

**MERCY HOSPITAL
DEPARTMENT OF
EMERGENCY
MEDICINE
MSIV/PGY1 POST
TEST**

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- 1. Which of the following is NOT a major complication of nasal bone fracture:**
 - a. Uncontrolled epistaxis**
 - b. Malalignment**
 - c. Septal hematoma**
 - d. CSF rhinorrhea**

1. Which of the following is NOT a major complication of nasal bone fracture:

b. Malalignment

Malalignment is not a major consideration in the acute management of nasal bone fractures, and x-rays are often not indicated since they may not demonstrate a fracture and do not change the acute management. In any patient with a suspected nasal fracture, bleeding must be controlled, utilizing direct pressure +/- a topical vasoconstrictor (phenylephrine or 4% cocaine). Clear rhinorrhea suggests fracture through the cribriform plate with resulting CSF leak, which must be urgently corrected.



- **A septal hematoma (seen in the left naris) occurs when blood becomes trapped between the mucosa and septum. If left untreated, this can result in irreversible septal necrosis and saddle nose deformity. Once recognized, a septal hematoma needs to be drained acutely.**

2. Which of the following is MOST indicative of diarrhea due to invasive pathogens:

- a. diarrhea greater than 10 times per day**
- b. stool volume greater than 100 ml**
- c. WBC's in stool**
- d. concomitant vomiting**
- e. gram negative pathogens on stool smear**

2. Which of the following is MOST indicative of diarrhea due to invasive pathogens:

c. WBC's in stool

The presence of WBCs in stool suggests invasion of the bowel wall.

Patients with enteroinvasive diarrhea generally require prophylactic antibiotic therapy. Many patients with invasive diarrhea will appear toxic, have significant abdominal pain and/or tenderness, and may have bloody stools. Patients with self-limited secretory diarrhea due to a toxin or viral infection typically are non-toxic with watery diarrhea.

Since the sensitivity of stool WBCs is only about 80%, reserve this test for patients that have a history and exam that do not clearly suggest an invasive or secretory diarrheal process. Despite some textbook recommendations, antimotility agents are NOT dangerous in invasive diarrhea unless the patient has a history of inflammatory bowel disease.

Stool volume or frequency has no predictive value in distinguishing secretory from invasive diarrhea, and gram negative pathogens are typically normal flora *E. Coli*.

3. A 25 year old male presents after being involved in a motor vehicle accident in which the steering column was bent and the windshield shattered. He is snoring and is unresponsive to painful stimuli with vital signs P 133 R 42 BP 88/P. The most appropriate course of therapy at this time is:

- a. lactated ringer's 20cc/kg bolus**
- b. needle decompression L 2nd intercostal space**
- c. mannitol 1g/kg IV**
- d. cervical spine radiography prior to any definitive maneuvers**
- e. endotracheal intubation**

3. A 25 year old male presents after being involved in a motor vehicle accident in which the steering column was bent and the windshield shattered. He is snoring and is unresponsive to painful stimuli with vital signs P 133 R 42 BP 88/P. The most appropriate course of therapy at this time is:

e. endotracheal intubation

While the patient may ultimately require all the above interventions, snoring and tachypnea indicate respiratory distress. Remember that AIRWAY needs to be managed before BREATHING or CIRCULATION!

4. Upon primary survey, this same patient to has diminished breath sounds on the right and distended neck veins. Trachea appears to be midline. Vital signs are still as above. Your next move would be:

- a. tube thoracostomy**
- b. needle decompression R 2nd intercostal space**
- c. lactated ringer's 20cc/kg bolus**
- d. Pericardiocentesis**
- e. open thoracotomy**

4. Upon primary survey, this same patient to has diminished breath sounds on the right and distended neck veins. Trachea appears to be midline. Vital signs are still as above. Your next move would be:

b. needle decompression R 2nd intercostal space

This patient has a tension pneumothorax.

