

POST DOCTORAL FELLOWSHIP IN
MAXILLOFACIAL PROSTHODONTICS

CURRICULUM

The Post Doctoral Fellowship in Maxillofacial Prosthodontics curriculum meets all the standards set forth in the accreditation standards for advanced specialty education programs in maxillofacial prosthetics. All training faculty are experts who are well respected both nationally and internationally. the curriculum is divided into three basic elements: (1) attendance of hospital rounds and conferences (head and neck surgery, radiation oncology, head and neck tumor board, Craniomaxillofacial clinic and others); (2) assignment of patients in the maxillofacial prosthetic clinic; and (3) didactic course instruction provided during maxillofacial prosthodontic seminars. Each element is structured to maximize the experiences gained by each resident.

Faculty and staff are assigned to provide faculty coverage for each resident activity. At the beginning of the residency, the program director presents information regarding clinic operating procedures, financial and billing policy, infection control policy, hospital protocol, use, care and maintenance of equipment, etc. faculty are assigned to present specific topics during assigned seminar periods and are given specific clinic coverage assignments. Faculty are also assigned to attend hospital conferences and rounds with the residents. During treatment planning and case presentation sessions (held once weekly) all three primary program faculty attend and participate. During the first week of the program, the program objectives, special behavioral objectives, objectives and outline of seminar, tumor board meeting and hospital rounds are issued in written form to the new residents.

1. PROGRAMME OBJECTIVE

Please find the attachment in the document: Format For Starting New Academic Programmes

2. BEHAVIORAL OBJECTIVES

Topic: Jaw Fractures

1. Be familiar with maxillary jaw fractures and the methods used in their reduction.
2. Be familiar with the mandibular jaw fractures and the methods used in their reduction.
3. Be familiar with the use of prosthetic stents in the stabilization of facial fractures.
4. Be familiar with the defects associated with traumatically induced missile wounds, burns, motor vehicle accidents, etc.
5. Be capable of providing appropriate prosthodontic services for patients with traumatic defects.

Topic: Osseointegrated Implants – Partially Edentulous and Edentulous Patients with Acquired Defects

1. Understand the basic biology of osseointegration
2. Understand the application of the criteria used in patient selection including:
 - a. How the potential functional load affects treatment planning.
 - b. How the number and position of existing teeth affects treatment planning.

- c. How the quantity and density of bone at the prospective bone sites affect treatment planning.
 - d. How parafunctional habits affect treatment planning.
3. Understand the design principles useful in fabricating surgical stents that aid implant placement.
4. Understand the important prosthodontic steps necessary in fabricating successful prosthesis including:
 - a. Impressions
 - b. Jaw relation records
 - c. Occlusal considerations
 - d. Design considerations related to hygiene access

Topic: Craniofacial Clinic

1. Become familiar with the disabilities associated with craniofacial anomalies.
2. Become familiar with the means of assessment of the prosthodontic needs of these patients.
3. Learn to make appropriate assessments of the appropriateness of prosthodontic interventions.

Topic: Advanced Radiographic Technique

1. Become familiar with the usual methods of radiologic evaluation of patients with a variety of defects in the head and neck region.

2. Become familiar with the appropriate application of the above radiologic applications.

Topic: Craniofacial Biology Conference

1. Become familiar with how a multidisciplinary craniofacial biology team functions.
2. Learn to contribute to a multidisciplinary craniofacial team regarding the prosthetic methods used in rehabilitation..
3. Become familiar with how a patient presenting with craniofacial anomalies is properly worked up and evaluated.
4. Become familiar with how the various treatment modalities (surgery, speech pathology, social service, orthodontics, etc.) are employed in the treatment of craniofacial anomalies.

Topic: Head and Neck Rotation Tumor Conference

1. Become familiar with how a multidisciplinary tumor board functions.
2. Learn to contribute to a multidisciplinary tumor board regarding issues related to rehabilitation of the head and neck cancer patient.
3. Become familiar with how a patient presenting with a head and neck tumor is properly worked up and evaluated.
4. Become familiar with how the various treatment modalities (surgery, radiation, chemoradiation and chemotherapy) are employed in the treatment of head and neck tumors.

5. Become familiar with the means of determining the location and extent of tumors including radiographic imaging, surgical exploration, needle aspirate cytology, etc.

Topic: Hospital Rounds – Head and Neck Surgery

1. Become familiar with the postsurgical morbidity associated with resections of head and neck tumors.
2. To intervene as necessary in the care of a patient currently under their care.
3. To appreciate and understand value of the various surgical appliance which they have designed and inserted.
4. Become familiar with the postsurgical morbidity associated with various surgical reconstruction techniques.
5. To educate the residents in head and neck surgery regarding the contribution maxillofacial prosthodontists make in the care of patient with head and neck tumors.
6. To become fully assimilated and a part of the team of physicians, dentists and auxiliary staff treating patients with head and neck tumors.

