination of support for the repetitive forces of occlusion, esthetics and hygienic requirements.

Modern technology has offered a wide selection of modern diagnostic tools that vary from digital imaging to computer-aided design/computer-aided manufacturing (CAD/CAM) machines, surgical microscopes, computer guided surgical templates, laser technology, computer software simulation, and a wide array of bone-grafting materials and implant designs.[5] In addition, there are revolutionary new loading dental implant concepts. Today's new loading concepts are being used predictably and routinely to greatly reduce treatment time.

The role of prosthodontist is very critical because of the realization that implant placement is a prosthetically driven subject. It is important for the prosthodontists to be aware of the various guided surgical protocols and the templates which is used to achieve predictable positioning of implants.

RATIONALE FOR TEMPLATES

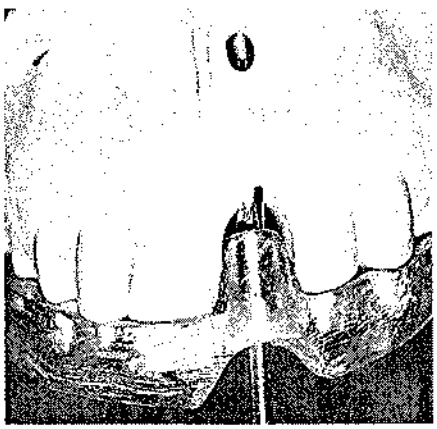
When a single missing tooth needs to be replaced the surgeon can free-hand the drill without a prefabricated template and hope to align the osteotomy perfectly between adjacent teeth in all direction (mesial, distal, facial, and lingual). The implant is positioned based upon the surgeon's idealized vision of the fixture within the bone, which may different from the restorative needs of that particular site.[6] In the fully edentulous arch, orientation and bone topography can vary greatly, creating an atmosphere wherein implants can be misaligned or worse.

Templates can be created by various methods to help guide the surgical specialist or implantologist during the surgical placement of the implant, leaving most of the decision-making process at the pre surgical level, whether in partially edentulous or completely edentulous presentations.

In its elementary form, a template is a misnomer is fabricated based upon information of the final tooth form, not the bone. A template design based upon conventional prosthodontic protocols, including tooth morphology, emergence profile, occlusion, contacts and embrasures, guides the implant placement in the position that best allows for proper restoration.

M.J. Edge (1987)[7] described about the surgical guides keeping in mind about the prosthetic outcomes rather than placing them arbitrarily. He described about the most simplest way of fabricating a stent by sprinkle on technique which is used during the initial pilot hole drilling for alignment of implant.

David R. Burns (1988) described fabrication of stent with heat cure acrylic resin that had 10mmlength of 0.045inch round tubing that were centered over the outline of one of the artificial tooth.



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Diagnostic TEMPLATE

There are a number of basic principles of radiography that should guide the clinician in selecting an appropriate imaging technique and judging whether the resulting images are of adequate quality for the purpose.

First, there should be an adequate number and type of images to provide the needed anatomic information. In implant dentistry, for example, this information includes the quantity and quality of bone, as well as the location of anatomic structures, which generally requires multiple images at right angles to each other.

Second, the type of imaging technique selected should be able to provide the required information with adequate precision and dimensional accuracy. Use of a technique that will allow accurate repositioning of the patient, such as with a cephalostat, is also helpful in comparing preoperative and postoperative images.

Third, there must be a way of relating the images to the patient's anatomy. For edentulous regions of the jaw, this generally means the use of a stent with radiopaque markers during imaging. The exact location of the longitudinal and cross-sectional views can thus be determined with respect to the edentulous mandible or maxilla.

Fourth, in whatever technique is used, the patient, x-ray beam and imaging receptor should be positioned to minimize distortion. In addition all images should be free from artifacts that might interfere with interpretation.

Finally, the desire for preoperative imaging information should be balanced with the radiation dose and financial cost to the patient.

The purpose of diagnostic radiographic templates is to incorporate the patient's proposed treatment plan into the radiographic examination. This requires development of a tentative treatment plan before the imaging procedure. Ideally, mounted diagnostic casts, a diagnostic wax-up, agreement between the practitioners on the number and location of proposed dental implants, and prior authorization of the proposed treatment by the patient make the diagnostic template a useful tool and many times the determining factor in the final treatment plan of the patient. The maxillary denture is converted to a radiographic template. (Fig.3) The pre prosthetic imaging procedure enables evaluation of the proposed implant site at the ideal position and orientation identified by radiographic markers incorporated into the template.