Although he will ultimately require a chest tube, the initial treatment is to emergently relieve the pressure to restore venous return. This is best performed by using a large (at least 14 gauge) needle or angiocath in the second intercostal space at the mid clavicular line, just SUPERIOR to the third rib (remember the neurovascular bundle lies inferior to the rib).

5. A patient with a laceration to the volar surface of the finger with intact DIP flexion and absent PIP flexion is likely to have lacerated:

a. flexor digitorum superficialis (sublimis)

b. flexor digitorum profundus

c. median nerve

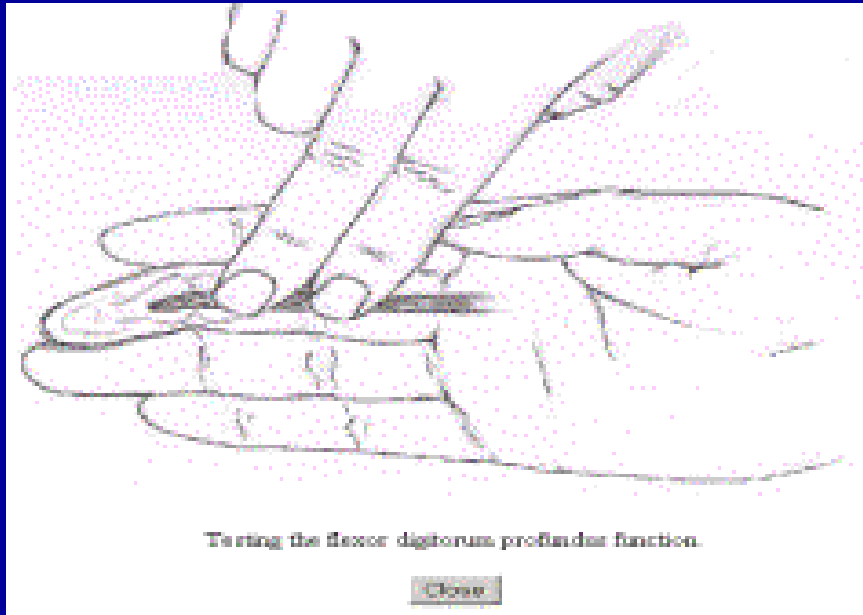
d. ulnar digital nerve

e. digital artery

5. A patient with a laceration to the volar surface of the finger with intact DIP flexion and absent PIP flexion is likely to have lacerated:

a. flexor digitorum superficialis (sublimis)

Neurological, vascular and tendon function must be assessed in any patient with a hand injury, and a knowledge of tendon anatomy, nerve and arterial distribution is essential. Neurological function is typically assessed by 2 point discrimination, and vascular function is typically tested by capillary refill. While dorsal extensor tendon lacerations can often be successfully repaired in the ED, volar flexor tendon lacerations are best managed by a hand surgeon. The superficial tendon lies over the profundus (deep) tendon, then splits proximal to the DIP joint.



- **Superficial tendon function is tested by isolating the finger and testing active flexion at the PIP joint. Profundus function is tested by isolating the DIP joint and testing active flexion at the DIP as illustrated.**

6. The most common pathogen isolated from infection due to cat bites is:

a. Eikenella corrodens

b. Staphylococcus aureus

c. Streptococcus pyogenes

d. Pasteurella multocida

e. "Cat scratch fever" agent

6. The most common pathogen isolated from infection due to cat bites is:

d. *Pasteurella multocoda*

Since they are typically puncture wounds that often occur on the hands, cat bites have a greater propensity to become infected than dog or human bites. *Pasteurella* is a mouth anaerobe that is the most frequently isolated organism from infected cat bites, but staph, strep, and polymicrobial infections are also common.

Infection with *Bartonella henselae* (cat scratch fever agent) is uncommon. Empiric antimicrobial coverage must cover for staph, strep and *Pasteurella* (which is typically penicillin sensitive and not sensitive to first generation cephalosporins like cephalexin).

Cat bites (cont.)

