WINSPERT

PROSTHODONTICS

COMBINATION SYNDROME

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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WINSPERT MIND MAP

COMBINATION SYNDROME

Definition

- Definition: Characteristic features from edentulous maxilla opposed by natural mandibular anterior teeth
- Origin:Coined by Ellsworth Kelly after following 6 patients for 3 years.

Features of Combination Syndrome

- Bone Loss: Anterior maxillary ridge loss when opposed by mandibular anterior teeth.
- Key Features: Reduction of maxillary bone, enlargement of tuberosities, resorption under mandibular RPD.

Adaptation Issues

- Poor Fit: Poor adapatation of the prosthesis.
- Tissue Changes: Epulis fissuratum and periodontal changes may occur.

Partial Maxillary Edentulism

- Similar Symptoms: Signs and symptoms parallel combination syndrome.
- Preservation Effects: Presence of posterior maxillary teeth prevents hypertroic changes.

Classification of Combination Syndrome

- Overview: Three classes with ten modifications based on maxillary condition.
- Key Feature: Anterior maxillary resorption from anterior mandibular teeth is consistent in all cases and modifications.

Class II Combination Syndrome

- Maxilla: Partially edentulous with anterior region edentulous, posterior regions present.
- Mandible Modifications: Same modifications as Class I (M1, M2, M3).

Additional maps

- Vertical Dimension: Loss of the vertical dimension of occlusion (VDO).
- Tooth Extrusion: Extrusion of lower natural teeth.
- Occlusal Discrepancy: Occlusal plane discrepancy present in patients.

Role or Mandible RED

- Negative Impact: Mandibular RPD contributes to early anterior maxillary bone
- Severe Resorption: Maxillary resorption is a dominant feature.

Residual Ridge Resorption

- Remodeling: Post-extraction remodeling includes bone resorption and contour c hange.
- Immediate Dentures: Reduce maxillary resorption initially but continuous resor ption occurs under dentures.

Class I Combination Syndrome

- Maxilla: Completely edentulous alveolar ridge.
- Mandible Modifications: Modification 1 (M1): Partially edentulous. Modificatio n 2 (M2): Fixed full dentition. Modification 3 (M3): Teeth in anterior and one poste rior region.

Class III Combination Syndrome

- Maxilla: Partially edentulous with one posterior region present only; anterior region edentulous.
- Mandible Modifications: Consistent with Classes I and II (M1, M2, M3A, M3B).

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MIND MAP

TREATMENT APPROACHES FOR PATIENTS WITH COMBINATION SYNDROME

Overview of Combination Syndrome

- Combination syndrome is characterized by specific dental and skeletal changes.
- It requires careful management to prevent complications such as loss of posterior occlusion.

Main Treatment Approaches

- Prevention of posterior occlusion loss is crucial.
- Avoidance of anterior hyperfunction is a key focus.

Design of Mandibular Partial Dentures

- A correctly designed denture should support supra-erupted anterior teeth.
- It maintains balanced occlusal stress over soft and hard tissues.

Treatment for Over-Erupted Teeth

- Root canal treatment may be necessary for over-erupted mandibular teeth.
- Shortening of clinical crowns can help position maxillary teeth properly.

Surgical Options

- Extraction of anterior teeth may be combined with alveoloplasty.
- Construction of functional complete dentures can stabilize occlusion.

Indications for Reconstructive Surgery

- Surgical therapy often involves advanced bone grafting techniques.
- Combining methods helps reconstruct the maxillary arch effectively.

Bone Quality Considerations

- Poor bone quality in the maxillary posterior region necessitates careful planning.
- Sufficient implant length on each side is vital for stability.

Immediate Implant Replacement

- Prompt replacement of lost teeth is effective for preventing combination syndrome
- Early intervention can mitigate potential complications.

Conventional Treatment Modalities

- The first two modalities are pre-implant restorative techniques
- These aim to restore function before surgical intervention.

Techniques for Stable Dentures

- Mucostatic impression techniques can help avoid displacement of fibrous tissue.
- Use light body silicone or alginate for accurate impressions.

Follow-Up Care

- Ongoing care is essential to maintain posterior occlusion
- Regular evaluations can prevent deterioration of dental health.

Implant Treatment Strategies

- Implants can re-establish solid posterior occlusion.
- They can be used with retained or supported prosthetics.

Classification of Treatment Cases

- Class I cases can often be treated with splinted implants.
- Class II and III may require more complex solutions or extractions.

Advantages of Implant Supported Prosthesis

- Preserves bone compared to conventional dentures.
- Enhances resistance to occlusal forces when splinted appropriately.

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COMBINATION SYNDROME

Question 1

What is combination syndrome?

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COMBINATION SYNDROME

Answer 1

Combination syndrome is defined as the characteristic features that occur when an edentulous maxilla is opposed by natural mandibular anterior teeth. It includes loss of bone from the anterior maxillary ridge, overgrowth of the tuberosities, papillary hyperplasia of the hard palatal mucosa, extrusion of mandibular anterior teeth, and loss of alveolar bone and ridge height beneath the mandibular removable partial denture bases.

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COMBINATION SYNDROME

Question 2

What are the three key features of combination syndrome described by Ellsworth Kelly?

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COMBINATION SYNDROME

Answer 2

The three key features of combination syndrome are reduction of anterior maxillary bone, enlargement of maxillary tuberosities, and bone resorption under mandibular RPD bases.

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COMBINATION SYNDROME

Question 3

What secondary changes are associated with combination syndrome?

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Answer 3

Secondary changes associated with combination syndrome can include loss of vertical dimension of occlusion (VDO), extrusion of lower natural teeth, occlusal plane discrepancy, anterior spatial repositioning of the mandible, poor adaptation of the prosthesis, epulis fissuratum, and periodontal changes.

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Question 4

What is the dominant feature of combination syndrome?

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Answer 4

The dominant feature of combination syndrome is severe maxillary resorption.

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Question 5

How is combination syndrome classified?

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Answer 5

Combination syndrome is classified into three classes based on the maxillary edentulous condition, with modifications based on the mandibular condition.

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COMBINATION SYNDROME

Question 6

What is the treatment approach for patients with combination syndrome?

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Answer 6

The main treatment approaches for patients with combination syndrome include prevention of loss of posterior occlusion and avoidance of anterior hyperfunction through various treatment modalities, including conventional and surgical-prosthetic techniques.

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Question 7

What treatment options are available for Class I combination syndrome?

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Answer 7

Class I combination syndrome can be treated with implant-retained or supported maxillary prosthesis on 2 to 4 splinted implants placed in the posterior maxillary region, opposed by mandibular bilateral distal extension RPD.

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Question 8

What is the recommended treatment for Class II and Class III combination syndrome?

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Answer 8

Class II and Class III combination syndrome with partially edentulous maxilla and salvageable posterior teeth are best treated with a well-designed and maintained conventional RPD or, as an alternative, an implant prosthesis.

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Question 9

What is the impact of using implant-supported prostheses compared to conventional dentures for combination syndrome?

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Answer 9

Implant-supported prostheses have a bone-preserving effect, while conventional denture treatment promotes continued ridge resorption.

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PROSTHODONTICS

OCCLUSION SCHEMES, CANINE GUIDANCE, GROUP FUNCTION, BILATERALLY, BALANCED OCCLUSION

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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MIND MAP

OCCLUSION SCHEMES IN RESTORATIVE TREATMENT

Centric Relation (CR)

- CR is the maxillomandibular relationship where condyles articulate optimally.
- It acts as a reliable reference point for recording maxilla and mandible relationships.

Mandibular Movements

- In the sagittal plane, involves rotational and translational movements around the terminal hinge axis.
- Horizontal plane movements include lateral excursions with specific interactions of working and non-working condyles.

Centric Occlusion (CO)

- CO is the occlusion of opposing teeth when in centric relation.
- Essential for prosthodontic treatments, marking critical reference points.

Types of Occlusion in Prosthodonties

- Bilaterally balanced occlusion allows maximum teeth contact in excursive positions.
- Unilateral balanced occlusion focuses on contact on the working side, with no co ntact on the non-working side.

Mutually Protected Occlusion

- Relationships emphasize anterior teeth guiding excursive movements to prevent posterior contact.
- Posterior teeth act as a vertical closure stop, minimizing horizontal loading.

Understanding Occlusal Contacts

- The goal is to establish stable occlusal contacts in posterior teeth.
- Avoid deflective contacts that can destabilize the mandibular position.

