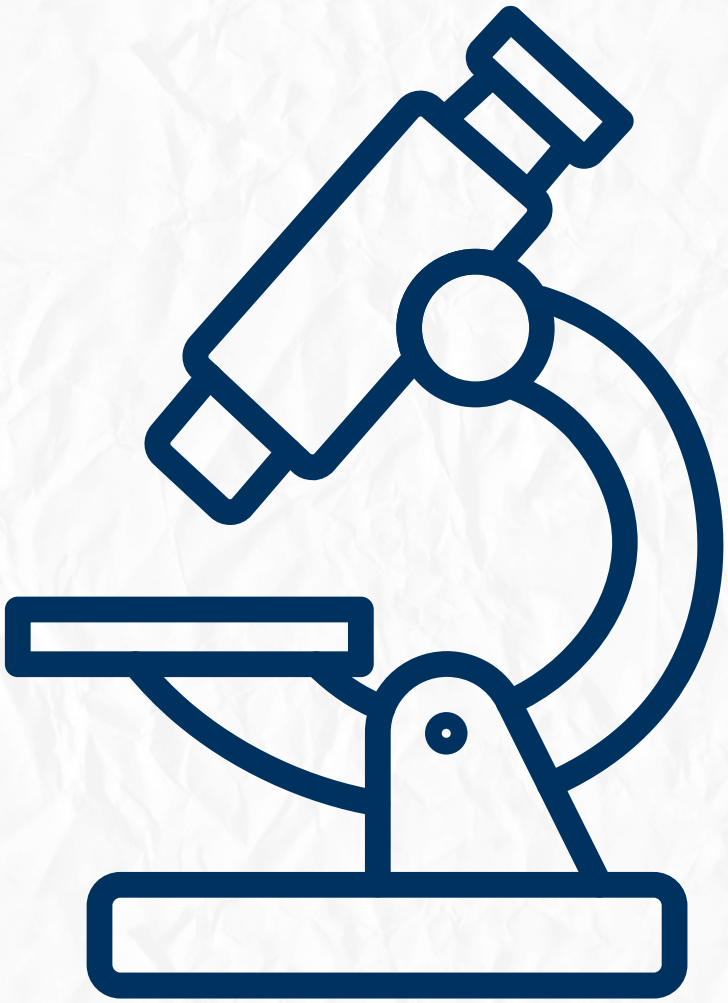
لجنة طب الأسنان

1

Oral Histology

Quiz time



Pulp

Done by : Lujain Hamdan

Q1: A 20-year-old patient presents with deep caries. During excavation, a small exposure occurs. Which cell type is primarily responsible for initiating the formation of a dentin bridge?

- A) Fibroblasts
- B) Undifferentiated Mesenchymal Cells (UMCs)
- C) Primary Odontoblasts
- D) Histiocytes

Answer:- B

Q2: While performing an endodontic procedure, you notice a small canal branching laterally in the apical third. What is the most likely cause?

- A) Over-activity of the epithelial diaphragm.
- B) Encountering a large blood vessel during root development.
- C) Late degeneration of Hertwig's epithelial root sheath.
- D) Excessive formation of circumpulpal dentin.

Answer:- B

Q3: Histologically, what is the functional significance of the "Zone of Weil"?

- A) Primary site for collagen synthesis.
- B) Reservoir for defensive cells like macrophages.
- C) Area for mobilization and replacement of odontoblasts.
- D) Contains the central neurovascular bundle.

Answer:- C

Q4: A patient presents with a "Pulp Polyp". What is the main driving factor?

- A) Acute bacterial invasion with high-grade irritation.
- B) Severe mechanical trauma causing sudden necrosis.
- C) Persistent low-grade mechanical irritation and bacterial invasion.
- D) Dystrophic calcification following hemorrhage.

Answer:- C

Q5: A radiopaque mass in the pulp chamber with no dentinal tubules, formed around degenerated cells, is a:

- A) True Denticle
- B) Embedded Denticle
- C) False Denticle
- D) Diffuse Calcification

Answer:- C

Q6: Describe the morphological change of odontoblasts from crown to apex:

- A) Tall columnar in crown, cuboidal in root, flat at apex.
- B) Flat in crown, tall columnar at apex.
- C) Remain tall columnar throughout.
- D) Spindle-shaped in crown, stellate at apex.

Answer:-A

Q7: In a young pulp, what is the "dual function" of fibroblasts?

- A) Sensation and conduction.
- B) Synthesis and degradation of fibers and ground substance.
- C) Phagocytosis and antibody production.
- D) Inducing enamel and root sheath formation.