Variety of marker materials are used, including:

1. Five -mm lead[37] or steel spheres (the markers commonly used for conventional radiography)
2. Two-mm steel spheres
3. Gutta percha markers on a clear acrylic stent[38]
4. Barium sulfate mixed with varnish or polyurethane based concrete sealer (to coat dentures prior to the CT scan)[39]
5. Radiopaque materials such as barium sulfate mixed with the acrylic material used in the stent to simulate the prosthetic teeth of the denture (in this instance, the teeth themselves are rendered radiopaque and can serve as markers)
6. Radiopoque prosthetic teeth with specific sites demarcated by gutta percha-filled holes drilled into the stent between the base of the radiopaque teeth and the gingiva
7. Radiopaque stents with holes drilled vertically into simulated teeth at potential implant sites (the hole is not filled, and the air in the hole acts as a dark "negative" marker within the opaque simulated tooth on the filmed images)

First, the anatomic structures are evaluated radiographically with a radiographic template. Next, the planned implant sites are marked with steel balls, wire, or gutta-percha. These markers are held in position with the radiographic template. A panoramic radiograph often is the radiograph of choice. A comparison of the actual size of the markers with their size on the radiograph reveals the distortion factor involved. Because a radiograph is two-dimensional, a three dimensional evaluation is not possible with this technique. Computerized

tomographs (CTs) have been shown to be useful for the radiographic evaluation of hard tissues.

Annexure- II

VALUE ADDED COURSE

IMPLANTS
DI-12

List of Students Enrolled JAN 2020 – MARCH 2020

MBBS Student		
Sl. No	**Name of the Student**	**Roll No**
1	VIGNESH .S	U16MB396
2	VIJAY .M	U16MB397
3	VINDUJA VIJAY	U16MB398
4	VIPIN SHARMA	U16MB399
5	VISALINI .S	U16MB400

Dr. BALAJI SUBRAMANIYAN
RESOURCE PERSON

Dr. Jayalakshmi
COORDINATOR

Bharath Institute of Higher Education and Research

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

Participant list of Value added course **IMPLANTS**

Sl.No	Reg.No	Name of the candidate	Signature
1	U16MB396	VIGNESH .S	
2	U16MB397	VIJAY .M	
3	U16MB398	VINDUJA VIJAY	
4	U16MB399	VIPIN SHARMA	
5	U16MB400	VISALINI .S	

SRI LAKSHMI NARAYANA INSTITUE OF HIGHER EDUCATON AND RESEARCH

IMPLANTS

QUESTIONS

Course Code:DI-12

ANSWER ALL THE QUESTIONS

1.What are methods of replacement of teeth?

2. Mastication?

3. difference between removable and fixed denture?

4. Replacement with implants in patients with diabetes?

5. Indications for fixed dentures?

Implants

Name: VIGNESH.S
ROLL NO: 616423106

Implants:

Implants are small sterile solid masses consisting of a highly purified drug made by compression or molding or extrusion.

Principles of Implant surgery.

- patient preparation.
- Implant site preparation
- one stage versus two stage implant surgeries.

Implant surgery:

. Mucoperiosteal flaps is reflected up to or slightly beyond the level of the mucogingival junction, exposing the alveolar ridge of the implant surgical sites.

. The bone at the implant site must be thoroughly debrided all the granulation tissue

· A series of drills are used to prepare the osteotomy site precisely and incrementally for an implant.

A Surgical guide or stent is inserted, checking for proper positioning and used throughout the procedure to direct the proper Implant placement.

· Round bur is used to mark the implant site. The surgical guide is removed.

· A Depth of 1 to 2mm with a Round drill breaking through the cortical bone and creating a starting point for the countersink drill.

· Final step in preparing the osteotomy site in dense cortical bone, tapping procedure may be necessary.

· dense cortical bone often placing longer Implant with naturally dense bone, it is prudent to tap the bone before Implant placement to facilitate Implant insertion

Implants

- pilot drill is placed
- final drill used in the 3mm twist drill to finish preparation of the osteotomy site.
- countersink drill is used to widen the entrance of the implant site and allow for the subcrestal placement of the Implant Killer and Cover screw.
- Cover screw is placed and soft tissue is sutured

post operative care.

- Simple implant surgery in a healthy patient usually does not require antibiotic therapy.
- Can be premedicated with antibiotics. 1 hour before the surgery and continuing for 1 week postoperatively if the surgery is extensive. If it require bone augmentation or if the patient is medically compromised.

Sri Lakshmi Narayana Institute of Medical Sciences

Affiliated to Sri Lakshmi Institute of Higher Education & Research
Deemed to be University u/s 3 of the UGC Act, 1956

CERTIFICATE OF MERIT

This is to certify that VIJAY.M has actively participated in the Value Added Course on IMPLANTS held during JAN 2020 – MARCH 2020 Organized by Sri Lakshmi Narayana Institute of Medical Sciences, Pondicherry- 605 502, India.

Dr. BALAJI SUBRAMANIYAN
RESOURCE PERSON

Dr. BALAGURUNATHAN
COORDINATOR

Student Feedback Form

Course Name: IMPLANTS

Subject Code: DI - 12

Name of Student: VIJAY. M Roll No.: U16MD297

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:

Date: 28.12.15

Signature

COURSE COMPLETION

Date13.3.2020

From
DR.BALAJI SUBRAMANIYAN.R,
DENTISTRY,
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: IMPLANTS

Dear Sir,

With reference to the subject mentioned above, the department has conducted the value-added course titled: **IMPLANTS** on10.3.2020. 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

DR.BALAJI SUBRAMANIYAN.R

Encl: Certificates

Photographs