PEDODONTICS AND PREVENTIVE DENTISTRY

COURSE CONTENT


3. BEHAVIOUR MANAGEMENT: Non-pharmacological & Pharmacological methods.

4. CHILD ABUSE AND NEGLECT INCLUDING DENTAL NEGLECT

5. CONSCIOUS SEDATION, DEEP SEDATION & GENERAL ANESTHESIA IN PEDIATRIC DENTISTRY: (Including other drugs, synergetic & Antagonistic actions of various drugs used in children)


7. DENTAL PLAQUE: Definition, Initiation, Pathogenesis, Biochemistry, Morphology & Metabolism.

8. MICROBIOLOGY & IMMUNOLOGY AS RELATED TO ORAL DISEASES IN CHILDREN: Basic concepts, immune system in human body, autoimmune diseases, histopathology, pathogenesis, immunology of dental caries, periodontal diseases, tumors, oral mucosal lesions etc.

9. GINGIVAL & PERIODONTAL DISEASES IN CHILDREN:
   - Normal Gingiva & Periodontium in Children.
   - Gingival & Periodontal diseases – Etiology, Pathogenesis, Prevention & Management.

10. PEDIATRIC OPERATIVE DENTISTRY
    - Principles of pediatric operative dentistry along with modifications for different materials used, past, current & latest, including tooth colored materials.
    - Modifications required for cavity preparation in primary and young permanent teeth.
    - Various isolation techniques.
    - Restorations of decayed primary, young permanent and permanent teeth in children using various restorative materials like Glass ionomer, composites, silver amalgam & any latest materials (gallium).
    - Stainless steel, polycarbonate & resin crowns and veneers. Fiber post systems

11. PEDIATRIC ENDODONTICS
    - Primary dentition: Diagnosis of pulpal diseases & their management – pulp capping, pulpotomy, pulpectomy (Materials & Methods), controversies & recent concepts.
• Young permanent teeth & permanent teeth: Pulp capping, Pulpotomy, Apexogenesis, Apexification. Concepts, Techniques and materials used for different procedures.
• Recent advances in Diagnosis for Pediatric Endodontics.

12. TRAUMATIC INJURIES IN CHILDREN
• Classifications & importance.
• Sequelae of trauma to teeth & reaction of teeth to trauma.
• Management of traumatized teeth with latest concepts.
• Management of Jaw fractures in Children.

13. INTERCEPTIVE ORTHODONTICS
• Concepts of occlusion and esthetics: Structure and function of all anatomic components of occlusion, mechanics of articulations, recording of masticatory function, diagnosis of occlusal dysfunction, relationship of TMJ anatomy & pathology and related neuromuscular physiology.
• A comprehensive review of the local and systemic factors in the causation of malocclusion.
• Recognition and management of normal and abnormal developmental occlusions in primary, mixed and permanent dentitions in children (Occlusal Guidance).
• Myofunctional appliances: Basic principles, contemporary appliances – Design & fabrication.
• Removable appliances: Basic principles, contemporary appliances – Design & fabrication.
• Case selection & diagnosis in interceptive orthodontics (Cephalometrics, image processing, tracing, radiation hygiene, video imaging & advanced cephalometric techniques).
• Space management: Etiology, diagnosis of space problems, analysis, Biomechanics, serial extractions.

14. ORAL HABITS IN CHILDREN
• Definition, Etiology, classification.
• Clinical features of digit sucking, tongue thrusting, mouth breathing & various other secondary habits.
• Management of oral habits in children.