Determining Centric Relation

- Clinically detectable through superior and anterior mandibular direction.
- Dependent on controlled jaw movements to locate the physiological transverse hinge axis.

Maximum Intercuspation (MI)

- Position of teeth during maximum contact, ideally aligning with centric relation.
- Discrepancies between MI and CR may necessitate corrective occlusal therapy.

Jaw Relations for Complete Dentures

- Vertical Jaw Relation consists of VDR and VDO, assessed physiologically and mechanically.
- Horizontal Jaw Relation revolves around centric relation and its eccentric movements.

Long Centric Occlusion

- This concept allows freedom in anteroposterior direction with arbitrary lengths.
- Requires careful spacing for harmonious posterior disocclusion during movements

Conclusion

- The understanding of occlusion schemes is critical for effective restorative dentistry.
- Proper occlusal contacts can prevent complications and enhance treatment outcomes.

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OCCLUSION SCHEMES, CANINE GUIDANCE, GROUP FUNCTION, BILATERALLY, BALANCED OCCLUSION

Question 1

What is the primary goal of occlusal contacts in restorative treatment?

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Answer 1

The primary goal is to create stable occlusal contacts in the posterior teeth, rather than deflective contacts that may destabilize the mandibular position.

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Question 2

What is centric relation?

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Answer 2

Centric relation is defined as the maxillomandibular relationship where the condyles articulate with the thinnest avascular portion of their respective disks in the anterosuperior position, independent of tooth contact.

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Question 3

Why is the determination of centric relation important?

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Answer 3

Determining centric relation is essential for analyzing dental interarch, condylar position, and skeletal relationships.

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Question 4

What movements are included in the terminal hinge axis determination?

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Answer 4

The terminal hinge axis is located through a series of controlled opening and closing movements of the jaw when the mandible is held in the most retruded position relative to the maxilla.

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Question 5

What are the three recognized concepts of occlusion in prosthodontics?

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Answer 5

The three recognized concepts are bilaterally balanced occlusion, unilateral balanced occlusion (group function occlusion), and mutually protected occlusion (canine-protected occlusion).

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Question 6

What is bilaterally balanced occlusion?

Answer 6

Bilaterally balanced occlusion dictates that the maximum number of teeth should contact in all excursive positions of the mandible, maintaining simultaneous contact in centric and eccentric positions on both sides.

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Question 7

What characterizes unilateral balanced occlusion?

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Answer 7

In unilateral balanced occlusion, occlusal contact occurs between all opposing posterior teeth on the working side only, while there is no contact on the non-working side until centric relation is reached.

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Question 8

What is the significance of long centric occlusion?

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Answer 8

Long centric occlusion allows for some freedom in anteroposterior direction when the mandible translates from centric relation to anterior tooth contact, promoting harmonious gliding contact among posterior teeth.

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Question 9

What role do anterior teeth play in mutually protected occlusion?

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Answer 9

In mutually protected occlusion, the anterior teeth guide excursive movements, and no posterior contact occurs during lateral or protrusive excursions, minimizing horizontal loading on the teeth.

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Question 10

What is maximum intercuspation (MI)?

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Answer 10

Maximum intercuspation is the position of teeth when upper and lower teeth are in maximum contact and intercuspation, ideally coinciding with centric relation.

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PROSTHODONTICS

RPD PART CLASPS KENNEDY'S CLASSIFICATION

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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REMOVABLE PARTIAL DENTURES

Definition

- A removable partial denture (RPD) replaces one or more natural teeth.
- It can be easily removed and replaced by the patient.

Indications for RPD

- Lengthy edentulous span unsuitable for fixed prosthesis.
- Poor prognosis for complete dentures due to ridge morphology.

Classification of Partial Edentulous Arches

- Kennedy's Classification is widely accepted.
- Four basic classes are identified.

Applegate’s Rules for Classification

- Rule 1: Classification should consider tooth extractions that might alter it.
- Rule 2: Missing third molar is not included if not replaced.
- Rule 3: Present third molar is included if used as an abutment.

Indirect Retainers

- Prevent movement of the base away from the ridge.
- Placed away from the fulcrum line for better leverage.

Denture Base

- Covers residual ridges and supports denture teeth.
- Essential for the stability of the prosthesis.

Components of RPD

- Major Connector: Connects both sides of the dental arch.
- Minor Connector: Links other components to the major connector.

Kennedy's Classification

- Class I: Bilateral edentulous area located posterior to natural teeth.
- Class II: Unilateral edentulous area located posterior to natural teeth.
- Class III: Unilateral edentulous area with remaining teeth both anterior and posterior.
- Class IV: Bilateral edentulous area crossing the midline anterior to remaining teeth.

Direct Retainers

- Provide retention against dislodging forces.
- Commonly known as "clasp" with four key elements.

Fulcrum Lines

- Class I: Passes through posterior abutments.
- Class II: Diagonal fulcrum line between the distal extension and the opposite abutment.

Practical Examples

- Illustrations of various clasps classification.
- Graphical examples for better understanding

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MIND MAP

MAJOR CONNECTORS IN PARTIAL DENTURES

Definition of Major Connectors

- A major connector connects parts of the prosthesis across the dental arch.
- It ensures stability against functional stresses in dentures.

Guidelines for Designing Major Connectors

- Must avoid movable tissue and gingival impingement.
- Should have relief under connectors to prevent interference from tissue prominences.

Lingual Bars

- The superior border must be ⩾ 4mm below the gingival margin to prevent impingement
- Adjustments may be required if the denture base moves tissue-ward during function.

Sublingual Bars Details

- Useful when floor of mouth height limits traditional bar placement.
- Contraindications include high lingual frenum or interfering tori.

Labial Bars Use Cases

- Utilized where remaining teeth's lingual inclination complicates normal bar use.
- Should be placed far from gingival tissue to ensure function.

Various Maxillary Connector Options

- Full palatal plate is indicated for long distal extensions or limited anterior teeth.
- U-shaped connectors should be avoided unless necessary due to biomechanical inefficiency.

Types of Mandiblular Major Connectors

- The lingual bar is commonly used, requiring at least 8mm of vestibular depth.
- A lingual plate is used when a lingual bar is impractical due to high floor of mouth

Linguoplate (Lingual Plate) Specifics

- Engages anterior teeth to mitigate horizontal rotations in cases of vertical resorption.
- Used for stabilizing periodontally weakened teeth.

Lingual Bar with Cingulum Bar

- Consists of a lingual bar plus additional bars above anterior teeth cingula.
- Controversial due to potential food traps and effectiveness for stabilization.

Types of Maxillary Major Connectors

- Single palatal strap is not suitable for distal extensions or anterior replacements
- Combination anterior and posterior palatal strap provides enhanced rigidity.

Considerations for Palatal Bars

- Single palatal bars are only for tooth-supported cases and can be too bulky.
- Anterior-posterior palatal bars have narrower elements, increasing bulk for rigidity.

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DIRECT RETAINER

Definition and Function

- A direct retainer is a unit of a removable partial denture (RPD) that secures the prosthesis to prevent displacement.
- Composed of retentive arms, reciprocal elements, rests, and minor connectors.

Types of Mechanical Retention

- Most mechanical retention is achieved through direct retainers (clasp assemblies) engaging tooth undercuts.
- There are two classifications of mechanical retainers: Intracoronal and Extracoronal.

Extracoronal Retainers

- Engage the external surfaces of abutment teeth in natural undercuts or prepare d depressions.
- Two main classes: SupraBulge and Infrabulge retainers.

Clasp Assembly Types

- A For tooth-born RPDs: specifically for Class III and IV dentures.
- Exceptions to cast supra-bulge design include esthetic concerns and weak abutments

Ring Clasp

- Encircles the tooth, mainly for tilted mandibular or maxillary molars.
- Should not be used unsupported; requires a supporting strut for stabilization.

C Clasp (Hairpin Clasp)

- Engages undercuts from an occlusal approach, known for being non-aesthetic.
- Difficult to adjust and may trap food, affecting oral hygiene.

Intracoronal Retainer

- Precision attachments set into crown castings for optimal aesthetics.
- Disadvantages include contraindications that limit usage.

Requirement of Clasp Assembly

- Occlusal rest design prevents clasp arm movement toward the cervical.
- Each retentive terminal needs to be opposed by a reciprocal element to resist pressures during placement/removal.

