ADEX Objective Structured Clinical Examination (OSCE) Practice Exam (Sample)

Study Guide

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Questions

1. Which condition is most commonly associated with hyperthyroidism?

A. Cretinism

B. Graves disease

C. Myxedema

D. Hashimoto's thyroiditis

2. What is the ideal depth for cingulum rests?

A. 1 mm

B. 1.5 mm

C. 2 mm

D. 2.5 mm

3. What is the maximum dose of Prilocaine (Citanest) per kilogram?

A. 3 mg/kg

B. 5 mg/kg

C. 7 mg/kg

D. 10 mg/kg

4. What type of impression material is impregnum?

A. Hydrophobic

B. Polyether

C. Polysulfide

D. Silicone

5. What type of tumor is an adenomatoid odontogenic tumor (AOT) most commonly associated with?

A. Impacted maxillary canine

B. Unerupted molars

C. Partially erupted incisors

D. Maxillary third molars

6. In chronic myelogenous leukemia (CML), what is a noticeable symptom related to the spleen?

A. Splenomegaly

B. Splenic atrophy

C. Abscess formation

D. Fibrosis

7. Which type of impression material should not come into contact with latex gloves?

A. Polysulfide

B. Polyether

C. Polyvinyl Siloxane (PVS)

D. Alginate

8. What method is not typically effective for Paget's disease?

A. Medication to regulate calcium levels

B. Radiotherapy

C. Bone density monitoring

D. Physical therapy

9. Which condition is characterized by serious weakness of voluntary muscles due to antibody-mediated disruption of receptors?

A. Multiple sclerosis

B. Myasthenia gravis

C. Parkinson's disease

D. Huntington's disease

10. What clinical sign is characteristic of measles?

A. Koplick's spots near Stenson's duct

B. White lesions on the tongue

C. Rash on palms and soles

D. Painful vesicles in the mouth

Answers

1. B
2. C
3. C
4. B
5. A
6. A
7. C
8. B
9. B
10. A

Explanations

1. Which condition is most commonly associated with hyperthyroidism?

A. Cretinism

B. Graves disease

C. Myxedema

D. Hashimoto's thyroiditis

The condition most commonly associated with hyperthyroidism is Graves disease. This autoimmune disorder is characterized by the overproduction of thyroid hormones, leading to an increased metabolic rate and symptoms such as weight loss, anxiety, and hyperactivity. Graves disease is unique among thyroid disorders as it stems from the body's immune system producing antibodies that stimulate the thyroid gland to produce excess hormones. In contrast, conditions like cretinism and myxedema are associated with hypothyroidism, which is characterized by underactive thyroid function and resulting low levels of thyroid hormones. Hashimoto's thyroiditis, although an autoimmune condition affecting the thyroid, typically leads to hypothyroidism rather than hyperthyroidism. Therefore, Graves disease is definitively recognized as the most common cause of hyperthyroid symptoms, making it the correct choice in this context.

2. What is the ideal depth for cingulum rests?

A. 1 mm

B. 1.5 mm

C. 2 mm

D. 2.5 mm

Cingulum rests are crucial in the design of removable prostheses, particularly in maximizing retention and stability. The ideal depth for cingulum rests is typically around 2 mm. This depth allows for sufficient material removal without compromising the strength of the tooth structure while providing the necessary support for the framework of the prosthesis. At this depth, the cingulum rest provides an effective guiding surface that can enhance the fit of the prosthesis and can contribute to the overall comfort for the patient. Deeper or shallower rests may not achieve the optimal balance between support and preservation of tooth structure. For example, a rest that is too shallow may not provide adequate retention, while one that is too deep can risk weakening the tooth and may lead to potential complications. Understanding the specific indications for cingulum rests and the need for their careful placement is critical for successful prosthetic outcomes.