- The treatment of choice for documented infection is amoxicillin/clauvulanate (Augmentin), but strongly consider an IV load with ampicillin/sulbactam (Unasyn). Penicillin allergic patients should be treated with clindamycin plus a fluoroquinolone. For empiric therapy in a noninfected cat bite, since the number needed to treat is approximately 10 and Augmentin is expensive and associated with significant GI side effects, consider using penicillin with either cephalexin or an anti-staphylococcal penicillin. Pastuerella may also be isolated from dog bites, and Eikenella is a mouth anaerobe that may be isolated from human bites (sensitivity similar to Pasteurella). Cat and dog bite wounds to the hand should NOT be closed upon initial presentation, but irrigated, debrided, dressed, treated with prophylactic antibiotics and have delayed primary closure after 3 days of treatment.

7. Brenda Headbanger, a 17 year old female, is brought into the ED by her friends who state she is having "a bad trip." Brenda apparently took some street mescaline, and now is yelling obscenities, striking the staff, throwing equipment, and basically acting like a bad sport. Which of the following agents would be MOST appropriate to improve her behavior:

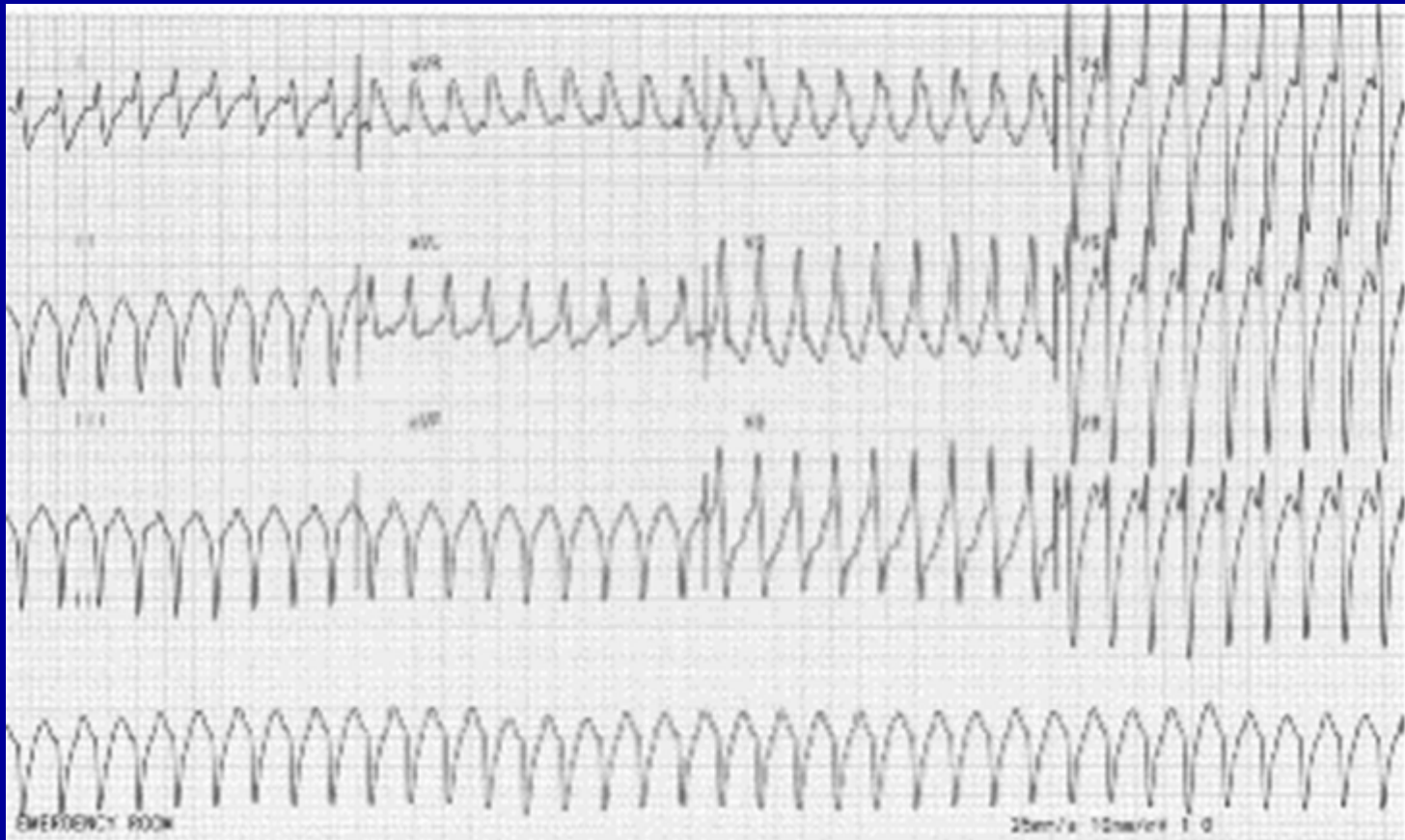
- a. chlorpromazine 100 mg IM**
- b. prochlorperazine 25 mg IM**
- c. lorazepam 2 mg IM**
- d. pancuronium 0.1 mg/kg IV**
- e. morphine sulfate 5 mg IM**