Suprabulge Clasp Assembly

- Circumferential clasp (Akers clasp) is preferred for its stability.
- Retentive arm begins above the height of contour, ensuring effective engagement

Embrasure Clasp

- Used in quadrants with no edentulous areas, allows placement of direct retainer s where needed.
- Consists of two rests and arms, facilitating hygiene but covering larger areas.

Considerations for Tooth and Tissue Borne Prostheses

- In Classes I and II, special attention is needed due to rotational stress.
- Direct retainers with stress-breaking capabilities are crucial in these scenarios.

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MIND MAP

UNDERSTANDING BAR CLASPS IN DENTURES

What is Bar Clasp?

- A cast clasp emerging from the partial denture framework.
- Approaches the retentive undercut from a gingival direction.

Classification of Bar Clasp Arms

- Different shapes include T, modified T, I, Y, L, U,S.
- The shape is less critical than the mechanical and functional stability.

Soft Tissue Relief

- Achieved through 28- or 30-gauge wax under the approach arm.
- Prevents tissue impingement.

Vestubular Depth Requirement

- Minimum of 4mm is necessary for the clasp approach arm.
- This includes 3mm from the free gingival margin and 1mm for clasp thickness.

Components of the RPI Clasp Assembly

- "R" for rest usually present mesially on occlusal or lingual surfaces.
- "P" for proximal plate, providing stabilizing features, ideally positioned on guide planes.
- "I" for I-bar retentive arm, tapering to contact the tooth without food entrapment.

RPA Clasp Introduction

- Similar to RPI but uses a wrought wire circumferential clasp (Akers).
- Used when there is insufficient vestibular depth or severe tissue undercuts.

Importance of Clasp Design

- Covers minimal tooth structure and provides stability.
- T- and Y-shaped terminal ends are commonly misapplied, often needing less coverage than utilized.

Limitations of Bar Clasps

- Not suitable for deep cervical or severe soft tissue undercuts.
- Avoid areas with pronounced frenal attachments due to potential food traps.

RPI Clasp Assembly Overview

- The most common clasp assembly for tooth and tissue-borne prosthesis with stress release.
- Components include a mesio-occlusal rest and a distal guiding plane.

Contraindications for RPI Clasp

- Insufficient vestibular depth (less than 4mm).
- No labial or buccal undercuts present on the abutment.

Combination Clasp Design

- Similar to a cast circumferential clasp but features a round wrought wire retentive arm.
- Offers adjustable placement and improved esthetics with smaller diameter flexibility.

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Question 1

What is a removable partial denture (RPD)?

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Answer 1

A removable partial denture is a prosthesis that replaces one or more, but not all, natural teeth and supporting structures that can be removed and replaced in the mouth by the patient.

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Question 2

What are the indications for a removable partial denture?

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Answer 2

Indications include lengthy edentulous spans, no posterior abutment for a fixed prosthesis, excessive alveolar bone loss, poor prognosis for complete dentures, reduced periodontal support, need for cross-arch stabilization, need for immediate replacement of extracted teeth, and cost/patient desire considerations.

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Question 3

How did Kennedy classify partially edentulous arches?

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Answer 3

Kennedy classified partially edentulous arches into four basic classes:
Class I - bilateral edentulous area located posterior to natural teeth;
Class II - unilateral edentulous area located posterior to natural teeth;
Class III - unilateral edentulous area with natural teeth remaining both anterior and posterior;
Class IV - a single, bilateral edentulous area located anterior to remaining natural teeth.

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Question 4

What is the function of a major connector in a removable partial denture?

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Answer 4

A major connector connects the parts of one side of the dental arch to those of the other side, providing unification and rigidity to the denture.

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Question 5

What components make up a direct retainer for a partial denture?

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KENNEDY'S CLASSIFICATION

Answer 5

A direct retainer, commonly known as a clasp, is composed of four elements: a rest, a retentive arm, a reciprocal arm, and a minor connector.

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Question 6

What is an indirect retainer and where is it usually placed?

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KENNEDY'S CLASSIFICATION

Answer 6

An indirect retainer prevents or resists movement or rotation of the base(s) away from the residual ridge, typically taking the form of rests placed away from the fulcrum line.

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Question 7

What are the requirements of a clasp assembly in a removable partial denture?

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KENNEDY'S CLASSIFICATION

Answer 7

Clasp assemblies must ensure that the occlusal rest prevents movement of the clasp arms toward the cervical, retentive terminals are opposed by reciprocal components, and they avoid direct transmission of tipping and rotational forces to the abutment.

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KENNEDY'S CLASSIFICATION

Question 8

What distinguishes the RPI clasp assembly?

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KENNEDY'S CLASSIFICATION

Answer 8

The RPI clasp assembly consists of a mesio-occlusal rest, a proximal plate, and an I-bar retentive arm, providing stress release during function, particularly for distal extension prostheses.

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KENNEDY'S CLASSIFICATION

Question 9

What is the impact of the position of indirect retainers in maintaining prosthesis stability?

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KENNEDY'S CLASSIFICATION

Answer 9

Indirect retainers should be placed as far away from the distal extension base as possible to gain the best leverage advantage against lifting, enhancing the stability of the prosthesis during function.

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RPD PART CLASPS
KENNEDY'S CLASSIFICATION

Question 10

What is a contraindication for using the RPI clasp?

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KENNEDY'S CLASSIFICATION

Answer 10

Contraindications for the RPI clasp include insufficient depth of the vestibule, lack of labial or buccal undercut on the abutment, severe soft tissue undercut, and a disto-buccal undercut.

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PROSTHODONTICS

RPD AND DENTURE REPAIR

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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MIND MAP

RPD AND DENTURE REPAIRS

Importance of Maintenance

- Regular maintenance includes repair, replacement, or modification.
- Repair procedures may be costly but can be the most practical solution.

Types of Clasp Repair

- Repair with Wrought Wire Clasp
  i. Used for broken retentive arms of circumferential clasps.
  ii. Requires accurate impressions to avoid altering framework relationships.
- Procedure for Wrought Wire Clasp Repair
  i. A groove in the minor connector area is prepared for wire anchorage.
  ii. Soft impressions (using alginate) are taken for casting.

Surveyed Cast Clasp Repair

- Allows patients to retain their denture during repairs for functional needs.
- New clasp arm positions are made using a close-fitting resin matrix.
- Clinical Visit Procedure for Surveyed Clasp Repair
  i. Check fit and occlusion, then impression is made in the patient's mouth.
  ii. Use tissue conditioner for added comfort and stability.

Dealing with Fractured Occlusal Rest

- A Fractures can occur due to inadequate tooth preparation.
- Marginal ridge reduction is essential for proper spacing.

Considerations for Successful Repairs

- Operator skill is crucial for techniques like laser welding.
- Initial equipment cost may be high but can lead to long-term benefits.

Overview of Removable Partial Dentures (RPD)

- Common issues include fractures in the clasp components.
- Repairs preferred over complete refabrication when feasible.

Common Repairs in Partial Dentures

- Repairs often focus on clasp components.
- Evaluating the cause of breakage is crucial prior to repair.

Repair with Cast Clasp

- More rigid, suitable for fractures needing stronger support.
- Often involves additional lab steps, increasing time and cost.
- Procedure for Cast Clasp Repair
  i. A pattern is fabricated in wax or resin for the clasp.
  ii. Replacement clasp must be kept contained within the resin.

Laboratory Steps for Repair

- Conventional mapping and surveying of working casts for clasp designs.
- Utilizing utility wax to block out undercuts in the cast.

Advanced Repair Techniques

- Laser Welding
  i. A modern technique for joining dental alloys.
  ii. Offers strong bond, localized heat, and enhanced fit with reduced time.

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RPD AND DENTURE REPAIR

Question 1

What is a commonly encountered problem when repairing removable partial dentures?

Answer 1

Fractures of the clasp component are a commonly encountered problem in dental offices.

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RPD AND DENTURE REPAIR

Question 2

Why are repair procedures often preferred over refabrication of an entire prosthesis?

Answer 2

Repair procedures are preferred whenever possible because they are often more feasible than refabricating the entire prosthesis.

Question 3

What should be evaluated before commencing the repair procedure of a broken clasp?

Answer 3

The cause of the breakage of the clasp must be evaluated prior to commencing the repair procedure.

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RPD AND DENTURE REPAIR

Question 4

What condition of the metal at the fracture site necessitates mouth preparation for clasp repair?

