DEPARTMENT OF CONSERVATIVE DENTISTRY & ENDODONTICS

RESEARCH WORK :-

1. Dr. Sunil V.C


2. Dr. Sanjana Tyagi

2012 - Journal of Conservative Dentistry : The Reinforcement Effect of Polyethylene Fibre and Composite Impregnated Glass Fibre On Fracture Resistance of Endodontically Treated Teeth : An In-Vitro Study

2011 - Indian Journal of Dental Sciences : Comparative Evaluation of Sealing Ability of Two Resin Based Sealers : An In-Vitro Stereomicroscopic Study.

3. Dr. Anjali Bichpuriya

2017 - M.P.State Dental Journal : Talon’s Cusp : A Developmental Dental Anomaly


2016 - National Research Dentsicon : The Effects of File Size, Sodium Hypochlorite and Blood on The Accuracy of Propex II Apex Locator In Enlarged Root Canals: An In-Vitro Study.

2016 - M.P.State Dental Journal : Endodontic Microsurgery : Current Concepts And Outcome
2015 - M.P.State Dental Journal : Non-Surgical Endodontic Approach For Management of Periapical Lesion Using Calcium Hydroxide As Intracanal Medicament : Case Series


4. **Dr. Neetu Kharat**


5. **Dr. Divya Katare**


2015 - British Journal Of Medicine And Medical Research : Sports Dentistry And Mouthguards.


**ACHIEVEMENTS**

Our college is proud of our students who have topped the university examinations for consecutive years and have been rewarded for the same.
SYLLABUS

THE UNDERGRADUATES COURSE INCLUDES:

[ DENTAL MATERIALS ]

1. Dental Cements: Such as Silicate, Glass ionomer, Metal modified glass ionomer, Resin modified glass ionomer, Zinc oxide eugenol, Modified zinc oxide eugenol, Zinc phosphate, Zinc silico phosphate, Zinc poly carboxylate. Cavity liners and Cement bases, Varnishes, Calcium hydroxide etc.

2. Dental Amalgam

3. Restorative Resins

4. Direct Filling Gold

5. Dental Casting Alloys

6. Dental Ceramics

[ PRE-CLINICAL CONSERVATIVES ]

1. Introduction to Conservative Dentistry.

2. Definition, Aim & Scope of Conservative Dentistry & Endodontics

3. Nomenclature of dentition; Tooth Numbering systems

4. Restoration - Definition & Objectives


7. Dental caries – Aetiology, classification, caries terminology

8. Fundamentals in Tooth preparation

9. Definition, Stages and steps, Classification of Tooth preparations, Nomenclature, Concepts in tooth preparations for Silver Amalgam, Cast gold inlay, Composite resins and Glass Ionomer


11. Contact and contour of teeth – different methods of tooth separation

12. Matrices, Retainers, Wedges – methods of wedging


14. Chair side positions – patient and operator positions
15. Management of deep carious lesions

16. Access cavity and brief introduction of root canal instruments

[ CONSERVATIVE DENTISTRY ]

1. Nomenclature Of Dentition: Tooth numbering systems

2. Principles Of Cavity Preparation:
   Steps and nomenclature of cavity preparation, classification of cavities, nomenclature of floors
   And angles of cavities.

3. Dental Caries:
   Aetiology, classification, clinical features, morphological features, microscopic features, clinical
   diagnosis and sequel of dental caries.

4. Treatment Planning For Operative Dentistry:
   Detailed clinical examination, radiographic examination, tooth vitality tests, diagnosis and
   treatment planning, preparation of the case sheet.

5. Gnathological Concepts Of Restoration:
   Physiology of occlusion, normal occlusion, Ideal occlusion, mandibular movements and occlusal
   analysis. Occlusal rehabilitation and restoration.

6. Aramamentarium For Cavity Preparation:
   General classification of operative instruments, Hand cutting instruments design formula and
   sharpening of instruments. Rotary cutting instruments dental bur, mechanism of cutting,
   evaluation of hand piece and speed current concepts of rotary cutting procedures. Sterilisation
   and maintenance of instruments. Basic instrument tray set up.