15. DENTAL CARE OF CHILDREN WITH SPECIAL NEEDS
Definition, Etiology, classification, behavioral, clinical features & management of children with:
• Physically handicapping condition.
• Mentally compromising condition.
• Medically compromising condition.
• Genetic disorders.
16. ORAL MANIFESTATIONS OF SYSTEMIC DISEASES IN CHILDREN AND THEIR MANAGEMENT

17. MANAGEMENT OF MINOR ORAL SURGICAL PROCEDURES IN CHILDREN

18. ORAL AND MAXILLOFACIAL RADIOLOGY AS RELATED TO PEDIATRIC DENTISTRY

19. CARIOLOGY
   - Historical background.
   - Definition, Etiology & Pathogenesis.
   - Caries pattern in primary, young permanent and permanent teeth in children.
   - Rampant caries, early childhood caries and extensive caries: Definition, etiology, pathogenesis, clinical features, complications & Management.
   - Role of diet and nutrition in dental caries.
   - Dietary modifications & Diet counseling.
   - Subjective and objective methods of caries detection with emphasis on Caries activity tests, caries prediction, caries susceptibility & their clinical applications.

20. PEDIATRIC ORAL MEDICINE & CLINICAL PATHOLOGY: Recognition & management of developmental dental anomalies, teething disorders, stomatological conditions, mucosal lesions, viral infections etc.

21. CONGENITAL ABNORMALITIES IN CHILDREN: Definition, classification, clinical features & Management.

22. DENTAL EMERGENCIES IN CHILDREN & THEIR MANAGEMENT

23. DENTAL MATERIALS USED IN PEDIATRIC DENTISTRY

24. PREVENTIVE DENTISTRY:
   - Definitions, Principles & Scope, Types of prevention.
   - Different preventive measures used in pediatric dentistry including fissure sealants, preventive resin restorations and caries vaccine.

25. DENTAL HEALTH EDUCATION & SCHOOL DENTAL HEALTH PROGRAMMES: Dental health concepts, effects of civilization and environment, dental health delivery system, public health measures related to children along with principles of children’s preventive dentistry.

26. FLUORIDES:
   - Historical background
   - Systemic & Topical fluorides
   - Mechanism of action
   - Toxicity & management
   - Defluoridation techniques

27. CASE HISTORY RECORDING: Outline of principles of examination, diagnosis & Treatment planning.


29. COMPREHENSIVE INFANT ORAL HEALTH CARE

30. PRINCIPLES OF BIO-STATISTICS AND RESEARCH METHODOLOGY AND UNDERSTANDING OF COMPUTERS AND PHOTOGRAPHY

31. SETTING UP OF PEDODONTICS & PREVENTIVE DENTISTRY CLINIC
FIRST YEAR M.D.S.

Preclinical work: *Duration – first 6 months of First year MDS; One on each Exercise*
1. Carving of all primary teeth.
2. Basic wire bending exercises.
3. Fabrication of:-
   - Maxillary bite plate/ Hawley’s appliance
   - Maxillary expansion screw appliance
   - Canine retractor appliance
   - All habit breaking appliances
     ▪ Removable type
     ▪ Fixed type
     ▪ Partially fixed & removable
   - Two Myofunctional appliances
   - Making of inclined plane appliance
     ▪ Acrylic inclined plane
     ▪ Stainless steel band inclined plane
   - Feeding appliance
4. Basic Soldering Exercise – Making of a lamp post of stainless steel wire pieces of different gauges soldered on either side of heavy gauge main post.
5. Fabrication of space maintainers:
   - Removable type-
     ▪ Unilateral Non-Functional space maintainer
     ▪ Bilateral Non-Functional space maintainer
     ▪ Unilateral functional space maintainer
       • Bilateral functional space maintainer
   - Space Regainers -
     ▪ Hawley’s appliances with Helical space regainer
     ▪ Removable appliance with Slingshot space regainer
     ▪ Removable appliance with Dumbell space regainer
   - Fixed Space maintainers
     ▪ Band & long loop space maintainer
     ▪ Band & short loop space maintainer
     ▪ Mayne’s space maintainer
     ▪ Transpalatal arch space maintainer
     ▪ Nance Palatal holding arch
     ▪ Nance Palatal holding arch with canine stoppers
     ▪ Gerber space regainer
     ▪ Distal shoe appliance
       a. Active space maintainers.
b. For guiding the eruption of first permanent molar.
c. Arch holding device.
d. Functional space maintainer.