Topic: Operating Room – Head and Neck Surgery

1. Become familiar with the protocol necessary to function in an operating room environment.

2. Become familiar with the methods used in the resection of tumors of the head and neck.
3. Become familiar with the methods used in placement of surgical splints, ISO's and stents.

Topic: Radiation Oncology and Chemoradiation

1. Become familiar with the modalities of radiation used in the treatment of head and neck tumors.
2. Become familiar with how the specifics of radiation therapy is planned for any particular patient.
3. Become familiar with how radiation therapy is employed in the treatment and palliation of patients with head and neck tumors.
4. Be able to educate the residents in radiation oncology regarding the important oral and dental factors impacting upon the delivery of radiation treatments and/or post radiation morbidities.
5. Advise the residents in radiation oncology per the use of radiation stents in the treatment of patients with head and neck tumors.
6. Learn to work in concert with their radiation oncology colleagues so as to reduce the risk of radiation caries and osteoradionecrosis.
7. Become intimately familiar with the oral effects and the management of the patient treated with chemoradiation.

Topic: Amrita Radiotherapy and Head and Neck Surgery Clinic

1. Become familiar with how a multidisciplinary tumor board function.
2. Learn to contribute to a multidisciplinary tumor board conducted in a non-university setting regarding issues related to the oral health maintenance and the rehabilitation of the head and neck cancer patient.
3. Become familiar with how a patient presenting with a head and neck tumor is properly worked up and evaluated.
4. Become familiar with how the various treatment modalities (surgery, radiation, and chemotherapy) are employed in the treatment of head and neck cancer.
5. Become familiar with the means of determining the location and extent of head and neck neoplasms, including radiographic imaging, surgical exploration and endoscopy, needle aspirate cytology, etc.

Topic: Preparation of Patients for Radiation Treatments

1. Gain an understanding of the basic principles employed in evaluating oral cavity structures prior to radiation therapy regarding those points at reference important in reducing the incidence of osteoradionecrosis and radiation caries.
2. Gain an understanding of how the methods and modalities of radiation therapy impact on the risk of osteoradionecrosis and radiation caries.
3. Gain an understanding of how to appropriately design radiation stents and carriers in the treatment of patients with radiation therapy.

Topic: Mandibular Defects

1. Be familiar with the tumors that affect the tongue, floor of mouth, mandible and adjacent oral regions.
2. Be familiar with the methods of resection of these tumors.
3. Be familiar with the functional disabilities associated with these resections.
4. Be familiar with the means of mandibular guidance therapy.
5. Be familiar with the use of palatal speech aids, their design and fabrication.
6. Be familiar with the role of speech therapy in glossectomy patients.
7. Be familiar with the uses, design, and fabrication of resection dentures for edentulous patients.
8. Be familiar with the use, design and fabrication of resection partial dentures for partially edentulous patients.
9. Be familiar with the methods of mandibular reconstruction using free bone grafts.
10. Be familiar with the use of vestibuloplasty and tongue release in these patients.
11. Be familiar with the use of implants in the restoration of the patient with mandibular defects.
12. Be familiar with the use of free flaps in the reconstruction of tongue-mandible defects.
13. Be familiar with the use of implants in patients reconstructed with free vascularized flaps

Topic: Osseointegrated Implants

1. Be familiar with the biologic phenomenon responsible for “osseointegration.”
2. Be familiar with the use of osseointegrated implants in edentulous patients.
3. Be capable of designing and fabricating prostheses utilizing osseointegrated implants in edentulous and partially edentulous patients.
4. Be familiar with the indications and use of osseointegrated implants in maxillofacial prosthetics.
5. Be capable of designing and fabricating prosthesis using osseointegrated implants in patients with oral and facial defects.

Topic: Maxillary Defects

1. Be familiar with the tumors arising from the maxilla and paranasal sinuses.
2. Be familiar with the methods of resection of these tumors including palatectomy and radical maxillectomy.
3. Be familiar with the functional disabilities associated with acquired maxillary defects.
4. Be familiar with the alterations at surgery that enhance the prosthetic prognosis.
5. Be capable of designing, fabricating, and delivering immediate surgical obturators, for edentulous and partially dentulous patients.

6. Be capable of designing, fabricating and delivering of interim obturator prostheses for edentulous and partially dentulous patients.
7. Be capable of designing, fabricating, and delivering definitive obturator prostheses for edentulous and partially dentulous patients.
8. Be familiar with the use of implants in the restoration of maxillary defects.

Topic: Chemotherapy and its Dental Manifestations

1. Be familiar with agents commonly used in oncology and their systemic side effects.
2. Be familiar with the oral effects of these agents.
3. Be familiar with means of managing oral and dental complications associated with these cytotoxic agents.
4. Be familiar with the primary means of the prevention of oral complications in patients receiving chemotherapy.