7. Control of Operating Field:
   Light source sterilisation field of operation control of moisture, rubber dam in detail, cotton rolls
   and anti-sialogagues.

8. Amalgam Restoration:
   Indication contraindication, physical and mechanical properties, clinical behaviour. Cavity
   Failure of amalgam restoration.

9. Pulp Protection:
   Liners, varnishes and bases, Zinc phosphate, zinc polycarboxylate, zinc oxide eugenol and
   glass inomer cements.

10. Anterior Restorations:
    Selection of cases, selection of material, step wise procedures for using restorations, silicate
    (theory only) glass inomers, composites, including sandwich restorations and bevels of the
    same with a note on status of the dentine bonding agents.

11. Direct Filling Gold Restorations:
    Types of direct filling gold indications and limitations of cohesive gold. Annealing of gold foil
    cavity preparation and condensation of gold foils.

12. Preventive Measures In Restorative Practice:
Plaque Control, Pit and fissure sealants dietary measures restorative procedure and periodontal health. Contact and contour of teeth and restorations matrices tooth separation and wedges.

13. Temporisation or Interim Restoration.


16. Non-Carious Destruction’s Tooth Structures Diagnosis and Clinical Management

17. Hyper Sensitive Dentine And Its Management.

18. Cast Restorations
   Indications, contra indications, advantages and disadvantages and materials used for same
   Class II and Class I cavity preparation for inlays fabrication of wax pattern, spurring, inverting and casting procedures & casting defects.


20. Gingival Tissue Management For Cast Restoration And Impression Procedures


22. Differences between Amalgam And Inlay Cavity preparation with note on all the types of Bewels used for Cast Restoration.


24. Treatment Planning For Operative Dentistry, Detailed Clinical Examination, Radiographic Examination

25. Vitality Tests, Diagnosis And Treatment Planning And Preparation Of Case Sheet.

[ ENDODONTICS ]

1. Endodontics: introduction definition scope and future of endodontics

2. Clinical diagnostic methods

3. Emergency endodontic procedures


5. Periapical diseases: acute periapical abscess, acute periodontal abscess, phoeix abscess, chronic alveolar abscess, granuloma, cysts, condensing osteits, external resorption.

6. Vital pulp therapy: indirect and direct pulp capping, pulpotomy different types and medicaments used.
7. Apexogenisis and apexification or problems of open apex.

8. Rationale of endodontic treatment, case selection, indication and contraindications for root canal treatments.


11. Preparation of root canal space . Determination of working length, cleaning and shaping of root canals, irrigating solution chemical aids to instrumentation.

12. Disinfection of root canal space intracanal medicaments.


17. Post-endodontic restoration fabrication and components of post & core preparation.

18. Discoloured teeth and its management. Bleaching agents, vital and non vital bleaching methods.


20. Endodontic surgeries indication contraindications, pre operative preparation. Pre medication surgical instruments and techniques apicectomy, retrograde filling, post operative sequale terphination hemisection, radiscetomy techniques of tooth reimplantation (both intentional and accidental) endodontic implants.


22. Emergency endodontic procedures.

23. Lasers in conservative endodontics (introduction only) practice management
SYLLABUS FOR MDS

THE POST-GRADUATES COURSE INCLUDES:

COURSE CONTENTS:

APPLIED ANATOMY OF HEAD AND NECK:
• Development of face, paranasal sinuses and the associated structures and their anomalies, cranial and facial bones, TMJ anatomy and function, arterial and venous drainage of head and neck, muscles of face and neck including muscles of mastication and deglutition, brief consideration of structures and function of brain. Brief consideration of all cranial nerves and autonomic nervous system of head and neck. Salivary glands, Functional anatomy of mastication, deglutition and speech. Detailed anatomy of deciduous and permanent teeth, general consideration in physiology of permanent dentition, form, function, alignment, contact, occlusion.
• Internal anatomy of permanent teeth and its significance
• Applied histology – histology of skin, oral mucosa, connective tissue, bone cartilage, blood vessels, lymphatics, nerves, muscles, tongue.