Answer 4

If the thickness of the metal at the fracture site is less than 1.2 mm, mouth preparation is required.

Question 5

What is the typical wire used in the repair with wrought wire clasp for broken retentive arms?

Answer 5

An 18-gauge wrought wire is typically used for the repair of broken retentive arms.

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RPD AND DENTURE REPAIR

Question 6

What is a common disadvantage of using wrought wire for clasp repair?

Answer 6

Although it is quick and simple, repairing with wrought wire may not yield the best results

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RPD AND DENTURE REPAIR

Question 7

What is a crucial step in the laboratory procedure after producing a working cast?

Answer 7

Survey the full arch working cast and draw the design of the clasp on the cast.

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RPD AND DENTURE REPAIR

Question 8

What unique advantage does laser welding have over traditional soldering in dental repairs?

Answer 8

Laser welding is considered superior due to its high reproducible strength, localized heat production, and reduced working time.

Question 9

In the context of repairing a fractured occlusal rest, what is a common cause of the fracture?

Answer 9

A fractured occlusal rest is often due to thin metal over the marginal ridge of the abutment tooth resulting from inadequate tooth preparation.

Question 10

What technique is recommended for attaching the retentive segment of the new clasp arm to the denture base?

Answer 10

The retentive segment of the new clasp arm is typically attached to the denture base with auto polymerizing acrylic resin.

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PROSTHODONTICS

OVER DENTURE ON NATURAL TEETH AND OVER DENTURE ON IMPLANT SUPPORTED

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

WINSPERT

MIND MAP

OVER DENTURES ON NATURAL TEETH AND IMPLANT-SUPPORTED DENTURES

Types of Implants

- Dental implants can be subperiosteal, transosteal, and endosseous.
- The endosseous root form implant is the most common in modern implantology.

Treatment Alternatives for Edentulous Mandible

- Options include:
  i. Removable prosthesis
  ii. Conventional complete denture
  iii. Implant-supported overdenture
  iv. Fixed prosthesis (supported exclusively by implants)

Understanding Implant-Retained vs. Implant-Supported Overdentures

- Implant-retained overdenture is anchored by attachments but supported by soft tissues.
- Implant-supported overdenture relies entirely on implants, not loading soft tissues.

Psychological Benefits of Implants

- Improved psychological outlook for patients.
- Enhanced retention and speech abilities.

Maintenance and Care for Implant Retained Prostheses

- More frequent maintenance appointments are necessary.
- Patients must be aware of potential treatment failure risks.

Overview of Over Dentures

- Over dentures are removable dental prostheses that cover natural teeth or implants.
- Also known as overlay dentures or superimposed prostheses.

Age Considerations for Implant Prostheses

- Advanced age is not a contraindication for implants.
- Careful planning and case selection are crucial for success.

Treatment Alternatives for Edentulous Maxilla

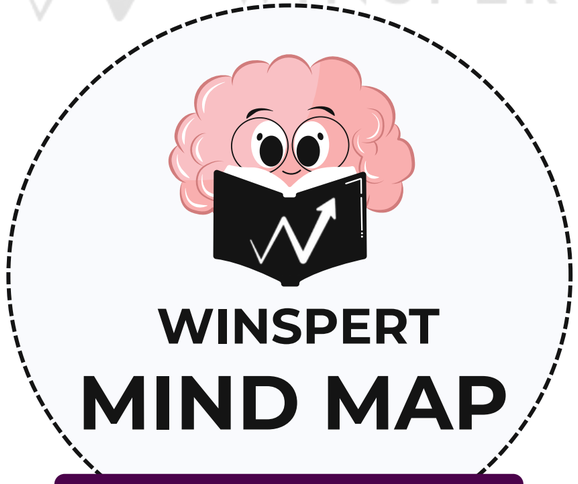
- Options include:
  i. Removable prosthesis
  ii. Conventional complete denture
  iii. Implant-supported overdenture
  iv. Fixed prosthesis (supported by four or more implants).

Advantages of Implant-Supported Overdentures

- Minimum anterior bone loss.
- Improved stability and occlusion.
- Enhanced chewing efficiency and comfort.

Challenges Associated with Implants

- A Surgical complications, including bone grafting, may be required.
- Higher failure rates in maxilla due to poor bone quality.



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MIND MAP

TYPES OF IMPLANT ATTACHMENT SYSTEMS

Overview of Attachment Systems

- Two main parts: abutment and housing/insert
- Splinted or free-standing options available

Abutments

- Directly attach to the implant
- Foundation for prosthetic attachments

Splinted Attachments

- Connect multiple implants to distribute forces
- Particularly useful for zygomatic attachments

Locator Attachments

- Most common system for implant-supported overdentures
- Compatible with various implant systems and easy to replace components

Patient Satisfaction and Masticatory Capacity

- Higher satisfaction versus conventional dentures
- Significant improvements reported after conversion to over-dentures.

Success Criteria for Implants

- Minimal vertical bone loss benchmark
- Suitable for immediate loading protocols

Benefits of Maxillary Over-dentures

- Increased comfort with reduced palatal coverage
- Enhanced ease of cleaning and speech capabilities

Tooth Supported Overdentures

- Issues with stability and bone loss in complete dentures
- Utilizing endodontically treated roots for improved support in select cases

Housing and Retentive Inserts

- Attach to the prosthesis
- Easily interchangeable based on retention needs

Free-Standing Attachments

- Implant-retained, partly tissue-supported dentures
- Improved cleansability for patients with reduced dexterity

Mandibular Implant Supported Overdentures

- Recommended for atrophic mandibles
- High success rates with bilateral implants

Complications with Locator Attachments

- A Potential issues with insertion and hygiene
- Need for regular component replacement

Maxillary Implant Supported Overdentures

- Complex restoration with the lowest survival rates
- High maintenance requirements compared to mandibular overdentures

Common Complications of Implant Retained Overdentures

- Insert replacement or deactivation
- Relining of overdentures and potential peri-implant mucositis

Map Your Way to ADC Success!

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OVER DENTURE ON NATURAL TEETH AND OVER DENTURE ON IMPLANT SUPPORTED

Question 1

What are overdentures in dentistry?

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Answer 1

Overdentures are any removable dental prosthesis that covers and rests on one or more remaining natural teeth, the roots of natural teeth, and/or dental implants.

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Question 2

What is the main difference between implant-retained and implant-supported overdentures?

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Answer 2

An implant-retained overdenture is retained by an attachment system but supported by underlying soft tissues, while an implant-supported overdenture is supported in its entirety by implants without loading the underlying soft tissues.

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Question 3

What are some advantages of implant-supported/retained overdentures over conventional complete dentures?

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Answer 3

Advantages include minimal anterior bone loss, improved stability, increased chewing efficiency, better retention and speech, and enhanced comfort compared to conventional dentures.

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OVER DENTURE ON NATURAL TEETH AND OVER DENTURE ON IMPLANT SUPPORTED

Question 4

What is the significance of accurate impression taking for implant-retained overdentures?

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Answer 4

Accurate impression taking is crucial for ensuring that the supporting soft tissue is recorded in a passive state, as inaccuracies can lead to rapid wear of implant components.

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OVER DENTURE ON NATURAL TEETH AND OVER DENTURE ON IMPLANT SUPPORTED

Question 5

What are some challenges associated with implant-supported overdentures?

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Answer 5

Challenges include the need for implant surgery which may involve multiple procedures, potential treatment complications and failures, and increased maintenance appointments compared to conventional dentures.

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OVER DENTURE ON NATURAL TEETH AND OVER DENTURE ON IMPLANT SUPPORTED

Question 6

How are implants classified based on their morphology?

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OVER DENTURE ON NATURAL TEETH AND OVER DENTURE ON IMPLANT SUPPORTED

Answer 6

Dental implant forms can be classified as subperiosteal, transosteal, endosseous plate (blade) forms, and endosseous root form implants, with the latter being the mainstay of modern implantology.

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OVER DENTURE ON NATURAL TEETH AND OVER DENTURE ON IMPLANT SUPPORTED

Question 7

What is the recommended number of implants for a mandibular implant-supported overdenture?

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Answer 7

The recent consensus recommends the use of two implants placed bilaterally in the interforaminal region of the mandible as the first choice for restoration of an edentulous mandible.

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Question 8

Why are maxillary overdentures considered complex?

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Answer 8

Restoration of the edentulous maxilla is complex due to lower survival rates of maxillary implants, the need for meticulous planning, and higher maintenance requirements compared to mandibular implants.

