American Board of Surgery In-Training Examination (ABSITE) Practice Exam (Sample)

Study Guide

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Questions

1. What is typically seen on a chest X-ray (CXR) in a case of Boerhaave's syndrome?

A. Pneumothorax

B. Pleural effusion

C. Free air under the diaphragm

D. Consolidation

2. In the context of Lynch syndrome, which genetic alterations primarily affect DNA repair mechanisms?

A. TP53, PTEN, APC

B. MLH1, MSH2, MSH6, PMS2

C. BRCA1, BRCA2, MSH2

D. APC, STK11, MMR genes

3. What is the scoring for GCS eyes?

A. 4 spontaneous, 3 to command, 2 to pain, 1 none

B. 5 spontaneous, 3 to command, 2 to pain, 1 none

C. 4 to command, 3 to pain, 2 spontaneous, 1 none

D. 4 spontaneous, 2 to command, 1 to pain, 3 none

4. What symptom is associated with a score of 10 points on the Goldman Index?

A. Uncompensated heart failure

B. Recent myocardial infarction

C. Frequent PVCs

D. PACs on EKG

5. What is the major effect of high levels of circulating glucagon?

A. Increased insulin secretion

B. Increased glycogenolysis

C. Decreased glucogenesis

D. Increased fat storage

6. What is the primary difference between decorticate and decerebrate posture?

A. Decerebrate is flexion; decorticate is in extension

B. Decorticate is flexion; decerebrate is in extension

C. Both are flexion, but decerebrate is less severe

D. Decerebrate involves both arms flexed; decorticate is all limbs extended

7. What are the first tests commonly ordered for evaluating a testicular mass?

A. CT scan, serum electrolytes, urinalysis

B. Ultrasound, beta-HCG, AFP

C. Magnetic resonance imaging, testosterone levels, biopsies

D. Chest X-ray, blood cultures, prostate specific antigen

8. What is the general treatment for duodenal obstruction due to Crohn's disease after failed medical management?

A. Strictureplasty

B. Gastrojejunostomy

C. Resection with Whipple procedure

D. Duodenojejunostomy

9. What is the recommended treatment for anal canal cloacogenic carcinoma?

A. Surgery only

B. Chemotherapy alone

C. Chemotherapy and radiation therapy

D. Observation only

10. In which patient population is splenectomy associated with significant risk due to thalassemia?

A. Adults over 60

B. Children under 4

C. Pregnant women

D. Teens aged 13-18

Answers

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

Explanations

1. What is typically seen on a chest X-ray (CXR) in a case of Boerhaave's syndrome?

A. Pneumothorax

B. Pleural effusion

C. Free air under the diaphragm

D. Consolidation

In a case of Boerhaave's syndrome, which is a rupture of the esophagus leading to the leakage of esophageal contents into the mediastinum, the most common finding on a chest X-ray is typically a pleural effusion. This effusion may occur due to the irritation of the pleura by the spillage of gastric contents, leading to an inflammatory response. When esophageal rupture occurs, it can result in mediastinitis and subsequent pleural effusion, often on the left side due to the anatomical location of the esophagus and the pattern of leakage. The effusion may appear as an area of increased opacity on the chest X-ray, indicating fluid accumulation in the pleural space. While pneumothorax or consolidation could be associated with other types of chest trauma or lung infections, they are not characteristic findings of Boerhaave's syndrome. Free air under the diaphragm can be seen in cases of perforated abdominal viscera but is less commonly associated with esophageal rupture. Therefore, the presence of a pleural effusion is the most indicative radiological finding in Boerhaave's syndrome on a chest X-ray.

2. In the context of Lynch syndrome, which genetic alterations primarily affect DNA repair mechanisms?

A. TP53, PTEN, APC

B. MLH1, MSH2, MSH6, PMS2

C. BRCA1, BRCA2, MSH2

D. APC, STK11, MMR genes

In Lynch syndrome, also known as hereditary non-polyposis colorectal cancer (HNPCC), the genetic alterations that primarily affect DNA repair mechanisms are found in the mismatch repair (MMR) genes. The specific genes involved include MLH1, MSH2, MSH6, and PMS2. These genes play a crucial role in identifying and repairing errors that occur during DNA replication, and when they are mutated, it leads to microsatellite instability (MSI), which is a hallmark of Lynch syndrome and contributes to the development of various cancers, particularly colorectal and endometrial cancers. The correct answer highlights the genetic changes that directly influence the mechanisms responsible for maintaining genomic stability. In contrast, the other options include genes that are associated with different pathways or types of cancer. For instance, TP53, PTEN, and APC are more commonly linked to other forms of cancer and tumor suppression rather than the specific mismatch repair pathway relevant to Lynch syndrome. Understanding the genetic basis of Lynch syndrome is vital for risk assessment and management of affected individuals, as well as for family members, enhancing the importance of recognizing these specific gene alterations.