DEVELOPMENT OF TEETH:
• Enamel – development and composition, physical characteristics, chemical properties, structure
• Age changes – clinical structure
• Dentin – development, physical and chemical properties, structure type of dentin, innervations, age and functional changes.
• Pulp – development, histological structures, innervations, functions, regressive changes, clinical considerations.
• Cementum – composition, cementogenesis, structure, function, clinical consideration.
• Periodontal ligament – development, structure, function and clinical consideration.
• Salivary glands – structure, function, clinical considerations.
• Eruption of teeth.

APPLIED PHYSIOLOGY:
• Mastication, deglutition, digestion and assimilation, fluid and electrolyte balance.
• Blood composition, volume, function, blood groups, haemostasis, coagulation, blood transfusion, circulation, heart, pulse, blood pressure, shock, respiration, control, anoxia, hypoxia, asphyxia, artificial respiration, and endocrinology – general principles of endocrine activity and disorders relating to pituitary, thyroid, parathyroid, adrenals including pregnancy and lactation.
• Physiology of saliva – composition, function, clinical significance.
• Clinical significance of vitamins, diet and nutrition – balanced diet.
• Physiology of pain, sympathetic and Para sympathetic nervous system, pain pathways, physiology of pulpal pain, Odontogenic and non-Odontogenic pain, pain disorders – typical and atypical, biochemistry such as osmotic pressure, electrolytic dissociation, oxidation, reduction etc. Carbohydrates, proteins, lipids and their metabolism, nucleoproteins, nucleic acid and their metabolism. Enzymes, vitamins and minerals, metabolism of inorganic elements, detoxification in the body, anti metabolites, chemistry of blood lymph and urine.

PATHOLOGY:
• Inflammation, repair, degeneration, necrosis and gangrene.
• Circulatory disturbances – ischemia, hyperemia, edema, thrombosis, embolism, infarction, allergy and hypersensitivity reaction.
• Neoplasms – classifications of tumors, characteristics of benign and malignant tumors, spread tumors.
• Blood dyscrasias
• Developmental disturbances of oral and Para oral structures, dental caries, regressive changes of teeth, pulp, periapical pathology, pulp reaction to dental caries and dental procedures.  
• Bacterial, viral, mycotic infections of the oral cavity.

MICROBIOLOGY:
• Pathways of pulpal infection, oral flora and microorganisms associated with endodontic diseases, pathogenesis, host defense, bacterial virulence factors, healing, theory of focal infections, microbes or relevance to dentistry – strepto, staphylococci, lactobacilli, cornyebacterium, actinomycetes, clostridium, neisseria, vibrio, bacterioids, fusobacteria, spirochetes, mycobacterium, virus and fungi.  
• Cross infection, infection control, infection control procedure, sterilization and disinfection.  
• Immunology – antigen antibody reaction, allergy, hypersensitivity and anaphylaxis, auto immunity, grafts, viral hepatitis, HIV infections and aids. Identification and isolation of microorganisms from infected root canals. Culture medium and culturing technique (Aerobic and anaerobic interpretation and antibiotic sensitivity test).

PHARMACOLOGY:
• Dosage and route of administration of drugs, actions and fate of drug in body, drug addiction, tolerance of hypersensitivity reactions.  
• Local anesthesia – agents and chemistry, pharmacological actions, fate and metabolism of anaesthetic, ideal properties, techniques and complications.  
• General anesthesia – pre-medications, neuro muscular blocking agents, induction agents, inhalation anesthesia, and agents used, assessment of anesthetic problems in medically compromised patients.  
• Anaesthetic emergencies  
• Antihistamines, corticosteroids, chemotherapeutic and antibiotics, drug resistance, haemostasis, and haemostatic agents, anticoagulants, sympathomimetic drugs, vitamins and minerals (A, B, C, D, E, K IRON), anti-sialogogue, immunosuppressants, drug interactions, antiseptics, disinfectants, anti viral agents, drugs acting on CNS.