Topic: Psychodynamic Interactions

1. Be familiar with the psychodynamic phenomenon associated with head and neck cancer.
2. Be familiar with the social support system and how it can be used to benefit the patient.

Topic: Dental Management of the Irradiated Patient

1. Be familiar with the principles of radiation therapy.
2. Be familiar with the radiation effects of the oral cavity.
3. Be familiar with the criteria for and methods used in preradiation extractions.
4. Be familiar with the criteria for and methods used in postradiation extractions.
5. Be familiar with the usual preventive measures used in irradiated patients.
6. Be familiar with the special factors to be considered when providing restorative dental services on irradiated edentulous and partially edentulous patients.
7. Be familiar with the factors leading to osteoradionecrosis and soft tissue necrosis and the means of treatment.
8. Be familiar with the design and fabrication of radiation splints and stents.
9. Be familiar with the use of hyperbaric oxygen in the treatment of osteoradionecrosis.
10. Be familiar with the use of osseointegrated implants in the irradiated patient.
11. Be capable of providing prosthodontic services as needed to irradiated patients.

Topic: The Cleft Palate Deformity

1. Be familiar with the nature of the cleft palate deformity.
2. Be familiar with dysfunctions associated with the cleft palate deformity.

3. Be familiar with the methods of morphologic assessment.
4. Be familiar with the methods of assessment of function.
5. Be familiar with the surgical orthodontic, and prosthodontic methods of treatment.
6. Be familiar with the role of orthodontics, speech and audiology otolaryngology, and social service in the rehabilitation of patients with congenital deformities.
7. Be capable of functioning as a viable member of a craniofacial anomalies team.
8. Be clinically capable of providing appropriate prosthodontic services for children and adults afflicted with craniofacial anomalies.
9. Be familiar with the use of nasoalveolar molding.

Topic: Restoration of Facial Defects

1. Be familiar with the usual methods of surgical reconstruction of auricular nasal and mid-facial defects.
2. Have specific knowledge of the methods, materials and techniques used in the prosthetic reconstruction of auricular, nasal, orbital and mid-facial defects.
3. Have specific knowledge of the alterations at surgery improving the prognosis of facial prostheses.
4. Have detailed knowledge of the use of osseointegrated implants in the restoration of facial defects.

5. Be clinically capable of restoring auricular, nasal, orbital and mid-facial defects with prosthetic means.

Topic: Soft Palate Defects

1. Be familiar with the principles of speech and velopharyngeal function.
2. Be capable of designing, fabricating and delivering obturator prosthesis for patients with soft palate defects.

Topic: Speech, Swallowing and Velopharyngeal Function

1. Be familiar with the components of speech.
2. Be familiar with speech phonemes and their relationship to prosthodontics.
3. Be intimately familiar with velopharyngeal function.

Topic: Preprosthetic Surgery

1. Be familiar with the indications and methods used in vestibuloplasty.
2. Be familiar with the medications and methods used in repositioning the mental nerve.
3. Be familiar with the variety of procedures used in alloplastic and autogenous augmentation of the mandible and maxilla.

Topic: Hospital Rounds – Hospital Dentistry (Hospital Dentistry-Medical Oncology)

1. Become familiar with the more common cytotoxic agents in medical oncology.
2. Become familiar with the toxic side effects of these agents.
3. Become familiar with the oral manifestations of these drugs.
4. Become familiar with the oral preventive measures effective in this patient population.
5. Become familiar with the usual means of dealing with dental disease during and after a course of chemotherapy.

Topic: Nasoalveolar molding

1. Become familiar with the rationale for nasoalveolar molding
2. Become familiar with the principles of nasoalveolar molding.
3. Gain clinical experience in the fabrication, delivery and adjustment of nasoalveolar molding devices.

3. OBJECTIVES AND OUTLINE OF SEMINAR, TUMOR BOARD MEETING AND HOSPITAL ROUNDS

- Several meetings, seminars and rounds are conducted each week including maxillofacial prosthetic seminar series; hospital rounds - head and neck surgery; craniomaxillofacial clinic; treatment planning session - maxillofacial prosthetics; and treatment planning session - osseointegrated implants.
- The maxillofacial prosthetic seminar series runs all year and is conducted 1-2 hours per week, depending upon the time of year. Attendance is mandatory. Residents are given reading assignments each week. Small seminar groups facilitate discussion and enable instructors to determine the level of residents' understanding of didactic material.
- Hospital rounds with head and neck surgery are conducted each week, providing opportunities for the two services to interact and become familiar with the issues important to each discipline. Each patient is presented and the house staff of both services participate in these discussions. These rounds last from 1-2 hours.
- Regular postings in Head and neck Surgery, Cranio maxillofacial Surgery and Maxillofacial Prosthodontic Clinic are allotted in respective days each week. Patients are placed in examining rooms and are examined by all participating services. The MFP residents are expected to write consultation reports (which are done under faculty supervision) on all patients examined. Eight to ten patients are seen by the team each week. At the end of the month, the most interesting and complicated cases are discussed in Maxillofacial Prosthodontic Board Meeting.
- Mandatory treatment planning sessions and chart rounds for patients with maxillofacial defects are conducted once each week. Residents are expected to present all new patients treated during the preceding week and to give updates on patients currently in treatment or follow-up. patient records are reviewed and chart entries examined during this session.
- The MFP residents should attend Amrita head and neck surgery, radiation oncology, medical oncology and social services. This clinic is managed by the