6. Basic spot welding exercises

7. Collection of Extracted Primary and Permanent teeth.
   - Sectioning of the teeth at various levels and planes.
   - Drawing of sections and shapes of pulp.
   - Phantom head exercises: Performing ideal cavity preparation for various restorative materials for both primary and permanent teeth.
   - Performing Pulpotomy, Root canal treatment and Apexification procedure.
   - Fabrication of various temporary and permanent restorations on fractured anterior teeth
   - Preparation of teeth for stainless steel crowns.

8. Performing behavioral rating and I.Q. tests for children

9. Computation of-
   - Caries index and performing various caries activity tests
   - Oral hygiene index
   - Periodontal index
   - Fluorosis index

10. Minor Oral surgical Exercises:
    - Fabrication of Splints
    - Types of wiring
    - Suturing

11. Assignments in Oral and Maxillofacial Radiology:
    - Taking of Periapical, Occlusal and Bite wing radiographs of children.
    - Developing and processing of films thus obtained.
    - Tracing of soft tissue dental and skeletal landmarks as observed on cephalometric radiographs and drawing of various planes and angles.

12. Mixed dentition cast analysis

13. Library assignment

14. Synopsis
Exercises in Detail:

1. Drawing album and records
   - Tables showing chronology of teeth.
   - Tables showing tooth dimensions.
   - Pulp morphology.
   - Development of dentition at different ages.
   - Development of occlusion at different ages.
   - Diagrams showing cephalometric points, planes and angles.
   - Table showing differences between primary, young permanent and permanent teeth.
   - Table showing modification of cavity preparation for primary teeth.
   - Mixed dentition analysis, principles and measurements.
   - Principles of soldering and welding.
   - Principles and methods of rubber dam.

2. Carve all primary teeth in wax (Ten only) One Upper Quadrant (5) and One Lower Quadrant (5)

3. Complete set up of dentition at age of 8 years.
   6EDC21  12CDE6
   6EDC21  12CDE6

4. Complete set up of dentition at the age 10 years.
   6E4C21  12C4E6
   6E4321  1234E6

5. Preparation of Special Trays with Upper and Lower Impressions of 3 years old child.


7. Cephalograms – Cephalograms learning and analysis of children with normal occlusion and morphology at 3,7,11 and 14 years.

8. Mixed dentition analysis – 1 case.

   - Straightening of wire (6"-19 gauge).
   - Square, triangle and circle formation (2").
   - Clasps - different types (3/4 clasp, Full clasp, Adam’s clasp, Arrowhead clasp, Modified arrowhead clasp, Ball clasp).
   - Labial bow - different types (short, long, high with apron spring).
   - Multiple loop exercises – different types of springs (Finger spring, single cantilever, double cantilever springs, canine retractors viz., U-loop, Helical, Palatal canine retractors and Robert’s retractor).
   - Soldering exercises – lamppost formation.
10. Appliances.
- Space maintainers - Removable and Fixed types
- Band with loop (long & short loop).
- Transpalatal and Nance palatal holding arches.
- Lingual arch with canine stoppers.
- Space maintainer for guiding eruption of first permanent molar.
- Space regainers for distalizing first permanent molar - Removable and Fixed Types
- Habit breaking appliance - Removable and Fixed Types
- Expansion plates with Coffin spring and Expansion screw.
- Hawley’s retention appliance.
- Hawley’s appliance with anterior bite plane.
- Posterior bite plane with single and double canti-lever springs.
- Upper inclined plane and lower inclined plane.
- Upper appliance with finger springs to correct median diastema.
- Upper canine retraction appliance with helical and U-loop springs.
- Activator and Frankl appliances

11. Conservative and Endodontic Exercises (on typodont / extracted teeth)
- Class –II Cavity in 64, 65 and 84, 85.
- Stainless Steel Crown on 74 and 85.
- Pulpotomy in 75.
- Pulpectomy in extracted teeth 51 or 61, 54 or 64, 55 or 65, 75 or 85.
- Class – I mesial and distal pit with palatal extension in 26.
- Class – I with buccal extension on 36 or 46.
- Jacket Crown on 12 or 22 and 31 or 41.
- Crown with acrylic facing on 11 or 21.
- Pin Restoration in 36 or 46
- RCT in Extracted teeth 16, 22, 23, 36 or 46.
- Post and Core crown on 11 or 21.