3. What is the scoring for GCS eyes?

A. 4 spontaneous, 3 to command, 2 to pain, 1 none

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The correct scoring for the eye-opening response in the Glasgow Coma Scale (GCS) categorizes responses as follows: a score of 4 is given for spontaneous eye opening, which indicates that the patient opens their eyes without any external stimulus; a score of 3 is awarded if the eyes open in response to verbal command; a score of 2 is assigned if the eyes only open in response to painful stimuli; and a score of 1 designates no eye opening at all. This scoring is essential in assessing a patient's level of consciousness and helps in determining the severity of a head injury or the effects of certain medical conditions. The GCS is a critical component in evaluating neurological function, and understanding these specific scoring criteria is foundational for effective patient assessment in both acute and clinical settings.

4. What symptom is associated with a score of 10 points on the Goldman Index?

A. Uncompensated heart failure

B. Recent myocardial infarction

C. Frequent PVCs

D. PACs on EKG

A score of 10 points on the Goldman Index indicates a significant risk associated with a patient's cardiac health, particularly in the context of non-cardiac surgery. The Goldman Index is a preoperative cardiac risk assessment tool that evaluates various factors to stratify patients based on their risk of perioperative cardiac complications. The presence of a recent myocardial infarction, particularly within the last six months, is a critical factor in determining a higher risk score. It suggests that the heart is not fully healed and may not tolerate the physiological stress of surgery well, increasing the likelihood of complications such as arrhythmias or even cardiac arrest during or after surgery. Thus, a recent myocardial infarction is a well-established factor in evaluating cardiac risk, making it a key contributor to a score of 10 on the Goldman Index. In contrast, complications like uncompensated heart failure, frequent PVCs, and PACs on an EKG are indeed significant cardiac risk factors as well; however, they carry different point values and may not elevate the score to the maximum of 10 points in the same manner that recent myocardial infarction does.

5. What is the major effect of high levels of circulating glucagon?

A. Increased insulin secretion

B. Increased glycogenolysis

C. Decreased glucogenesis

D. Increased fat storage

High levels of circulating glucagon primarily stimulate glycogenolysis, which is the breakdown of glycogen to glucose. Glucagon is a hormone produced by the alpha cells of the pancreas and plays a crucial role in maintaining blood glucose levels, especially during fasting states or periods of low carbohydrate intake. When blood glucose levels drop, glucagon is released, prompting the liver to convert stored glycogen into glucose, which is then released into the bloodstream to increase blood sugar levels. This process is essential for providing energy to the body, particularly to glucose-dependent tissues like the brain and red blood cells. Glucagon also promotes gluconeogenesis (the production of glucose from non-carbohydrate sources) and lipolysis (the breakdown of fats), but the immediate and direct major effect of glucagon is the enhancement of glycogenolysis in the liver. While insulin secretion, glucogenesis, and fat storage are relevant to glucose metabolism and energy storage, they are not directly stimulated by glucagon. Instead, glucagon counteracts the effects of insulin, which promotes glycogen storage and fat storage, thus underlining its primary role in increasing blood glucose levels through glycogenolysis.

6. What is the primary difference between decorticate and decerebrate posture?

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The distinction between decorticate and decerebrate postures is primarily based on the positioning of the limbs in response to various stimuli and reflects different levels of neurological impairment. Decorticate posture involves an abnormal flexion response. In this condition, both arms are flexed at the elbows with the hands brought close to the body, while the legs are extended. This posture is indicative of damage to the areas of the brain above the midbrain, particularly the corticospinal pathways. It typically suggests some degree of preserved function in the brain's upper regions, particularly relating to arm movement. In contrast, decerebrate posture is characterized by an extension response. In this posture, the arms are extended at the sides and the legs are extended as well, usually with the feet plantar-flexed. This pattern arises from severe brain damage, particularly involving the brainstem where the pathways that control muscle tone are severely disrupted. This posture indicates more significant injury than decorticate posture and suggests loss of brain function at a deeper level. Understanding these postures is crucial in clinical settings, as the type of posture can provide insights into the severity and location of neurological damage in patients.