concerned specialist, and the faculty-in-charge will provide dental and maxillofacial prosthetic support to the needful. Appropriate patients in need of dental care prior to radiation or prosthodontic care prior to and following surgery are referred to Maxillofacial Prosthodontic Clinic for care.

- Treatment planning sessions are held once a week for patients receiving osseointegrated implants. Oral surgery, Prosthodontics and Periodontics residents also attend and participate in this conference. Patients of interest to all three services are presented and discussed.

DISCUSSION AND SEMINAR OUTLINES

I. Cancer chemotherapy; oral manifestations, complications and management

- A. Chemotherapeutic effectiveness
- B. Bone marrow transplantation
- C. Cancer chemotherapy agents
- D. Oral manifestations and complications
 - 1. Oral mucositis
 - 2. Xerostomia
 - 3. Oral hemorrhage
 - 4. Infection
- E. Management of oral complications
 - 1. Prevention
 - 2. Risk assessment

3. Treatment
 - a. Oral mucositis
 - b. Xerostomia
 - c. Oral hemorrhage
 - d. Infection

II. Psychodynamic interactions

- A. Behavioral and psychosocial issues in head and neck cancer
 1. Lifestyles behaviors – tobacco and alcohol use
 2. Performance status – swallowing, speaking and eating
 3. Body image
 4. Mental disorders
- B. Crises sets for the head and neck cancer patient
 1. Illness
 2. Cancer as the illness
 3. Maxillofacial cancer: factors of the adjustment process
 4. The social support system
 5. Patient resources

III. Radiation therapy and Chemoradiation of head and neck tumors

- A. Physical principles

B. Interactions of radiation in tissues

C. Biologic effects

D. Biologically equivalent treatment

E. Fractionation

1. Hyperfractionation

2. Accelerated fractionation

F. Dosimetry

G. Brachytherapy

H. Modalities available

I. Treatment planning

J. Indications

K. General tissue effects

IV. Use and fabrication of prosthodontic stents and splints during radiation therapy

A. Positioning stents

B. Shielding

C. Recontouring tissues to simplify dosimetry

D. Positioning a radioactive source

E. Tissue bolus devices

1. Skin

2. Maxillectomy defects

3. Other

V. Radiation effects – oral cavity

A. Oral mucous membranes

1. Early effects

2. Late effects

B. Taste and olfaction

C. Edema and trismus

D. Diet

E. Salivary glands

1. Vascular changes

2. Serous vs. mucous acini

3. PH and buffering capacity

4. Salivary stimulation

5. Salivary substitutes

F. Bone

1. Vascular changes

2. Cellular changes

3. Remodeling

4. Infection

G. Periodontium

H. Teeth

I. Oral flora

VI. Dental Management of the Irradiated Dentulous Patient

A. Criteria for preradiation extraction

1. Dental disease factors

2. Radiation delivery factors

B. Preradiation extractions

1. Current philosophies

2. Third molars

C. Postradiation dental disease

1. Extraction of teeth
2. Dental maintenance
 - a. Fluoride and other anticaries substances
 - b. Casein based CaPO₄ pastes
 - b. Followup and restoration care
3. Endodontic therapy
4. Prevention of osteoradionecrosis

VII. Osteoradionecrosis

A. Incidence

B. Predisposing factors

1. Iridium implants
2. Periodontal infections
3. Dentures
4. Postradiation extractions
5. Preradiation extractions

C. Treatment

1. Osteoradionecrosis associated with external beam
2. Osteoradionecrosis associated with external beam and interstitial implants
3. Role of hyperbaric oxygen
4. Role of pentoxifylline-tocopherol protocols
5. Treatment with myocutaneous flaps or free flaps

Soft tissue necrosis

- A. Incidence
- B. Predisposing factors
- C. Treatment
 - 1. Surgical excision
 - 2. Role of hyperbaric oxygen
 - 3. Role of pentoxifylline-tocopherol protocols

