North Carolina EMT State Practice Exam (Sample)

Study Guide

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Questions

1. What type of lesion is typically associated with syphilis?

A. Vesicle

B. Patch

C. Chancre

D. Pustule

2. Where are alveoli located?

A. Along the bronchi

B. At the end of the airway

C. In the larynx

D. Within the trachea

3. Which area of an MCI would be used for medical treatment and monitoring of personnel?

A. The Cold Zone

B. The Warm Zone

C. The Hot Zone

D. The Decontamination Zone

4. For an infant experiencing conscious choking, what is the recommended method to relieve the blockage?

A. 5 chest thrusts followed by 5 back blows

B. 5 back blows followed by 5 chest thrusts

C. Abdominal thrusts

D. Manual removal of the obstruction

5. Which of the following is a classic sign of pulmonary embolism?

A. Gradual chest pain

B. Respiratory distress with sudden onset

C. Persistent cough

D. Wheezing and tightness in the chest

6. What is the function of the amniotic sac during pregnancy?

A. To assist with labor

B. To house the fetus and provide protection

C. To supply nutrients to the fetus

D. To facilitate fluid exchange

7. What virulent disease can remain communicable in dried blood for days or weeks?

A. Hepatitis B

B. Hepatitis C

C. HIV

D. Influenza

8. During the neonatal assessment of the umbilical cord, how many arteries and veins are normally present?

A. 1 artery and 2 veins

B. 2 arteries and 1 vein

C. 3 arteries

D. 3 veins

9. When treating a patient with activated charcoal, which dosage is appropriate for adults?

A. 10-15 gm

B. 25-50 gm

C. 100 gm

D. 5-10 gm

10. What is a common symptom of thoracic aorta injury?

A. Abdominal pain

B. Chest pain and pain between shoulder blades

C. Shortness of breath

D. Lower back pain

Answers

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

Explanations

1. What type of lesion is typically associated with syphilis?

A. Vesicle

B. Patch

C. Chancre

D. Pustule

A chancre is a specific type of lesion that is characteristic of the primary stage of syphilis. It appears as a painless ulcer or sore at the site where the syphilis bacteria enter the body, commonly on the genitals, anus, or mouth. This lesion is firm, round, and usually has clean edges, which distinguishes it from other types of lesions. The presence of a chancre is a key indicator in diagnosing the early stages of syphilis, making it crucial for prompt treatment and prevention of further complications associated with the disease. In contrast, vesicles are small fluid-filled blisters, patches are flat areas of altered skin color, and pustules are small bumps filled with pus, none of which are specific to syphilis. These types of lesions may be associated with other dermatological conditions or infections but do not serve as indicative signs of syphilis. Thus, understanding the characteristics of a chancre is vital for recognizing the disease and initiating appropriate medical intervention.

2. Where are alveoli located?

A. Along the bronchi

B. At the end of the airway

C. In the larynx

D. Within the trachea

Alveoli are located at the end of the airway, serving as the tiny air sacs in the lungs where the exchange of oxygen and carbon dioxide occurs. This structure is crucial for the respiratory process, enabling the transfer of oxygen into the bloodstream and the removal of carbon dioxide from the blood. The alveoli are situated at the terminus of the bronchial tree, specifically branching from the bronchioles, which lead into these small clusters of air sacs. The walls of alveoli are extremely thin and are surrounded by capillaries, facilitating efficient gas exchange. Understanding the location of alveoli helps reinforce the broader context of respiratory anatomy and the vital functions they perform within the respiratory system.

3. Which area of an MCI would be used for medical treatment and monitoring of personnel?

A. The Cold Zone

B. The Warm Zone

C. The Hot Zone

D. The Decontamination Zone

The Cold Zone is designated for the medical treatment and monitoring of personnel in a Mass Casualty Incident (MCI). This area is the safest location, away from potential hazards or contamination associated with the incident. It allows for a controlled environment where emergency medical services can set up treatment areas, evaluate patients, and provide necessary care without the immediate dangers present in the other zones. In this context, the Warm Zone serves as a transition area where personnel may be decontaminated before moving to the Cold Zone but is not primarily for patient treatment. The Hot Zone, on the other hand, is the area where the hazardous material is present, and access is severely restricted for safety reasons. The Decontamination Zone is specifically designated for removing contaminants from individuals and equipment, ensuring no hazardous materials are brought into the Cold Zone. Therefore, the Cold Zone is the optimal area for medical treatment and monitoring during an MCI.

4. For an infant experiencing conscious choking, what is the recommended method to relieve the blockage?

A. 5 chest thrusts followed by 5 back blows

B. 5 back blows followed by 5 chest thrusts

C. Abdominal thrusts

D. Manual removal of the obstruction

In cases of conscious choking in infants, the recommended procedure is to administer a combination of back blows and chest thrusts to effectively relieve the blockage. The initial five back blows are performed by positioning the infant face down on the rescuer's forearm, with the head lower than the body, allowing gravity to assist in dislodging the obstruction. This method helps deliver a sharp blow to the back, aiming for the area between the shoulder blades. After the back blows, five chest thrusts are performed while the infant is held in a supine position, using two or three fingers placed on the center of the chest just below the nipples. This technique creates a small volume of air pressure within the chest that can help expel the object causing the choking. This combination—back blows followed by chest thrusts—is effective as it utilizes both types of pressure to increase the likelihood of dislodging any obstructive material from the airway. Using abdominal thrusts is not recommended for infants as it can potentially cause harm due to their smaller size and developmental differences. Manual removal of the obstruction is also not advised unless the object is clearly visible and can be safely taken out without pushing it further down. Understanding this sequence is crucial for resolving choking emergencies in infants safely