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Question 9

What are common complications associated with implant-retained overdentures?

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Answer 9

Common complications include deactivation or replacement of inserts, loosening of abutment screws, fracture of denture teeth, and peri-implant mucositis or tissue hyperplasia.

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Question 10

Why might tooth-supported overdentures be beneficial for certain patients?

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Answer 10

Tooth-supported overdentures can help preserve the residual alve

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PROSTHODONTICS

PERI IMPLANTS AND PERI MUCOSITIS AND IMPLANT MAINTENANCE

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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MIND MAP

PERI IMPLANT DISEASES AND IMPLANT MAINTENANCE

Causes of Implant Failure

- A Prosthesis instability leading to failure.
- Early and late failure definitions explained.

Peri Implant Mucositis

- Reversible inflammatory reaction without bone loss
- Similarities to gingivitis in periodontium

Peri Implantitis

- Inflammatory reaction leading to bone loss
- Indications of peri-implantitis, including probing depth

Clinical Indices for Diagnosis

- Clinical signs like swelling and redness
- Importance of plaque evaluation around the implant

Important Parameters for Diagnosis

- Recording changes in probing depths over time
- Evaluating additional clinical parameters for diagnosis

Conclusion

- Early intervention crucial for management of peri-implant diseases
- Maintenance practices for long-term success of implants

Overview of Implant Retained Prosthesis

- Increasing use in modern dentistry
- High survival rates of osseo integrated dental implants

Peri Implant Diseases

- Classification of peri implant diseases
- Differences between peri implant mucositis and peri-implantitis

Symptoms of Peri Implant Mucositis

- Classification of peri implant diseases
- Differences between peri implant mucositis and peri-implantitis.

Diagnosis of Peri Implant Diseases

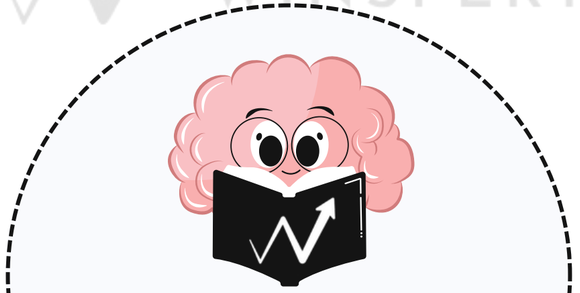
- Importance of early detection and frequent follow-ups
- Differentiation between peri-implant mucositis and peri-implantitis

Peri-Implant Probing Techniques

- Reliability of probing as a monitoring tool
- Using light probing forces to avoid tissue trauma

Radiography in Diagnosis

- Establishing a baseline radiograph at prosthesis placement
- Regular radiographic evaluations recommended.



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MIND MAP

MANAGEMENT OF PERI-IMPLANT DISEASES

Management of Peri-Implantitis

- Cumulative Interceptive Supportive Therapy (CSIT) is beneficial.
- Antibiotic therapy may be necessary for advanced cases.

Surgical Therapy Options

- Surgical intervention is indicated for probing depth >5mm.
- Resection or regenerative surgery depends on defect type.

Regenerative Surgery

- Success seen with natural bone and collagen membrane in bony defects.
- Case selection and 3D imaging are essential before surgery.

Maintenance Review Protocol

- Surgical therapy often involves advanced bone grafting techniques.
- Combining methods helps reconstruct the maxillary arch effectively.

Professional Cleaning Recommendations

- Avoid stainless steel scalers on implants to prevent damage.
- Use titanium or plastic instruments for safe cleaning of implant surfaces.

Management of Peri-Implant Mucositis

- Assessment of plaque and bleeding on probing is crucial.
- Regular dental reviews are recommended for implant maintenance.

Non-Surgical Therapy for Peri-Implantitis

- Bacteria-induced inflammation can be treated non-surgically.
- Use antiseptics like 2% CHX and 3% hydrogen peroxide.

Resection Techniques

- Resection with osseous surgery is performed for one-walled defects.
- Open flap debridement allows for thorough cleaning of the implant surface.

Implant Maintenance

- Patient motivation and oral hygiene are paramount for long-term success.
- Establish baseline data before starting the maintenance program.

Oral Hygiene for Implant Prosthesis

- Regular use of toothbrush and flossing tools is essential.
- Super floss is recommended for cleaning hard-to reach areas.

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PERI IMPLANTS AND PERI MUCOSITIS AND IMPLANT MAINTENANCE

Question 1

What is peri-implant mucositis?

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Answer 1

Peri-implant mucositis is defined as a reversible inflammatory reaction in the soft tissues surrounding an implant without bone loss.

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Question 2

What is the major cause of late implant failure?

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Answer 2

The major cause of late implant failure is peri-implant diseases, particularly peri-implantitis.

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Question 3

What factors increase the likelihood of developing peri-implant disease?

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Answer 3

Factors that increase the likelihood of developing peri-implant disease include lack of professional maintenance, smoking, history of periodontitis, poor oral hygiene, and difficulties in cleaning the implant.

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Question 4

How can peri-implant mucositis be managed?

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Answer 4

Peri-implant mucositis can be managed by assessing plaque presence, bleeding on probing, and pocket depth, and by reinforcing proper oral hygiene measures. Cleaning the implant using soft instruments is also recommended.

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Question 5

What is the clinical significance of probing depth in diagnosing peri-implantitis?

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Answer 5

Probing depths of 6mm or more, alongside profuse bleeding and suppuration, indicate peri-implantitis, and differentiation from peri-implant mucositis is crucial for diagnosis.

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Question 6

What treatment is indicated for peri-implantitis when probing depths are greater than 5mm?

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Answer 6

When probing depths are greater than 5mm and there's significant bone loss, surgical intervention is required to improve the condition of the soft and hard tissues around the implant.

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Question 7

What type of cleaning instruments are recommended for professional cleaning of implant surfaces?

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Answer 7

Recommended cleaning instruments for implant surfaces include titanium, carbon fiber, or plastic reinforced with graphite curettes or scalers, as they will not damage the titanium surfaces.

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Question 8

What is the role of oral hygiene in the maintenance of dental implants?

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Answer 8

Good oral hygiene is critical for maintaining dental implants, involving the use of toothbrushes, floss, and specially designed tools like super floss or tufted brushes to reduce plaque biofilm.

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Question 9

What should be recorded during the initial maintenance program for implants?

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Answer 9

Baseline data such as probing pocket depth, mucosal margin position, and radiographic crestal bone level should be established and recorded in the maintenance program for implants.

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Question 10

Why is it important to detect peri-implant diseases early?

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Answer 10

Early detection of peri-implant diseases is vital because it allows clinicians to modify oral hygiene practices and manage the disease at an initial stage, potentially preventing further complications.

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PROSTHODONTICS

DENTURE TROUBLESHOOTING

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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MIND MAP

DENTURE TROUBLESHOOTING

Clinical Factors

- Many patients face challenges adapting to new dentures
- Issues may arise from unaddressed problems at insertion

Patient Adaptation Factors

- Listening to patients is essential for identifying issues
- Individual adaptation experiences greatly vary

Discomfort Associated with Dentures

- Temporary discomfort is normal post-insertion
- Prolonged discomfort needs to be managed carefully

Occlusal Surface Discomfort

- Pain due to occlusal imbalance affects eating
- Problems arise from misalignment of denture teeth

Systemic Conditions Related to Denture Discomfort

- Discomfort can be exacerbated by systemic health issues
- TMJ dysfunction may cause 'clicking' and discomfort

Adverse Intraoral Anatomical Factors

- Atrophic mucosa can cause various discomforts
- Poor denture stability is a common clinical factor

Technical Factors

- Master cast inaccuracies affect denture fit
- Failure to preserve the peripheral roll leads to instability

Common Complete Denture Problems

- Discomfort associated with new dentures
- Looseness due to lack of proper fit

Causes of Discomfort

- Impression surface issues can lead to pain
- Painful localized areas result from improper finishing

Painful Areas and Their Management

- A Pain on pressure points must be diagnosed and treated
- Pain during insertion often relates to inflamed mucosa

Allergies and Other Considerations

- Rare allergic reactions to denture materials may occur
- Stomatitis linked to ill-fitting dentures should be monitored

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LOOSENESS OF DENTURES

Retention and Stability

- Stability involves a balance of retaining and displacing forces.
- Displacing forces exceeding retaining forces lead to looseness.