3. What is the maximum dose of Prilocaine (Citanest) per kilogram?

A. 3 mg/kg

B. 5 mg/kg

C. 7 mg/kg

D. 10 mg/kg

Prilocaine, a local anesthetic commonly used in dental and medical procedures, has a maximum recommended dose of 7 mg/kg. This guideline is based on pharmacological research and clinical studies which have established that doses above this threshold can increase the risk of systemic toxic effects, particularly methemoglobinemia, which is a condition that reduces the ability of hemoglobin to carry oxygen. Ensuring that the dose remains within safe limits is crucial to prevent adverse reactions. In clinical practice, clinicians refer to these maximum dose recommendations to safely manage local anesthetic administration, taking into consideration the individual patient's weight and health status. Proper dosing not only improves the efficacy of the anesthesia but also minimizes potential complications.

4. What type of impression material is impregnum?

A. Hydrophobic

B. Polyether

C. Polysulfide

D. Silicone

Impregnum is a type of polyether impression material, known for its excellent dimensional stability and high accuracy. Polyether materials are hydrophilic, which allows them to capture fine details even in the presence of moisture. This characteristic makes them particularly useful in dental applications, where a precise impression is essential for procedures such as fabricating crowns, bridges, and other prosthetic devices. Polyether impression materials also exhibit good tear resistance and can be easily removed from the mouth without distorting the impression, which is critical for maintaining the accuracy of the mold. These qualities make polyether a preferred choice in many clinical scenarios, especially when detailed and precise impressions are required. In contrast, the other materials listed, such as hydrophobic materials, polysulfide, and silicone, may have different properties that make them more suitable for certain situations but do not specifically identify Impregnum. Hydrophobic materials can repel moisture, which can be a disadvantage in environments where saliva or blood is present. Polysulfide, while elastic and resilient, may not provide the same level of detail as polyether and can take longer to set. Silicone impression materials, while also popular, often have variations in their hydrophilic or hydrophobic nature, but do not provide the specific

5. What type of tumor is an adenomatoid odontogenic tumor (AOT) most commonly associated with?

A. Impacted maxillary canine

B. Unerupted molars

C. Partially erupted incisors

D. Maxillary third molars

An adenomatoid odontogenic tumor (AOT) is most commonly associated with impacted maxillary canines. This association is primarily due to the tumor's frequent occurrence in the anterior maxilla, where the maxillary canine is located. AOT typically presents in younger patients, often in the second or third decade of life, and is known to develop around the crowns of unerupted teeth, particularly the maxillary canine. The tumor is characterized by its benign nature and distinct histological features. It often causes localized swelling or may be detected incidentally on radiographs, where it appears as a well-defined radiolucency associated with the crown of an unerupted tooth. In this context, impacted maxillary canines are the most common underlying teeth associated with AOT, making this relationship significant in clinical practice.

6. In chronic myelogenous leukemia (CML), what is a noticeable symptom related to the spleen?

A. Splenomegaly

B. Splenic atrophy

C. Abscess formation

D. Fibrosis

In chronic myelogenous leukemia (CML), splenomegaly, or an enlarged spleen, is a common and notable symptom. This enlargement occurs due to the accumulation of abnormal white blood cells associated with the disease. In CML, the overproduction of myeloid cells leads to increased workload and congestion within the spleen as it attempts to filter and manage these excess cells. Splenomegaly can present with symptoms such as discomfort or pain in the left upper quadrant of the abdomen, a feeling of fullness, and in some cases, it may lead to early satiety due to pressure on the stomach. The presence of splenomegaly is often a key clinical finding in patients with CML and can help in the diagnosis and monitoring of the disease's progression. Other conditions like splenic atrophy, abscess formation, or fibrosis are not characteristic features of CML. Instead, they relate to different underlying pathology or complications that aren't typically seen in the context of CML. The focus on splenomegaly as a symptom is essential for understanding both the clinical presentation of the disease and the physiological impact of the leukemic process on the spleen.