VIII. Dental management of irradiated edentulous patients

- A. Risk of bone necrosis
- B. Use of soft liners
- C. Placement of dentures – timing
- D. Dentures and pre-existing bone necrosis
- E. Soft tissue necrosis and dentures
- F. Prosthodontic procedures – complete dentures
 - 1. Oral examination
 - 2. Assessment of radiation delivery factors

3. Impressions
4. VDO
5. Occlusal forms
6. Delivery and post insertion care

IX. Implants in irradiated tissues

A. Predictability of implants in irradiated bone

1. Animal studies
2. Human followup studies
3. Patient selection

B. Risk of osteoradionecrosis

1. Mandible
2. Maxilla
3. Mastoid area
4. Frontal bone

C. Irradiation of existing implants

X. Defects associated with composite resections involving the mandible

A. Carcinoma of the tongue

1. Clinical and pathologic considerations

2. Classification and staging
3. Prognostic factors
4. The composite resection
5. The radical neck dissection
6. Complications
7. Surgical modifications
8. Surgical closure
9. Disability – resection of tongue lesions

B. Carcinoma of the floor of the mouth

1. Clinical and pathological considerations
2. Classification and staging
3. Prognostic factors
4. Composite resection and surgical variations
5. Radical neck dissection
6. Initial reconstructive steps
7. Disability – resection floor of mouth tumors

C. Carcinoma of tonsillar region

1. Clinical and pathologic considerations
2. Classification and staging
3. Composite resection
4. Complications
5. Initial reconstructive steps
6. Disabilities – resection of tonsillar area lesions

D. Tumors of the alveolar ridge and mandible

1. Ameloblastoma

2. Squamous carcinoma
3. Osteosarcoma
4. Disability – resections confined to the mandible

XI. Surgical reconstruction of the mandible

A. Free grafts

1. Goals of reconstruction
2. Biology of bone grafting
3. Source of bone
4. Techniques of bone graft reconstruction
 - a. Construction of surgical stents and splints
5. Immediate vs. delayed reconstruction
6. Complications
7. Reconstruction of the body
8. Reconstruction of the ramus

B. Reconstruction of mandible-tongue-tonsillar defects with free flaps

1. Treatment planning and flap selection
2. Fabrication of surgical stents and splints
3. Fibula free flaps
4. Radial forearm free flaps
5. Scapula free flaps
6. Rectus abdominus free flaps

7. Lateral thigh

Vestibuloplasty and tongue release

- A. Skin graft vestibuloplasty
- B. Palatal graft vestibuloplasty
- C. Patient selection
- D. Potential benefits

XII. Physiology of oral function following tongue, jaw, neck resection

- A. Mastication
 - 1. Tests to evaluate masticatory performance in oral cancer patients
 - 2. Global measurement of masticatory function
 - 3. Measures of tongue and cheek function
- B. Mandibular movements
 - 1. Computer modeling of jaw biomechanics in oral cancer patients
- C. Normal deglutition
- D. Dysphagia in head and neck cancer patients
- E. Speech

1. Palatal speech and swallowing aids
2. Speech therapy
3. Surgical reconstruction of the tongue with free flaps and myocutaneous flaps

F. Mandibular guidance therapy

1. Intermaxillary fixation
2. Resection guidance restorations
3. Occlusal equilibration

XIII. Conventional resection dentures – lateral mandibular defects

A. Factors determining the prosthodontic prognosis

1. Tongue status
2. Mandibular deviation
3. Past denture experience
4. Resection terminus
5. Saliva flow
6. Frontal plane rotation
7. Status of mandibular bearing surfaces
8. Unilateral closure forces
9. Nature of “outrigger area”
10. Nature of maxillary bearing surfaces

B. Impressions

1. Functional impression techniques
 2. Outrigger extension
- C. Centric registrations
- D. Selection and positioning of teeth
- E. Processing, delivery, followup

Resection dentures retained by osseointegrated implants – lateral mandibular defects.

- A. Implant sites
- B. Retention bar designs
- C. Processing and followup

XIX. Prosthetic restoration – partially dentulous patients with tongue jaw neck resections

- A. Lateral discontinuity defects
1. Partial denture design concepts
 2. Altered cast impressions
 3. Remaining clinical procedures
 - a. Determining the VDO
 - b. Making centric registrations
 - c. Occlusal relationships
 - d. Processing and followup

B. Defects with mandibular continuity maintained or reestablished

1. Anterior defects

a. Conventional RPD's

- 1) Design concepts
- 2) Extension area
- 3) Prosthodontic procedures

b. Implant retained prostheses

- 1) Implant site selection
- 2) Number of implants
- 3) Retention bar design considerations
- 4) Prosthodontic procedures

2. Lateral defects

a. Conventional RPD's

- 1) Design concepts
- 2) Extension area
- 3) Prosthodontic procedures

b. Implant retained prostheses

- 1) Implant site selection
- 2) Number of implants
- 3) Retention bar design considerations