7. Brenda Headbanger, a 17 year old female, is brought into the ED by her friends who state she is having "a bad trip." Brenda apparently took some street mescaline, and now is yelling obscenities, striking the staff, throwing equipment, and basically acting like a bad sport. Which of the following agents would be MOST appropriate to improve her behavior:

c. lorazepam 2 mg IM

Many street drugs have anticholinergic properties, and treating agitation with a phenothiazine (e.g., Thorazine) containing anticholinergic properties may precipitate anticholinergic crisis. Benzodiazepines are therefore the treatment of choice. Droperidol is also occasionally used, but may be associated with lethal cardiac dysrhythmias in rare cases. Paralytics should only be reserved for patients who are at great risk of acutely worsening a known or suspected injury, and then only in conjunction with sedation and skilled airway management.

8. Fred Rodgers, an 82 year old male, presents with a chief complaint of palpitations. Vital signs are within normal limits, and he denies any chest pain or shortness of breath. EKG (shown below) reveals a tachyarrhythmia at 170/min, with QRS duration 0.15 sec: The MOST appropriate agent to use at this time would be:



8. Fred Rodgers, an 82 year old male, presents with a chief complaint of palpitations. Vital signs are within normal limits, and he denies any chest pain or shortness of breath. EKG (shown below) reveals a tachyarrhythmia at 170/min, with QRS duration 0.15 sec: The MOST appropriate agent to use at this time would be:

- a. verapamil 5 mg IV
- b. CaCL₂ 500 mg IV
- c. digoxin 0.5 mg IV
- d. lidocaine 100 mg IV
- e. cardioversion 100 joules

8. Fred Rodgers, an 82 year old male, presents with a chief complaint of palpitations. Vital signs are within normal limits, and he denies any chest pain or shortness of breath. EKG (shown below) reveals a tachyarrhythmia at 170/min, with QRS duration 0.15 sec: The MOST appropriate agent to use at this time would be:

d. lidocaine 100 mg IV

The distinction in wide complex tachycardia (WCT) between supraventricular tachycardia and ventricular tachycardia can be very difficult, even with a 12 lead ECG. Unstable tachycardias require electrical cardioversion and stable tachycardias are treated chemically. Although calcium channel blockers are used to treat SVT, they may result in refractory V-fib in certain patients with VT. The QRS duration in VT tends to exceed 0.14 sec, but this may also occur with SVT. In elderly patients, WCT is often due to VT, and since lidocaine is typically safe (although not effective) in SVT, this is the best choice listed. Amiodarone could also be used for this patient.