Answer:- B

Q8: Which nerve fibers control the contraction of pulpal blood vessel walls?

- A) Myelinated sensory nerves.
- B) Myelinated parasympathetic nerves.
- C) Non-myelinated sympathetic nerves.
- D) Large A-delta fibers.

Answer:- C

Q9: What is the average size of the apical foramen in mandibular teeth?

- A) 0.4 mm
- B) 0.3 mm
- C) 0.5 mm
- D) 0.2 mm

Answer:- B

Q10: What is the primary histological feature of "Reticular Atrophy" in aging pulp?

- A) Increase in UMCs.
- B) Formation of numerous true denticles.
- C) Lessened vitality and response to stimulation.
- D) Thickening of the odontoblastic layer.

Answer:- C

Q11: In a long-standing chronic inflammatory process of the pulp, a histological section reveals cells with an eccentric nucleus and a "cart-wheel" chromatin pattern. These cells are producing specific globulin proteins. Which of the following is the primary role of these cells in pulpal defense?

- A) Phagocytosis of necrotic debris and bacteria.
- B) Antigen presentation to native T-lymphocytes.
- C) Production of specific antibodies (Immunoglobulins).
- D) Synthesis of reparative collagen fibers (Type III).

Answer:- C

Q12: A "True Denticle" (True Pulp Stone) is an extremely rare finding. What is the specific embryological "error" that leads to its formation?

- A) Dystrophic calcification of a blood clot within the pulp core.
- B) Remnants of Hertwig's Epithelial Root Sheath (HERS) inducing pulp cells to differentiate.
- C) Hypervitaminosis D causing generalized pulp calcification.

Answer:- B

Q13: During a complex root canal treatment on a geriatric patient, you find the pulp space significantly constricted. Histologically, the collagen fibrils are no longer scattered but are organized into dense bundles. This "Fiber Bundle" organization is most prominently found in which part of the aging pulp?

- A) The subodontoblastic zone of Weil.
- B) The coronal pulp horns.
- C) The apical part of the radicular pulp.
- D) The central pulp core of the chamber.

Answer:.C

Q14: In the "Apical Control Zone," the pulp is continuous with the periapical tissue. Which of the following histological landmarks represents the "Minor Apical Diameter" where the root canal treatment should ideally terminate?

- A) The Radiographic Apex.
- B) The Anatomical Apex.
- C) The Apical Foramen.
- D) The Apical Constriction (CDJ).

Answer :- D

Q15: "Rouget's Cells" (Pericytes) are found on the outer surface of pulpal capillaries. In the event of severe pulpal injury, what is the most significant potential of these cells mentioned in advanced histology?

- A) They act as mechanoreceptors for pain transmission.
- B) They provide the contractile force to stop pulpal hemorrhage.
- C)They synthesize the glycosaminoglycans of the ground substance.

Answer:- B

Q16: A 45-year-old patient presents with "Diffuse Pulp Calcification." Histologically, this calcification is seen following the course of blood vessels. On top of which type of degeneration does this usually occur?

- A) Fatty degeneration.
- B) Hyaline degeneration.
- C) Amyloid degeneration.
- D) Mucoid degeneration.

Answer:- B

Q17: The "Plexus of Raschow" is a parietal layer of nerves. At which point do these nerve fibers lose their "Myelin Sheath" to become free nerve endings?

- A) As they enter the apical foramen.
- B) Within the central pulp core.
- C) In the cell-free zone of Weil.
- D) Inside the dentinal tubules.

Answer:- C

Q18: During the formation of an "Accessory Canal," which developmental structure fails to form or remains incomplete at the floor of the pulp chamber?

- A) The Dental Papilla.
- B) The Epithelial Diaphragm.
- C) The Dental Follicle.
- D) The Stratum Intermedium.

Answer:- B

Q19: Which pulpal cell is described as being at least 50 µm long, acting as an "Antigen-Presenting Cell" (APC), and is distributed largely around odontoblasts?

- A) Macrophage (Histiocyte).
- B) Dendritic Cell.
- C) Mast Cell.
- D) Undifferentiated Mesenchymal Cell (UMC).

Answer:- B

Q20: In the "Inductive Function" of the pulp, the Dental Papilla is essential for the formation of which tissue?

- A) Cementum matrix.
- B) Periodontal ligament fibers.
- C) Enamel (by inducing the Enamel Organ).
- D) Alveolar bone proper.

Answer:- C