7. Which type of impression material should not come into contact with latex gloves?

A. Polysulfide

B. Polyether

C. Polyvinyl Siloxane (PVS)

D. Alginate

Polyvinyl Siloxane (PVS) is the correct choice as it is known to have compatibility issues with latex. When PVS comes into contact with latex, it can inhibit the setting reaction of the material due to the presence of sulfur in latex gloves. This can lead to distortion of the impression or an incomplete casting, resulting in an inaccurate representation of the mouth or dental structures. Understanding the behavior of various impression materials in relation to different substances is crucial for ensuring the integrity and accuracy of dental impressions. While other impression materials might have different handling and compatibility characteristics, PVS specifically is affected negatively by the presence of latex gloves, making it imperative to avoid any contact.

8. What method is not typically effective for Paget's disease?

A. Medication to regulate calcium levels

B. Radiotherapy

C. Bone density monitoring

D. Physical therapy

In the context of Paget's disease, radiotherapy is not considered a typical or effective method for treatment. Paget's disease primarily affects the bones, causing them to become enlarged and misshapen, which can lead to pain, arthritis, and fractures. The goals of treatment focus on managing symptoms and preventing complications. Medications, such as bisphosphonates, are used to help regulate bone remodeling and lower calcium levels if they are elevated. This pharmacological approach directly targets the underlying bone metabolism issues associated with Paget's disease. Bone density monitoring is crucial for assessing the state of the bones and determining the efficacy of treatments, allowing for appropriate adjustments. Physical therapy can also be beneficial for improving mobility and strength, along with managing pain. In contrast, radiotherapy is not typically employed for Paget's disease as it is more relevant for treating malignancies rather than addressing the bone metabolism dysfunction present in this condition. The use of radiation may relieve pain in specific cases involving bone pain from arthritis or fractures, but it does not change the progression of Paget's disease itself or address its underlying pathology. Therefore, radiotherapy is not an effective treatment strategy for this disease.

9. Which condition is characterized by serious weakness of voluntary muscles due to antibody-mediated disruption of receptors?

A. Multiple sclerosis

B. Myasthenia gravis

C. Parkinson's disease

D. Huntington's disease

Myasthenia gravis is characterized by serious weakness of voluntary muscles due to the immune system producing antibodies that disrupt the communication between nerves and muscles. Specifically, these antibodies attack acetylcholine receptors at the neuromuscular junction, impairing the ability of acetylcholine, a neurotransmitter, to stimulate muscle contraction. This condition leads to fluctuating weakness in voluntary muscles, especially those controlling eye and eyelid movement, facial expression, and swallowing. In contrast, multiple sclerosis involves damage to the protective covering of nerve fibers in the central nervous system and is primarily associated with neurological symptoms rather than direct muscle weakness. Parkinson's disease is characterized by a progressive loss of motor control due to the degeneration of dopamine-producing neurons in the brain, leading to tremors, rigidity, and bradykinesia, but it is not caused by antibody-mediated receptor disruption. Huntington's disease is a hereditary neurodegenerative disorder that affects movement, cognitive functions, and psychiatric health, but again, it does not involve antibody-mediated processes at the neuromuscular junction. Thus, myasthenia gravis is distinctly recognized for its mechanism of muscle weakness due to antibody interference with receptor function.

10. What clinical sign is characteristic of measles?

A. Koplick's spots near Stenson's duct

B. White lesions on the tongue

C. Rash on palms and soles

D. Painful vesicles in the mouth

Koplick's spots are small, white lesions that appear on the oral mucosa, typically near Stenson's duct, and are a hallmark clinical sign of measles. These spots are often seen in the early stages of measles infection, preceding the characteristic rash by a few days. They are considered pathognomonic for measles due to their distinct appearance and significance in diagnosis. The presence of Koplick's spots serves as an important indicator to healthcare professionals that a patient could be suffering from measles, especially if accompanied by other symptoms such as high fever and a rash. This early identification is critical, as measles is a highly contagious viral illness, and prompt recognition can help in controlling outbreaks and managing patient care effectively. In contrast, while conditions like oral thrush might present with white lesions on the tongue or other viral infections may cause painful vesicles in the mouth, these signs are not specific to measles. Similarly, rashes on palms and soles can occur with several other diseases but are not classical for measles. Therefore, the distinct presence of Koplick's spots is key in recognizing measles early in its course.