Air Gaps and Poor Fit

- Air beneath the impression surface due to poor fit.
- Xerostomia causing reduced denture adhesion.

Looseness Due to Increased Displacing Forces

- Overextension in depth causing displacement upon mouth opening.
- Incorrect design leading to poor stability and appearance.

Occlusal Errors

- Uneven tooth contact causes instability and movement.
- ICP and RCP discrepancies lead to disruption in seal.

Treatment Options

- Dental adjustments range from reducing flanges to teeth repositioning.
- Laboratory rebasing may be necessary for structural corrections.

Common Complaints

- Patients report rocking or shifting of dentures.
- Issues involve upper dentures falling and lower dentures rising.

Causes of Looseness Due to Decreased Retention

- Lack of Peripheral Seal from border under-extension.
- Inelasticity of cheek tissues from aging or systemic conditions.

Neuromuscular Control and Forces

- Control from lips, tongue, and muscles is vital for stability.
- Inability to manage forces results in discomfort.

Poor Fit on Supporting Tissues

- Ineffective impression techniques resulting in loose dentures.
- Denture placement issues leading to improper adaptation.

Problems from Inability to Adapt

- Psychological and functional issues impact user experience.
- Common problems include gagging and speech difficulties.

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DENTURE TROUBLESHOOTING

Question 1

What are the common factors that contribute to problems with complete dentures?

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Answer 1

Factors causing denture problems can be grouped into adverse intraoral anatomical factors, clinical factors, technical factors, and patient adaptational factors.

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DENTURE TROUBLESHOOTING

Question 2

What should be the first step when addressing a denture-wearing problem?

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DENTURE TROUBLESHOOTING

Answer 2

The first step should be listening to the patient to understand how they describe their difficulties.

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Question 3

What common discomfort can patients experience with new dentures immediately after insertion?

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Answer 3

Many patients experience discomfort for a short period (up to a few days) after receiving new or replacement dentures.

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Question 4

What is one type of discomfort associated with the impression surface of the denture?

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Answer 4

Discomfort can occur due to discrete painful areas caused by sharp ridges of acrylic on the fitting surface due to lack of laboratory finishing.

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DENTURE TROUBLESHOOTING

Question 5

What is a common cause of denture looseness?

Answer 5

A common cause of denture looseness is a lack of peripheral seal due to border under-extension in depth or width.

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DENTURE TROUBLESHOOTING

Question 6

What can lead to discomfort due to occlusal imbalance when wearing dentures?

Answer 6

Pain on eating due to occlusal imbalance typically occurs from premature contacts between denture teeth or lack of harmony in occlusion.

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DENTURE TROUBLESHOOTING

Question 7

What factor contributes to diminished retention of a complete denture?

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Answer 7

Xerostomia, or reduced ability to form a suitable seal due to dry mouth, can cause insufficient adhesion between the denture base and the mucosa.

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DENTURE TROUBLESHOOTING

Question 8

What symptoms may arise due to a lack of adaptation to dentures?

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Answer 8

Symptoms can be functionally related (like difficulty in eating or speaking) or psychologically related, manifesting as discomfort or anxiety.

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DENTURE TROUBLESHOOTING

Question 9

What correction can be made for immediate gagging after denture insertion?

Answer 9

Immediate gagging can be corrected by reducing the posterior dam area or lowering the thickness of the lower lingual flange.

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DENTURE TROUBLESHOOTING

Question 10

What adjustments can solve the issue of a whistle sound on the "S" sound during speech with dentures?

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Answer 10

The issue can be corrected by either repositioning the bicuspids more buccally or grinding out more space for the tongue if there is not enough space in the bicuspid area.

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PROSTHODONTICS

RPD FAILURES, CHINNINGS AND REPAIRS

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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MIND MAP

FIXED PARTIAL DENTURE FAILURES: CLASSIFICATION AND REPAIR

Classification of Failures

- Il Fixed prosthodontic failures are categorized into six classes (Class I to Class VI)
- based on severity.
- The classification helps in determining repair or replacement options.

Class II Failures

- Restoration is acceptable, but supporting tooth structure requires repair or reconstruction.
- Example: Loss of supporting tooth structure due to caries or fracture.

Class IV Failures

- Restoration and supporting tooth structure need replacement due to deficiency.
- Tooth structure requires reinforcement before making a new restoration.

Class VI Failures

- The most severe failure where a conventional fixed replacement is not possible.
- Occurs due to supporting tooth failure without additional support.

Factors Leading to Ceramic Failures

- Prevalence of ceramic fracture is 5-10% over a decade of use.
- A Frequent issues involve cracks within the ceramic due to mechanical loading.

Overview of Fixed Partial Denture Failures

- Fixed prosthodontic failures can be complex and frustrating.
- Primary concerns are whether the issue is easily resolved or requires extensive rehabilitation.

Class I Failures

- Class I failures are correctable via occlusal adjustments or composite resin repairs.
- Example: Decementation of a crown due to loss of cement bond, not related to design flaws.

Class III Failures

- Replacement of restoration is required, but the supporting structure remains intact
- Includes restorations with defective margins or technical failures.

Class V Failures

- Support structures can no longer adequately support the existing restoration.
- Damaged teeth might require extraction, but restoration remains a viable options.

Causes of Fixed Partial Prosthesis Failures

- Failures are often multifactorial, primarily related to mechanical stresses.
- Repeated stress and strains lead to fractures in ceramic-infused crowns and bridges.

Importance of Understanding Failures.

- Recognizing the classification aids in appropriate treatment planning.
- Addressing the specific type of failure ensures more effective solutions and repai

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MIND MAP

FACTORS AFFECTING FAILURE OF METAL-CERAMIC RESTORATIONS

Environmental Influences

- Material weakening due to exposure to moisture
- Structural integrity affected by changes in oral cavity environments

Structural Weakness

- Microcracks, voids, and inclusions in ceramics leading to weakness.
- Incompatibility between thermal coefficients of ceramic and metal contributing to failure.

Occlusion and Support

- Poor preparation design leading to improper occlusion and undue stresses.
- Insufficient support for the restoration influencing failure rates.

Repair Procedures for Fixed Prosthesis

- Rising popularity of all-ceramic restorations due to aesthetics and high strength
- Repairs indicated for fractured restorations if replacement isn't feasible.

Framework Design and Strength

- Importance of zirconia framework design in enhancing restoration strength
- Uniform thickness optimization of zirconia frameworks for better performance

Advanced Surface Conditioning

- Techniques such as sandblasting and etching for optimal bonding before repairs
- Use of tribochemical silica coating followed by silanization to improve bond strength

Material Properties

- Differences in modulus and thermal expansion between metal and ceramic materials.
- Stress development at the interface due to mismatched properties

Cyclic Stresses

- Cyclic stresses from chewing and mastication causing crack initiation
- A Stress concentration at sharp notches or flaws in materials.

Restoration Preparation Errors

- Issues like uneven firing or inadequate thickness affecting ceramic integrity
- Voids in cement layers or improper designs reducing longevity

Planning and Skill

- Misjudgment in treatment planning and restoration placement as a failure factor.
- Lack of clinical skill in avoiding stress concentration areas contributing to failur.

Intraoral Repair Options

- Intraoral repair to prevent complete restoration replacement and employ particulate filler composites
- Use of fiber-reinforced composites to enhance mechanical properties while main training aesthetics

Fracture Repair Techniques

- Direct and indirect repair methods for fractured restorations
- Application of silane coupling agents to enhance bonding for direct repairs.

Map Your Way to ADC Success!

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RPD FAILURES, CHINNINGS AND REPAIRS

Question 1

What are the primary types of failures in fixed prosthodontics?

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Answer 1

Fixed prosthodontic failures can be classified into six categories based on severity, ranging from Class I to Class VI.

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Question 2

What is Class I FPD Failure?

Answer 2

Class I failures are correctable through occlusal adjustment or composite resin repairs without needing to replace the restoration, such as decementation of a crown or FPD due to loss of cement bond.

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RPD FAILURES, CHINNINGS AND REPAIRS

Question 3

What defines a Class II FPD Failure?

Answer 3

In Class II failure, while the restoration itself is acceptable, the supporting tooth structure or foundation requires repair or reconstruction. Examples include foundation failures or supporting tooth structure loss due to caries or fracture.

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RPD FAILURES, CHINNINGS AND REPAIRS

Question 4

What is the requirement for a Class III FPD failure?