5. Which of the following is a classic sign of pulmonary embolism?

A. Gradual chest pain

B. Respiratory distress with sudden onset

C. Persistent cough

D. Wheezing and tightness in the chest

The classic sign of pulmonary embolism is respiratory distress with sudden onset. This condition often arises when a blood clot travels to the lungs, blocking a pulmonary artery. The sudden nature of the symptom pleads towards an acute event, distinguishing it from other types of respiratory or cardiac issues that typically have more gradual manifestations. In the context of pulmonary embolism, the blockage leads to impaired gas exchange, resulting in rapid difficulty in breathing, a sensation of air hunger, and potentially increased respiratory rate. This acute change is indicative of the urgency often associated with a pulmonary embolism, as patients may rapidly deteriorate without prompt medical intervention. The other options may reflect various respiratory or cardiac conditions but do not capture the acute presentation commonly seen with pulmonary embolism. Therefore, understanding the classic signs of pulmonary embolism, particularly the sudden respiratory distress, is key for early recognition and intervention.

6. What is the function of the amniotic sac during pregnancy?

A. To assist with labor

B. To house the fetus and provide protection

C. To supply nutrients to the fetus

D. To facilitate fluid exchange

The amniotic sac plays a crucial role during pregnancy by housing the fetus and providing a protective environment. This membrane surrounds the developing fetus and is filled with amniotic fluid, which serves several important functions. This fluid acts as a cushion, protecting the fetus from physical shocks and impacts. Additionally, it helps regulate temperature, ensuring a stable environment for fetal development. The sac also allows for fetal movement, which is essential for musculoskeletal development. While the other options mention various functions related to pregnancy, they do not accurately describe the primary role of the amniotic sac. For example, while it helps create an environment for nutrient exchange indirectly, the actual supply of nutrients comes from the placenta. Similarly, assisting with labor and facilitating fluid exchange are functions associated with other structures within the reproductive system. Thus, recognizing the importance of the amniotic sac in its role of housing and protecting the fetus is essential for understanding fetal development during pregnancy.

7. What virulent disease can remain communicable in dried blood for days or weeks?

A. Hepatitis B

B. Hepatitis C

C. HIV

D. Influenza

Hepatitis B is known for its resilience and potential for long-term survival outside of the body, particularly in dried blood. The virus can remain infectious on surfaces for several days or even weeks, making it a significant concern for anyone who may come into contact with blood or bodily fluids. This extended communicability is attributed to the virus's ability to withstand environmental stressors. In comparison, while Hepatitis C and HIV are also transmitted through blood, they are less stable outside of the human body and typically do not remain infectious for such extended periods. Influenza, primarily a respiratory virus, does not have the same bloodborne transmission potential and therefore is not relevant in this context. Understanding the characteristics of Hepatitis B is crucial for EMTs and others working in healthcare settings to minimize the risk of transmission.

8. During the neonatal assessment of the umbilical cord, how many arteries and veins are normally present?

A. 1 artery and 2 veins

B. 2 arteries and 1 vein

C. 3 arteries

D. 3 veins

In a normal neonatal assessment, the umbilical cord typically contains two arteries and one vein. This configuration is vital as the two arteries are responsible for carrying deoxygenated blood from the fetus to the placenta, while the single vein carries oxygenated blood from the placenta back to the fetus. Understanding this anatomical structure is crucial for EMTs as it aids in evaluating the newborn's health, especially in situations where there may be complications during birth or if the infant exhibits signs of distress. Identifying any abnormalities in the number of arteries or veins, such as the presence of only one artery, can indicate potential congenital issues that may need immediate medical attention.

9. When treating a patient with activated charcoal, which dosage is appropriate for adults?

A. 10-15 gm

B. 25-50 gm

C. 100 gm

D. 5-10 gm

The appropriate dosage of activated charcoal for adults is in the range of 25 to 50 grams. This dosage is effective for adsorbing certain toxins and preventing their absorption in the gastrointestinal tract. Activated charcoal works by binding to various substances in the stomach and intestines, thereby reducing their availability for absorption into the body. Administering less than the recommended range, such as 10-15 grams or 5-10 grams, may not provide sufficient coverage for effective treatment of poisoning or overdose situations. Similarly, while 100 grams may seem effective, such a high dosage could lead to complications, like gastrointestinal obstruction or adverse effects without added benefit. Therefore, the 25 to 50 grams dosage is optimal for adult patients, balancing efficacy and safety.

10. What is a common symptom of thoracic aorta injury?

A. Abdominal pain

B. Chest pain and pain between shoulder blades

C. Shortness of breath

D. Lower back pain

A common symptom of thoracic aorta injury is chest pain and pain between the shoulder blades. This type of injury often results from blunt trauma, such as in a motor vehicle accident, or can develop due to other conditions like acute aortic dissection. The pain associated with thoracic aorta injury is typically described as severe and may be felt in the chest region and can radiate towards the back, particularly between the shoulder blades. This specific pain pattern arises due to the anatomical location of the thoracic aorta, where any injury can lead to significant discomfort and associated symptoms due to the disruption of blood flow and potential impact on surrounding structures. Recognizing this symptom is critical, as it can indicate a life-threatening condition that requires immediate medical intervention.