4) Prosthodontic procedures

XX. Maxillary resections and surgical alterations enhancing the prosthetic prognosis

A. Tumors of the region

1. Epidermoid carcinomas
2. Salivary gland tumors
3. Mesenchymal tumors
4. Other phenomenon

B. Tumor behavior

C. Diagnosis

D. Methods of resection

1. Palatectomy
2. Maxillectomy

E. Surgical modifications to enhance prosthodontic prognosis

1. Hard palate resection
2. Skin grafting
3. Retention of key teeth
4. Palatal mucosa flaps
5. Soft palate retention or resection
6. Access to defect

7. Placement of osseointegrated implants at the time of tumor resection

XXI. Immediate surgical obturators

A. Advantages

1. Support of surgical packing
2. Postoperative speech
3. Postoperative swallowing
4. Length of hospital stay

B. Design principles

C. Impressions

D. Cast preparation

E. Processing

F. Delivery and placement in Operating Room following resection

Interim obturators

A. Fabrication

1. Use of temporary denture liners
2. Occlusal considerations

3. Lateral wall extension
4. Followup care

XXII. Definitive obturators – edentulous patients

A. Treatment concepts

1. Movement of the prosthesis
2. Tissue changes
3. Oral – nasal partition
4. Extension into the defect
5. Teeth
6. Implants
7. Weight

B. Edentulous patients with radical maxillectomy defects

1. Retention, stability and support
2. Remaining palatal structures
3. Extension into the defect
4. Impressions
5. VDO
6. Occlusal schemes
7. Processing, delivery, followup

C. Edentulous patients with partial maxillectomy defects

D. Implant retained maxillary obturators

1. Clinical data

2. Implant sites
3. Retention bar design
4. Clinical procedures

E. Evaluation

F. Relines

XXIII. Definitive obturators for partially dentulous patients

A. Treatment concepts

1. Size and location of the defect
2. Movement of the prosthesis
3. Length of the lever arm
4. Arch form
5. Teeth

B. Partial denture design concepts

1. Abutments
2. Fulcrum line
3. Degree of movement
4. Effect of trismus
5. The defect and its impact on partial denture design

C. Impressions

D. Centric registrations and vertical dimension of occlusion

- E. Occlusal schemes
- F. Processing
- G. Delivery and followup
- H. Evaluation
- I. Relines

XXIV. Speech and velopharyngeal function

- A. Components of speech
- B. Speech phonemes
 - 1. Classification
 - 2. Speech phonemes and prosthetics
- C. Velopharyngeal function
 - 1. Methods of evaluation
 - a. Endoscopy
 - b. Multiview videofluoroscopy
 - c. Pressure flow studies
 - 2. Anatomy and physiology

- a. Soft palate
 - 1) Uvulus muscle
 - a) Innervation
 - b) Function
- b. Posterior pharyngeal wall
 - 1) Superior constrictor muscle
 - a) Innervation
 - b) Function
- c. Lateral pharyngeal wall
 - 1) Levator palatine muscle
 - a) Innervation
 - b) Function
- d. Passavant's pad

XXV. Prosthetic restoration of soft palate defects

A. Immediate and delayed surgical obturation

B. Definitive obturation

1. Obturation of total soft palate defects

- a. Basic principles
 - 1) Size and position
 - 2) Interaction with velopharyngeal musculature
- b. Methods of fabrication
 - 1) RPD design concepts
 - 2) Impression methods
 - 3) Processing
- c. Speech evaluation following obturator placement

2. Obturation of soft palate posterior border defects
 - a. Median posterior border defects
 - b. Lateral posterior border defects

3. Special obturator prostheses
 - a. Palatal lift devices
 - b. Meatal obturators

XXVI. Neoplasms of the facial area

- A. Classification and histogenesis

- B. Basal cell carcinoma
 1. Clinical features
 2. Histopathology
 3. Treatment

- C. Squamous cell carcinoma restoration
 1. Clinical features
 2. Histopathology
 3. Treatment

- D. Malignant melanoma
 1. Clinical features

2. Histopathology
3. Treatment

E. Alterations during surgical resection when enhancing the esthetics and retention of the prosthesis

1. Nasal defects
 - a. Resection of nasal bones
 - b. Use of skin grafts
 - c. Placement of implants
2. Auricular defects
 - a. Use of skin grafts
 - b. Avoidance of hairbearing local flaps
 - c. Placement of implants
3. Orbital defects
 - a. Creation of an orbital cavity
 - b. Positioning of the eyebrow
 - c. Placement of implants
4. Large midfacial defects
 - a. Placement of implants
 - b. Creation of retentive and support areas
 - c. Use of skin grafts

