IQRA NATIONAL UNIVERSITY PESHAWAR PAKISTAN

DEPERTMENT OF ALLIED HEALTH SCIENCES

Bs DENTAL TECHNOLOGY

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SUBJECT: BIOETHICS

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Question 1. What do you know about dentinal caries?

Write a detailed note on pathophysiology of dentinal caries.

Answer: Dentinal caries:

Dental caries or cavities, more commonly known as tooth decay, are caused by a breakdown of the tooth enamel. This breakdown is the result of bacteria on teeth that breakdown foods and produce acid that destroys tooth enamel and results in tooth decay.

Cause of dental caries:

Free sugars are the essential dietary factor in the development of dental caries. Dental caries develops when bacteria in the mouth metabolize sugars to produce acid that demineralizes the hard tissues of the teeth (enamel and dentine).

Pathophysiology of dentinal caries:

The signaling molecules and growth factors released upon dentine demineralization up regulate the odontoblast activity and act as sensor cells. After carious stimulation, odontoblasts initiate an inflammatory reaction by producing chemokine's and synthesis a protective tertiary dentine.

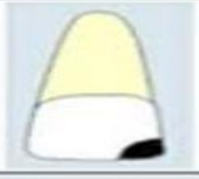
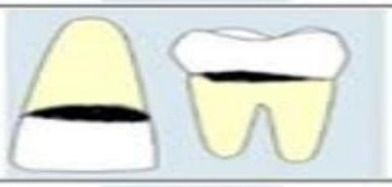
Teeth are bathed in saliva and have a coating of bacteria on them (biofilm) that continually forms. The development of biofilm begins with pellicle formation. Pellicle is an acellular proteinaceous film which covers the teeth. Bacteria colonize on the teeth by adhering to the pellicle-coated surface. Over time, a mature biofilm is formed and this create a cariogenic environment on the tooth surface. The minerals in the hard tissues of the teeth (enamel, dentin and cementum) are constantly undergoing processes of demineralization and remineralization. Dental caries results

when the demineralization rate is faster than the remineralization and there is net mineral loss. This happens when there is an ecologic shift within the dental biofilm, from a balanced population of micro-organisms to a population that produce acids and can survive in an acid environment.

Question 2. Briefly classify caries along with diagrammatic illustration.

Answer: Caries classification: Caries classification according to their severity, the appearance of interproximal caries can be classified as incipient, moderate, advanced or severe, depending on the amount of enamel and dentin involved in the caries process.

Diagrammatic illustration:

Classes	Illustration
Class I	
Class II	
Class III	
Class IV	
Class V	
Class VI	

Question 3. What is the rubber dam? What are different types of hand cutting instruments?

Answer: Rubber dam: A dental dam or rubber dam, also known as a Koffer dam, is a thin, six-inch, latex or nitrile square sheet that is used in dentistry as a shield to isolate one or more teeth from the remainder of the mouth during a dental procedure.

Hand cutting instruments:

Hand cutting instruments allow the dentist, dental hygienist or dental assistant to remove decay manually from teeth for final restoration. The hand cutting instruments include the chisel, excavator, elevator, gingival margin trimmer, hand piece, hoe, hatchet, scalar and Wilson.

Question 4. Why is conservative dentistry important, explain in detail.

Answer: Conservative dentistry:

Conservative dentistry, a treatment process whereby a minimum of healthy tooth structure is removed during the restorative process, is inherently a desirable dental objective. Natural enamel and natural dentin are still the best dental materials in existence, and thus, minimally invasive procedures that conserve more of the original, healthy tooth structure are preferable.

Minimally invasive dental procedures are beneficial from a patient's point of view as well. There is less discomfort, less need for local anesthesia, and a real prospect that the repaired natural tooth will last a lifetime. The replacement of existing amalgam restorations with newer amalgam involves ever larger restorations that have shorter life spans than their predecessors. The replacement procedures may nick or otherwise damage adjacent healthy teeth.

In many parts of the world, restorative dentistry has been described and taught as “conservative dentistry.” It has hardly been conservative of tooth structures, however; traditional methods and materials have been aggressive and highly invasive, requiring the removal of otherwise healthy enamel and dentin for various reasons, including extending the cavity for the retention of the final restoration and extending a preparation for the prevention of recurrent decay. Thus, healthy tooth structures were condemned to removal by the demands of non-adhesive restorative materials.

The development of biotechnological approaches is of great importance to the field of conservative dentistry. For many years there has been a gap between basic research and dental practice, but it seems that the recent arrival of new adhesive systems, together with disinfecting molecules, are a

first step towards the application of new ways to ‘treat the pulp’. Today, research in dentistry should not be limited to the studies of alloys, size of drills, disinfecting power of solutions, or mechanical resistance; a new research approach based on biotechnology will ultimately change the perception and practice of clinical dentistry.

Types of Conservative treatment:

Conservative dentistry encompasses a range of direct and indirect.

- New and replacement fillings
- Inlays and Onlays
- Crowns
- Veneers
- Bridges
- Root canal treatment
- Gum disease treatment

Question 5. What protocols will you follow in conservative dentistry ward to treat a patient with irreversible pulpitis and to avoid COVID infection?

Answer: According to the SOPs of Government first we will follow all the instructions as gloves, mask, eye protect glasses. We will see the conditions of the dentist if notice any pain in the mouth. If pulpitis, treating it early may help prevent irreversible pulpitis. Reversible pulpitis is treated by removing the cavity and filling the tooth. A root canal or tooth extraction may be used for irreversible pulpitis.