7. What are the first tests commonly ordered for evaluating a testicular mass?

A. CT scan, serum electrolytes, urinalysis

B. Ultrasound, beta-HCG, AFP

C. Magnetic resonance imaging, testosterone levels, biopsies

D. Chest X-ray, blood cultures, prostate specific antigen

The initial evaluation of a testicular mass typically involves imaging and tumor marker assessments, making the combination of ultrasound, beta-HCG, and AFP the optimal first tests. Ultrasound is the preferred imaging modality for testicular masses due to its ability to provide detailed information about the mass's characteristic features, such as whether it is solid or cystic, and to differentiate between benign and malignant lesions. It is non-invasive and does not expose the patient to radiation, making it safe and effective for initial assessment. Beta-human chorionic gonadotropin (beta-HCG) and alpha-fetoprotein (AFP) are key tumor markers that can help in the diagnosis and management of testicular cancers, particularly germ cell tumors. Elevated levels of beta-HCG can indicate the presence of non-seminomatous germ cell tumors, while elevated AFP levels are associated with certain types of testicular cancer as well. Checking these serum markers helps not only in diagnosis but also in treatment planning and monitoring recurrence. While other tests mentioned in the various options may play roles in different contexts or stages of evaluating testicular masses, they are not as commonly ordered in the initial evaluation as ultrasound and tumor markers. For example, a CT scan might be used later to assess

8. What is the general treatment for duodenal obstruction due to Crohn's disease after failed medical management?

A. Strictureplasty

B. Gastrojejunostomy

C. Resection with Whipple procedure

D. Duodenojejunostomy

The optimal treatment for duodenal obstruction due to Crohn's disease, particularly after medical management has failed, generally involves bypass procedures, with gastrojejunostomy being a common option. This procedure creates a connection between the stomach and the jejunum, circumventing the obstructed segment of the duodenum. It aims to alleviate the obstruction and restore bowel continuity while minimizing the risk of recurrence associated with Crohn's disease. In cases of Crohn's, the affected bowel may be friable, and there is often a risk of postoperative complications such as strictures or infections. Gastrojejunostomy allows for the passage of food without removing any segments of the intestine that may still have disease activity, thereby preserving bowel length. Other surgical options, such as strictureplasty or resections, may be utilized in different contexts but could carry higher risks of complications or recurrences in patients with extensive Crohn's disease. Resection with the Whipple procedure is more commonly indicated for malignancies or specific non-Crohn's related conditions rather than isolated duodenal obstruction. Duodenojejunostomy, while another bypass option, is less frequently the procedure of choice in this context, as it can be more complex and not

9. What is the recommended treatment for anal canal cloacogenic carcinoma?

A. Surgery only

B. Chemotherapy alone

C. Chemotherapy and radiation therapy

D. Observation only

Cloacogenic carcinoma, which arises from the anal canal and often has features reminiscent of colorectal cancer, typically requires a multimodal treatment approach. The recommended treatment involves chemotherapy and radiation therapy in addition to surgical intervention. This approach is rooted in the need to manage the cancer effectively while considering its potential for lymphatic spread and the involvement of surrounding tissues. Radiation therapy can aid in shrinking tumors and controlling local disease, while chemotherapy can target systemic disease and reduce the risk of recurrence after surgery. The combination of these modalities is essential in providing a comprehensive treatment strategy, especially in the case of locally advanced disease where surgery alone would not adequately address the cancer's potential spread. In contrast, relying solely on surgery may not provide the best outcomes for patients with cloacogenic carcinoma due to the aggressive nature of the disease. Using a comprehensive treatment plan with chemotherapy and radiation therapy before or alongside surgery is crucial for maximizing patient outcomes and should be aligned with the latest clinical guidelines and evidence-based practices.

10. In which patient population is splenectomy associated with significant risk due to thalassemia?

A. Adults over 60

B. Children under 4

C. Pregnant women

D. Teens aged 13-18

Children under 4 are at significant risk when undergoing splenectomy due to the effects of thalassemia. Thalassemia, a blood disorder affecting hemoglobin production, can lead to increased susceptibility to infections, particularly from encapsulated organisms due to functional asplenia or hyposplenism. The spleen plays a vital role in filtering bacteria from the bloodstream and mounting an immune response against infections. In young children, particularly those under four years old, the immune system is still developing, and they are generally more vulnerable to infections. Splenectomy in this age group can greatly diminish their ability to combat infections, which is a significant concern. The risk of severe infections, particularly from encapsulated organisms like Streptococcus pneumoniae and Haemophilus influenzae, increases considerably after the loss of splenic function, especially in a population already compromised by thalassemia. The other age groups, such as adults over 60, pregnant women, and teens aged 13-18, present varying levels of risk, but the very young population is uniquely susceptible due to their immature immune systems and the critical role the spleen plays in protecting against infections early in development. Therefore, splenectomy in children under 4 years old with