XXVII. Materials used for facial prostheses

- A. Historical background
- B. Materials available
 1. Acrylic resin

2. Acrylic copolymers
3. Polyvinyl chloride copolymers
4. Chlorinated polyethylene
5. Polyurethane elastomers
6. Silicone elastomers
7. HTV silicones
8. RTV silicones
9. Foaming silicones
10. Siphonylenes

C. New materials

1. Silicone block copolymers
2. Polyphosphazenes

D. Primers

E. Adhesives

F. Coloration of materials

XXVIII. Surgical reconstruction of facial defects

A. Surgical reconstruction vs. prosthetic restoration

B. Surgical reconstruction

1. Auricular defects
2. Subtotal nasal defects
3. Total nasal defects

- a. Forehead flaps
- b. Use of conformers
- 4. Large lateral facial defects
 - a. Pedical flaps
 - b. Free flaps

XXIX. Restoration of auricular defects

- A. Temporary prosthesis
 - 1. Materials selection
- B. Definitive prosthesis
 - 1. Impression techniques
 - 2. Sculpting
 - a. Contours
 - b. Texture
 - c. Margin placement
 - 3. Processing
 - a. Flasking techniques
 - b. Handling of materials
 - 4. Coloration
 - a. Intrinsic
 - b. Extrinsic
 - 5. Deglossing
 - 6. Delivery
 - 7. Adhesive selection

XXX. Restoration of large midfacial defects

A. Temporary midfacial prosthesis

B. Definitive midfacial prosthesis

1. Orbital cheek defects

- a. Preparation of the defect at surgical resection of the tumor
- b. Placement of implants
 - 1) Implant sites
- c. Impressions
- d. Implant bar designs
- e. Sculpting
- f. Processing
- g. Coloration
- h. Delivery

2. Large midfacial defects involving the nose, upper lip and hard palate

- a. Preparation of the defect
- b. Placement of implants
- c. Fabrication of the oral portion
- d. Fabrication of the facial portion
 - 1) Impression
 - 2) Sculpting
 - 3) Implant bar designs
 - 4) Interfacing oral portion to facial portion
 - 5) Processing
 - 6) Coloration
 - 7) Delivery and followup

XXXI. Restoration of nasal defects

- A. Temporary prosthesis
 - 1. Selection of materials

- B. Definitive prosthesis – total rhinectomy defects
 - 1. Impression techniques
 - a. Management of unsupported tissues
 - b. Postural positioning
 - 2. Sculpting
 - a. Contours
 - b. Texture
 - c. Margin placement
 - 3. Processing
 - a. Flasking
 - b. Handling materials
 - 4. Coloration
 - a. Intrinsic
 - b. Extrinsic
 - 5. Deglossing
 - 6. Delivery
 - 7. Retention
 - a. Adhesive
 - b. Use of undercuts
 - c. Partial rhinectomy defects

- C. Partial nasal prostheses

1. Impressions
2. Sculpting and margin placement
3. Processing
4. Coloration and delivery

XXXII. Restoration of orbital and ocular defects

A. Ocular defects

1. Surgical considerations
2. Ocular implants
3. Fabrication of ocular prostheses
 - a. Impressions
 - b. Cast formulation
 - c. Wax pattern
 - d. Iris position
 - e. Fabrication of sclera
 - f. Pupil fabrication
 - g. Painting the iris and sclera
 - i. Delivery
4. Complications

B. Restoration of orbital defects

1. Impression
2. Ocular selection
3. Sculpting
 - a. Ocular position
 - b. Lid contours
 - c. Texture

- d. Margin placement
- 4. Flasking
- 5. Processing
- 6. Delivery

XXXIII. Prosthetic restoration of defects secondary to maxillofacial trauma

- A. General considerations
- B. Injury descriptions and statistics
 - 1. Motor vehicle accidents
 - a. Biomechanics of injury
 - 2. Firearms
 - a. Biomechanics of injury
 - 3. Falls, machinery and explosion
 - 4. Burns
 - 5. Sports injuries
- C. Psychological considerations
 - 1. Loss
 - 2. Grief
 - 3. Tasks of the patient and prosthodontist
- D. Maxillofacial injuries
 - 1. Head and cervical injuries
 - 2. Cranial fractures
 - 3. Nasal fractures

4. Soft tissue trauma
5. Jaw fractures
 - a. Classification of jaw fractures
 - b. Management of jaw fractures
 - c. TMJ injuries
6. Local avulsive injuries of dentition and alveolar bone

E. Principles of treatment

1. Treatment goals
2. Staging of treatment
 - a. Initial stabilization
 - b. Early management
 - 1) Instrumentation
 - 2) Fabrication of splints and stents
 - c. Intermediate management
 - 1) General concepts
 - 2) Fixed vs. removable
 - 3) Placement of implants
3. Definitive prosthodontic management
 - a. Anterior localized avulsive defects
 - b. Large avulsive defects
 - 1) Maxilla
 - 2) Mandible
 - c. Edentulous patients