Answer 4

For Class III failure, replacement of the restoration is required, but the supporting tooth structure remains intact and can provide acceptable support for the new restoration.

Question 5

What happens in a Class IV FPD failure situation?

Answer 5

In Class IV failures, the restoration requires replacement, and the supporting tooth structure or foundation is deficient, necessitating reinforcement or reconstruction before a new restoration can be made.

Question 6

What characterizes Class V FPD failure?

Answer 6

In a Class V failure, the support structures can no longer provide adequate support due to extensive fractures, carious destruction, or periodontal problems, which may even require tooth extraction.

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RPD FAILURES, CHINNINGS AND REPAIRS

Question 7

What is the most severe type of FPD failure?

Answer 7

Class VI failure is the most severe, where a conventional fixed replacement is no longer possible due to supporting tooth failure and a lack of additional support for a redesigned restoration.

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Question 8

What are some common causes of fixed partial prosthesis failures?

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Answer 8

Common causes include multifactorial issues such as repeated stress and strains from chewing, cracks within the ceramic due to environmental loads, and differences in thermal expansion between metal and ceramic materials.

Question 9

What are the common methods used for repairing fixed prostheses?

Answer 9

Common repair methods include intraoral repairs using composites and indirect repairs using porcelain applied as a laboratory procedure, often employing mechanical roughening and silane coupling agents to enhance bonding.

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RPD FAILURES, CHINNINGS AND REPAIRS

Question 10

What is a key consideration when repairing zirconia bridges?

Answer 10

When repairing zirconia bridges, a cavity is prepared, and techniques such as etching, sandblasting, and silanizing are used, followed by applying dual-adhesive resin cement and glass-fibre-reinforced composite for support.

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PROSTHODONTICS

IMPRESSION, TECHNIQUES AND MATERIALS

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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MIND MAP

IMPRESSION TECHNIQUES AND MATERIALS

What is an Impression?

- An impression is a negative likeness of the teeth and surrounding structures.
- It is used to create a positive reproduction or cast for dental applications.

Impression Materials

- Impression material refers to substances used for creating impressions.
- There are two main classifications: non-elastic and elastic materials.

Types of Hydrocolloids

- Agar, known for its accuracy but requires special trays.
- Alginate, used as a primary impression material and prone to distortion.

Impression Techniques Overview

- Impression techniques vary based on the objectives and conditions of the impression taking.

Mucocompressive Impression Technique

- Applies pressure on tissues during the impression to simulate functional forces.
- Useful for fabricating complete dentures.

Single Stage (Double Mix) Impression Technique

- Involves one session capturing anatomy with heavy and light viscosity materials simultaneously.
- Both materials polymerize at the same time.

Complete Denture Impression Techniques

Uses various techniques for resorbed ridges that may impact retention and stability.

- **Conventional Technique**: Involves using zinc oxide eugenol wash impressions after molding with green stick compound.
- **Dynamic Impression Techniques**: Multiple techniques that adapt to the movement of the jaw to improve retention
- **All Green Technique**: Utilizes green stick tracing compound to make accurate impressions.
- **Closed Mouth Functional Impression Technique**: Captures functional movements of the mouth during the impression process.
- **Cocktail Impression Technique**: Combines various materials for flat mandibular ridges.
- **Elastomeric Impression Technique**: Uses elastomeric materials for accurate secondary impressions.
- **Modified Fluid Wax Impression Technique**: Molds soft wax to capture the contour of the alveolar ridge for accurate impressions.

Classification of Impression Materials

1. ✗
   i. Impression compound
   ii. Impression plaster
   iii. Zinc-oxide eugenol paste (irreversible, non-elastic)
2. ✓
   i. Hydrocolloids (reversible and irreversible)
   ii. Elastomers (made through a chemical reaction)

Types of Elastomers

- Includes Polysulfide, Condensation silicone, Polyether, and Addition silicone.
- Comes in different viscosities: heavy, medium, and light-bodied.

Mucostatic Impression Technique

- Records soft tissues with minimal pressure and in a relaxed state.
- Uses specialized trays and low-density materials.

Selective Pressure Technique

- Applies pressure only to specific areas to achieve intended support and stability.
- Balances tissue preservation with mechanical retention.

Two-Stage (Single Mix) Impression Technique

- Involves two separate impression-taking sessions with different viscosities.
- First stage focuses on primary impressions, and the second creates a wash impression.

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MIND MAP

VARIOUS IMPRESSION TECHNIQUES FOR FIXED PARTIAL DENTURES

Custom Tray Fabrication

- Custom trays offer even material thickness and improved accuracy.
- They reduce waste compared to stock trays.

Two-Step Putty Wash Technique

- Involves using a cellophane sheet as a spacer for creating custom trays.
- Light body material is applied around the prepared tooth after tray removal.

Simultaneous OR Squash Impression Technique

- Requires concurrent manipulation of putty and light body elastomeric materials
- No spacer is used, rendering this method less acceptable.

Matrix Impression Systems

- These systems involve heavy body materials to ensure sulcus displacement and margin recording.
- Vacuum-adapted splints are employed to form accurate matrices.

Digital Impression Technique

- Offers a precise, fast, and comfortable way to capture dental records.
- Utilizes intraoral scanners to create a virtual 3D model without traditional materials.

Overview of Impression Techniques

- Various techniques utilize different materials for precise recording of finish lines.
- Studies indicate better outcomes with two-step putty wash over one-step techniques.

Accuracy of Impression Techniques

- Accuracy is influenced more by materials than by the technique used.
- Digital impressions show superior marginal accuracy compared to traditional methods.

Alternative Putty/Wash Technique

- Features intraoral fabrication of a custom tray using a wax spacer.
- Reduces polymerization shrinkage with recommended polyvinyl siloxane materials.

Relieved Putty Impression Technique

- Close-fitting stock trays are utilized, where putty is relieved to allow for light body material.
- A wash impression is taken using low-viscosity material.

Hydrocolloid Laminate Technique

- Critical areas are recorded using reversible hydrocolloid materials.
- Facilitates more detailed impressions in intricate spaces.

Drawbacks of Digital Impressions

- High costs and steep learning curves are significant downsides.
- Errors in the process can lead to poor prosthesis fit, despite eliminating several traditional steps.

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VARIOUS IMPRESSION TECHNIQUES FOR IMPLANT PROSTHESIS

Impression Tray Types

- Stock trays vs. Custom-made trays.
- Custom trays are more rigid, allowing optimal impression material thickness.

Importance of Primary Impressions

- Primary impressions are essential for constructing custom trays.
- Clinicians must select impression materials for proper spacers.

Impression Coping Overview

- Types: closed tray copings remain in the mouth; open tray copings are in situ during impression.
- Custom copings may be modified for specific clinical situations.

Comparison: Closed Tray vs. Open Tray

- Closed tray is simpler but may lead to inaccuracies.
- Open tray provides improved accuracy with multiple implants.

Post-Impression Laboratory Steps

- Thorough inspection of the impression for accuracy.
- Laboratory prescriptions must include detailed information about the case.
- Silicone may be used to mimic gingival tissue for accurate model creation.

Fundamentals of Implant Impressions

- Familiarity with components is crucial for effective procedures.
- Each implant system has specific impression components tailored to its design.

Open vs. Closed Tray Classification

- Open tray provides direct access to implant fixture head.
- Closed tray is used for initial impressions at the fixture or abutment level.

Recommended Impression Materials

- Quadrafunctional Vinyl polysiloxanes (e.g., Aquasil Ultra).
- Addition Cured Silicones (e.g., Extrude) and Polyethers.

Techniques for Implant Level Impressions

- Closed tray and open tray techniques are the two primary methods.
- Closed Tray Technique
  - Steps include exposing the fixture head and fitting the impression coping.
  - A combination of light and heavy bodied silicone is typically used.
- Open Tray Technique
  - Involves preliminary alginate impressions and custom tray fabrication.
  - Impression copings should emerge level with the window for easy removal

Abutment Level Impression Techniques

- Routine crown and bridge methods may be employed for aesthetic corrections.
- Care must be taken not to damage the epithelial attachment during procedures.

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IMPRESSION, TECHNIQUES AND MATERIALS

Question 1

What is an impression in dentistry?

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IMPRESSION, TECHNIQUES AND MATERIALS

Answer 1

An impression is an imprint or negative likeness of the mouth, used to create a positive reproduction or cast of the teeth and surrounding structures.