BIOSTATISTICS:

RESEARCH METHODOLOGY:
• Essential features of a protocol for research in humans  
• Experimental and non-experimental study designs  
• Ethical considerations of research

APPLIED DENTAL MATERIALS:
• Physical and mechanical properties of dental materials, biocompatibility.  
• Impression materials, detailed study of various restorative materials, restorative resin and recent advances in composite resins, bonding- recent developments- tarnish and corrosion, dental amalgam, direct filling gold, casting alloys, inlay wax, die materials, investments, casting procedures, defects, dental cements for restoration and pulp protection (luting, liners, bases) cavity varnishes.  
• Dental ceramics-recent advances, finishing and polishing materials.  
• Dental burs – design and mechanics of cutting – other modalities of tooth preparation.  
• Methods of testing biocompatibility of materials used.
CONSERVATIVE DENTISTRY

1. Examination, diagnosis and treatment plan

2. Occlusion as related to conservative dentistry, contact, contour, its significance. Separation of teeth, matrices, used in conservative dentistry.


4. Hand and rotary cutting instruments, development of rotary equipment, speed ranges, hazards.

5. Dental burs and other modalities of tooth reparation- recent developments (air abrasions, lasers etc)

6. Infection control procedures in conservative dentistry, isolation equipments etc.

7. Direct concepts in tooth preparation for amalgam, composite, GIC and restorative techniques, failures and management.

8. Direct and indirect composite restorations.

9. Indirect tooth colored restorations- ceramic, inlays and onlays, veneers, crowns, recent advances in fabrication and materials.

10. Impression procedures used for indirect restorations.

11. Cast metal restorations, indications, contraindications, tooth preparation for class 2 inlay, Onlay, full crown restorations. Restorative techniques, direct and indirect methods of fabrication including materials used for fabrication like inlay wax, investment materials.

12. Direct gold restorations.

13. Recent advances in restorative materials and procedures.


15. Advance knowledge of minimal intervention dentistry.

16. Recent advances in restoration of endodontically treated teeth and grossly mutilated teeth

17. Hypersensitivity, theories, causes and management.

18. Lasers in Conservative Dentistry

19. CAD-CAM & CAD-CIM in restorative dentistry

20. Dental imaging and its applications in restorative dentistry (clinical photography)

21. Principles of esthetics
   - Color
   - Facial analysis
   - Smile design
   - Principles of esthetic integration
- Treatment planning in esthetic dentistry

ENDODONTICS

1. Rationale of endodontics.


3. Dentin and pulp complex.

4. Pulp and periapical pathology

5. Pathobiology of periapex.

6. Diagnostic procedure – recent advances and various aids used for diagnosis. Orofacial dental pain emergencies: endodontic diagnosis and management

7. Case selection and treatment planning

8. Infection control procedures used in Endodontics (aseptic techniques such as rubber dam, sterilization of instruments etc.)


10. Endodontic instruments and instrumentation – recent developments, detailed description of hand, rotary, sonic, ultrasonic etc..

11. Working length determination / cleaning and shaping of root canal system and recent development in techniques of canal preparation.

12. Root canal irrigants and intracanal medicaments used including non-surgical Endodontics by calcium hydroxide.


16. Local anesthesia in endodontics.

17. Endodontic surgeries, recent developments in technique and devices, endosseous endodontic implants – biology of bone and wound healing.

18. Endo-perio inter-relationship, endo-perio lesions and management

19. Drugs and chemicals used in Endodontics

20. Endo emergencies and management.

21. Restoration of endodontically treated teeth, recent advances.
22. Geriatric Endodontics

23. Endo emergencies and management.

24. Biologic response of pulp to various restorative materials and operative procedures.

25. Lasers in Endodontics.


27. Endodontics radiology - digital technology in endodontics practice.


29. Endodontics failures and retreatment.

30. Resorptions and its management.

31. Microscopes in endodontics.

32. Single-visit endodontics, current concepts and controversies.

BOOKS RECOMMENDED :-

1. Science Of Dental Materials - Phillip’s
2. Basic Dental Materials - John J.Manappallil
3. Art & Science Of Operative Dentistry - Sturdevant’s Theodore M.Roberson
4. Textbook Of Operative Dentistry - Vimal Sikri
5. Clinical Operative Dentistry - Ramya Raghu
7. Ingle’s Endodontics - John I Ingle
8. Pathways Of The Pulp - Stephen Cohen
9. Grossman’s Endodontic Practice - Suresh Chandra,Gopikrishna