12. Performance of behavioral rating scales and I. Q. tests for children

13. Computation of -
- Caries index and performing various caries activities tests
- Oral hygiene index
- Periodontal index

14. Oral Radiology
- Taking of periapical, occlusal and bitewing radiographs in children
- Developing and processing of films
- Tracing of soft tissue dental and skeletal landmarks as observed on cephalometric radiographs
- Drawing of various planes and angles
15. Fixed Appliance technique
Training shall be imported in one basic technique i.e., Begg Technique or its derivative / Edge wise / Straight wire etc., with adequate exposure to other techniques.
- Band pinching
- Bracket positioning and placement
- Different stages in treatment appropriate to technique taught

**CLINICAL WORK REQUIREMENTS FROM 7 TO 36 MONTHS**
The following is the minimum requirement to be completed before the candidate can be considered eligible to appear in the final M.D.S Examinations:

<table>
<thead>
<tr>
<th>No.</th>
<th>Clinical Work</th>
<th>Total</th>
<th>7 To 12 Months</th>
<th>13 To 24 Months</th>
<th>25 To 36 Months</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Behavior Management of different age groups children with complete records.</td>
<td>17</td>
<td>2</td>
<td>10</td>
<td>5</td>
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<td>2.</td>
<td>Detailed Case evaluation with complete records, treatment planning and presentation of cases with chair side discussion</td>
<td>17</td>
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<tr>
<td>4.</td>
<td>Practical application of Preventive dentistry concepts in a class of 35 – 50 children in Dental Health Education &amp; Motivation</td>
<td>7</td>
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<td>5.</td>
<td>Pediatric Operative Dentistry and Endodontics with application of recent concepts, (a). Management of Dental Caries (I) Class I</td>
<td>50</td>
<td>30</td>
<td>10</td>
<td>10</td>
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<td></td>
<td>(II) Class II</td>
<td>100</td>
<td>40</td>
<td>50</td>
<td>10</td>
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<td>(III) Other Restorations</td>
<td>100</td>
<td>20</td>
<td>50</td>
<td>30</td>
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<td></td>
<td>(b). Management of traumatized anterior teeth</td>
<td>15</td>
<td>04</td>
<td>06</td>
<td>05</td>
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<td>(c) Aesthetic Restorations</td>
<td>25</td>
<td>05</td>
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<td>(d) Pediatric Endodontic Procedures* Primary teeth Pulpotomy / Pulpectomy • Permanent Molars • Permanent Incisor</td>
<td>150</td>
<td>30</td>
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<td>70</td>
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<td>Primary teeth Pulpotomy / Pulpectomy</td>
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<td>• Permanent Molars</td>
<td>15</td>
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<td>• Permanent Incisor</td>
<td>20</td>
<td>02</td>
<td>08</td>
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<td>6.</td>
<td>Stainless Steel Crowns</td>
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<td>7.</td>
<td>Other Crowns •</td>
<td>05</td>
<td>01</td>
<td>02</td>
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<td>8.</td>
<td>Fixed : Space Maintainers and Habit breaking appliances</td>
<td>30</td>
<td>08</td>
<td>12</td>
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<td>9.</td>
<td>Removable : Space Maintainers and Habit breaking appliances</td>
<td>20</td>
<td>05</td>
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10. Functional Appliances

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<td>11.</td>
<td>Preventive measures like fluoride applications/ Pit &amp; Fissure Sealants applications with complete follow-up and diet counseling</td>
<td>05</td>
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<td>12.</td>
<td>Special Assignments (i) School Dental Health Programmes (ii) Camps etc.,</td>
<td>20</td>
<td>08</td>
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</table>

(The figures given against Sl. No. 4 to 12 are the minimum number of recommended procedures to be performed)

13. Library usage
14. Laboratory Usage
15. Continuing Dental Health Programme