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Question 2

What are impression materials?

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Answer 2

Impression materials are substances or combinations of substances used for making an impression, which is a negative reproduction.

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Question 3

What are the two main classifications of impression materials?

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Answer 3

The two main classifications are non-elastic impression materials and elastic impression materials.

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IMPRESSION, TECHNIQUES AND MATERIALS

Question 4

What is the mucostatic impression technique?

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Answer 4

The mucostatic impression technique aims to record the oral soft tissues in their resting state with minimal pressure, often used with low-density materials in relaxed conditions.

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Question 5

What is the purpose of the two-stage impression technique?

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Answer 5

The two-stage impression technique involves taking multiple impressions with different viscosities of the same material, often used for complex cases to achieve greater accuracy.

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Question 6

What materials are commonly used for irreversible hydrocolloid impressions?

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Answer 6

Common materials used for irreversible hydrocolloid impressions include alginate, which is primarily used for primary impressions.

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IMPRESSION, TECHNIQUES AND MATERIALS

Question 7

What is the difference between closed tray and open tray impression techniques?

Answer 7

The closed tray technique involves taking an impression with the impression coping retained in the mouth, while the open tray technique allows for direct access to the implant fixture head.

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Question 8

What is the dynamic impression technique?

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Answer 8

The dynamic impression technique is used for extremely resorbed ridges, capturing the active muscle movements to ensure an accurate representation of the denture fit.

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Question 9

What are the recommended impression materials in implant prosthodontics?

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Answer 9

Recommended materials include Quadrafunctional Vinyl Polysiloxanes, Addition Cured Silicones, and Polyethers.

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Question 10

How do digital impression techniques improve the impression-making process?

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Answer 10

Digital impression techniques allow for more precise and faster capturing of records, eliminating many steps involved in conventional methods, although they come with higher costs and learning curves.

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PROSTHODONTICS

IMPLANT COMPLICATIONS AND RISK FACTORS

MIND MAP & CUE CARDS

BY DR. JIGYASA SHARMA

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MIND MAP

IMPLANT COMPLICATIONS AND RISK FACTORS

Importance of Implant Abutment

- The abutment connects the implant to the prosthesis.
- Proper abutment selection ensures aesthetic and functional harmony.

Implant Tier Systems

- Two-tier system: Combines implant and abutment or has them as separate components.
- Three-tier system: Features implant, abutment, and crown as distinct parts.

Classification Based on Prosthesis Retention

- Screw retained: More complex but easier to retrieve, ideal for cases with limited space.
- Cement retained: Simpler to fabricate and ofers better aesthetics but can have excess cement issues.

Advantages and Disadvantages of Cement Retained Restorations.

- Pros: Predictable aesthetics and precise occlusion.
- Cons: Risk of excess cement and more complex removal.

Material Considerations for Abutments

- Biocompatibility is crucial; titanium is preferred but may cause aesthetic issues.
- Alternative materials include zirconia and alumina for aesthetic demands.

Overview of Dental Implants

- Dental implants are a popular solution for missing teeth.
- Their success relies on various factors, including case selection and maintenance

Parts of an Implant

- Three main components: Prosthesis connection, implant connection, and transgingival segment.
- The superstructure serves as a framework for removable or fixed prosthesis.

Types of Implant Abutments

- Anti-rotational features help maintain alignment during use.
- Configurations include hexagonal, octagonal, and spline connections.

Advantages and Disadvantages of Screw Retained Restorations

- Pros: Easy retrieval, ideal for provisional restorations.
- Cons: Potential for screw loosening and occlusal precision challenges.

Types of Abutments for Cement Retained Restorations

- One-piece abutments: Ideal for provisional restorations but complicated positioning.
- Two-piece abutments: Easier to manage and more stable.

Evolution of Prefabricated Abutments

- Early designs had limitations; advancements have improved aesthetics significantly.
- The UCLA abutment allows for custom modifications, enhancing functionality and appearance.

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IMPLANT FAILURE

Definition of Implant Failure

- Implant failure is when implants cannot fulfill their purpose.
- Causes can be mechanical or biologic.

Types of Implant Failure

- **Ailing implants:** Radiographic bone loss without mobility.
- **Failing implants:** Progressive bone loss with inflammation but can be managed.
- **Failed implants:** Clinical mobility and non-functional state.

Risk Factors for Dental Implant Failure

- Low bone density (Type IV) primarily in maxillary region is a major factor.
- Patients with cardiac issues need careful assessment before surgery.

Conditions Impacting Implant Surgery

- Autoimmune diseases and steroid therapy may lead to complications.
- Healing times may need to be extended for certain patients.

Effects of Radiotherapy

- Evidence suggests no failure at doses < 45 Gray; increased risk at > 50 Gray.
- Waiting period post-radiation ranges from 3 to 12 months.

Age and Implant Therapy

- Old age is not a barrier to implant therapy.
- The correlation of aging with implant failure requires careful monitoring.

Bone Grafting Techniques

- Autogenous grafts yield better success than block grafts.
- A waiting period of 6-9 months is necessary for stability before loading implants

Prosthetic Considerations

- Extended cantilever implants require cautious planning.
- Rapid loading can lead to significant prosthetic failures.

Warning Signs of Implant Failure

- A Signs may include bone loss and inflammation.
- Linked to host factors, surgical placement, and restorative issues.

Patient Considerations

- Cardiac patients within six months of infarction should avoid implants.
- Angina history requires emergency medications available during surgery.
- Diabetes does not contraindicate implant treatments but needs control.

Bisphosphonates and Osteonecrosis

- Long-term bisphosphonate use may risk osteonecrosis of the jaw (ONJ).
- Continuous monitoring is crucial due to heightened risk in these cases.

Influence of Smoking on Implant Success

- Smokers face higher implant failure rates; smoking cessation is recommended.
- Maxillary implants are particularly affected by smoking.

Surgical Placement Complications

- Alveolar resorption can be managed through grafting techniques.
- Proper angulation of implants can enhance success rates.

Temperature Control During Surgery

- Overheating bone can result in implant failure; maintain temperature under 47°C
- Atraumatic techniques during drilling are essential for cell preservation.

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IMPLANT COMPLICATIONS AND RISK FACTORS

Question 1

What are the key factors that contribute to the success of dental implant restoration?

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Answer 1

Successful implant restoration depends on various factors including case selection, implant placement, osseointegration, abutment selection, and maintenance.

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Question 2

What are the three parts of an implant abutment?

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Answer 2

The abutment consists of the prosthesis connection segment, the implant connection segment, and the transgingival segment.

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Question 3

How can implants be classified based on the number of components in their connection system?

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Answer 3

Implants can be classified as either a two-tier system (comprising two components or two separate components for abutment and crown) or a three-tier system (where implant, abutment, and crown are individual components).

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Question 4

What are the types of retention options for implant restorations?

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Answer 4

Implant restorations can be screw retained or cement retained. Screw retained restorations involve direct connection without an intermediate abutment, while cement retained restorations require an abutment and cement for securing the prosthesis.

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Question 5

What is the primary risk factor associated with dental implant failure?

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Answer 5

The primary risk factor for dental implant failure is low bone density, particularly Type IV bone quality, which is commonly found in the maxillary premolar region.

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IMPLANT COMPLICATIONS AND RISK FACTORS

Question 6

How does smoking affect dental implant outcomes?

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Answer 6

Smoking is a recognized risk factor for wound healing, significantly increasing the failure rate of implants, especially in the maxilla. However, cessation at least one week before surgery can mitigate risks.

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Question 7

What complications can arise from surgical placement of implants?

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Answer 7

Complications from surgical placement can include alveolar process resorption, which can be managed by grafting the area, angling the implant, or using an angulated abutment.

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Question 8

What different retention strategies exist for cement retained restorations?

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Answer 8

Cement retained restorations can utilize either provisional or definitive cementation, with provisional being easier to retrieve but having a higher risk of microleakage compared to definitive cementation.

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Question 9

What warning signs indicate the potential failure of an implant?

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Answer 9

The warning signs of implant failure include progressive bone loss, signs of inflammation, and clinical mobility of the implant.

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Question 10

Which materials are currently used for customized implant abutments, and what are their advantages?

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Answer 10

Common materials for customized implant abutments include titanium, zirconia, alumina, Peek, and gold alloys. Titanium is ideal for mechanical properties, while zirconia is preferred for aesthetics in anterior regions due to less visibility of a greyish hue.