XXXIV. Miscellaneous prostheses

- A. Lip and cheek support prostheses
- B. Laryngectomy aids

- C. Obstructive sleep apnea
- D. Tongue prostheses
- E. Esophageal prostheses
- F. Vaginal radiation carrier
- G. Burn stents
- H. Auditory inserts
- I. Trismus appliances
- J. Mouth controlled devices to assist the handicapped
- K. Custom prosthesis for lagophthalmos of the eye

XXXV. Osseointegrated implants – use in patients with maxillofacial defects

- A. General considerations
- B. Patient selection and treatment planning
- C. Research studies

D. Human clinical followup data

E. Treatment applications

1. Maxillary resection defects
2. Tongue-mandible neck defects
3. Auricular defects
4. Rhinectomy defects
5. Orbital defects
6. Large midfacial defects
7. Combination oral-facial defects

XXXVI. Osseointegrated implants – biologic basis

A. Basic research

1. Work of Branemark and his colleagues
 - a. Historical prospectives
 - b. Bone interfaces with titanium
2. Bone growth in tissue culture
 - a. Titanium
 - b. Titanium alloy
 - c. Chrome-cobalt alloy
 - d. Hydroxyapatite
3. Osteogenic proteins
4. Bone temperature during site preparation
5. Avoidance of immediate loading
6. Epithelial interfaces
 - a. Zonal epithelium

- b. Attached vs. unattached
- c. Keratinized vs. non-keratinized

B. Implant biomechanics

- 1. Occlusal loading
- 2. Cantilevering

XXXVII. Osseointegrated implants – patient selection and treatment planning

A. General considerations

- 1. Immunologic status
- 2. Diabetes
- 3. Radiation
- 4. Patients with parafunctional habits

B. Edentulous patients

- 1. Bone quality and quantity
- 2. Attached vs. unattached tissues
- 3. Keratinized vs. non-keratinized epithelium
- 4. Maxilla vs. mandible
- 5. Removable vs. fixed
- 6. Importance of A-O spread
- 7. Status of opposing arch
- 8. Hygiene compliance
- 9. Bone augmentation – maxilla vs. mandible

C. Partially dentulous patients

1. Anatomic factors
2. Occlusal loads
3. Number, position, distribution
4. Role of provisionals
5. Cantelevering
6. Connecting to natural dentition
7. Pier abutments
8. Single tooth
 - a. Anterior region
 - b. Posterior region

XXXVIII. Cleft lip and palate and other craniofacial deformities

- A. Historical background
- B. Palate development
- C. Classification of clefts
- D. Treatment of sequence
 1. Early treatment – nasooalveolar molding
 2. Surgical treatment
 3. Orthodontic treatment
 4. Pharyngeal flaps and obturators
 5. Bone grafting the cleft
 6. Restoring missing dentition
 - a. FPD

- b. RPD
- c. CD
- d. Overdenture
- e. Use of implants

E. Other related anomalies

- 1. Submucous clefts
- 2. Robin sequence
- 3. Hemifacial microsomia
- 4. Ectodermal dysplasia

Students'/Residents' Total Program Time

Indicate the percentage of the students'/residents' total program time devoted to:

Didactics	25 %
<hr/>	
Clinical activities	60 %
<hr/>	
Laboratory activities	10 %
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Research activities	5 %
<hr/>	
TOTAL	100%
<hr/>	

MAXILLOFACIAL PROSTHETICS WEEKLY SCHEDULE

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>8 am-10 am Cranio-maxillofacial Board meeting</p> <p>10 am- 4 pm <i>(Head and Neck Department)</i></p> <p>Cleft lip/palate clinic</p> <p>Head and Neck surgery OPD</p> <p>Dental Oncology</p>	<p>8 am- 10 am MFP Seminar</p> <p>10 am – 1 pm MFP Clinic</p> <p>2 pm - 4:00 pm Laboratory works</p>	<p>8 am- 10 am Head and Neck Tumor Board Meeting</p> <p>10 am- 4 pm Head and Neck Maxillofacial Prosthodontic Clinic</p>	<p>8 am - 10 am Implant Treatment Planning</p> <p>10 am- 4 pm Medical Oncology/ Radiation Therapy/ Dental Oncology</p>	<p>8 am -10 am Hospital rounds</p> <p>10 am- 4 pm Head and Neck Surgery/</p>	<p>8 am -10 am Research</p> <p>10 am- 4 pm MFP Clinic and Laboratory works</p>

Cumulative Grade point Average (CGPA)

- Seminar & Journal Club presentation: 2.5
- Clinical Work: 5.0
- Lab Procedure: 1.0
- Publication: 1.5

Grade	Points
A1	10
A2	9
B1	8
B2	7
C1	6
C2	5
I	Incomplete
F	Fail