9. A 4 year old female presents 1 hour after ingesting 20 extra strength Tylenol tablets. Which of the following INITIAL treatment options is most appropriate:

- a. Syrup of ipecac 30 cc PO**
- b. Activated charcoal 1g/kg PO**
- c. Gastric Lavage**
- d. All of the above**
- e. None of the above**

9. A 4 year old female presents 1 hour after ingesting 20 extra strength Tylenol tablets. Which of the following INITIAL treatment options is most appropriate:

b. Activated charcoal 1g/kg PO

Syrup of ipecac is typically indicated only for the home treatment of poisonings if time to treatment in the ED is delayed (more than 1 hour). It should NEVER be used in caustic or hydrocarbon ingestion due to the risk of esophageal injury and aspiration, respectively. Gastric lavage is associated with several complications including aspiration and mucosal injury, and is typically reserved for life threatening ingestions that present within 1 hour of presentation, particularly in poisonings of substances not adsorbed by charcoal (e.g., lithium, iron). Even with activated charcoal, at most 50% of the toxin will be removed, and all methods of GI decontamination are of no benefit in poisonings that present greater than one hour from the time of ingestion. In an acetaminophen ingestion of greater than 140 mg/kg, empiric antidote therapy with N-acetylcysteine should be initiated.

10. All of the following are causes of hyperkalemia EXCEPT

a. acidosis

b. renal failure

c. insulin

d. digitalis toxicity

e. adrenal insufficiency

10. All of the following are causes of hyperkalemia EXCEPT

c. insulin

Insulin will temporarily drive potassium into cells, and is often used with glucose in the initial management of severe hyperkalemia.

Other treatments include calcium chloride, sodium bicarbonate, and sodium polystyrene (Kayexelate).

- 11. Which of the following best determines response to beta-adrenergic therapy in the asthmatic:**
- a. heart rate**
 - b. disappearance of wheezes**
 - c. peak expiratory flow measurements**
 - d. oxygen saturation**
 - e. pCO₂**

11. Which of the following best determines response to beta-adrenergic therapy in the asthmatic:

c. peak expiratory flow measurements

PEFR is the most objective ED measurement of degree of airflow obstruction in the asthmatic patient. Wheezes may be diminished with diminished air flow and may increase as the obstruction is relieved. Oxygen saturation may paradoxically decrease early in the treatment phase, as airflow to less perfused lung segments is restored. Elevation of the PCO₂ is a late finding, indicating respiratory failure.

12. A 58 year old female presents one week after abdominal surgery for metastatic cervical cancer with left sided chest pain and dyspnea. What is the best diagnostic strategy?

- a. Sprial CT of the chest with IV contrast**
- b. D-Dimer, CT if positive**
- c. Doppler studies of the lower extremities**
- d. V/Q scan**
- e. EKG and troponin**

12. A 58 year old female presents one week after abdominal surgery for metastatic cervical cancer with left sided chest pain and dyspnea. What is the best diagnostic strategy?

a. Sprial CT of the chest with IV contrast

This patient has a high pretest probability of acute pulmonary embolism, therefore should undergo CT scan of the chest. D-dimer should be only used in low risk patients, and is likely to be falsely positive in patients with carcinoma, pregnancy and in the elderly. CT scanning is not 100% sensitive for acute pulmonary embolus, so in patients who have a high pretest probabily and a negative scan, further workup including Doppler studies is indicated.

13. All of the following are complications of massive transfusion EXCEPT:

- a. hypothermia**
- b. hyperkalemia**
- c. hypocalcemia**
- d. pulmonary edema**
- e. hypertonic dehydration**

13. All of the following are complications of massive transfusion EXCEPT:

e. hypertonic dehydration

Hypothermia may occur in massive transfusion due to the infusion of cold blood products. Some red cell lysis is typical in stored blood, and approximately 40Meq of K is infused with each unit of PRBC's. Citrate is used as a preservative, which ionizes calcium and may cause hypocalcemia. It is therefore essential to monitor the QT segment on the ECG or rhythm strip if multiple units of blood are transfused. Pulmonary edema may occur due to volume overload. Hypertonic dehydration does not typically occur as a result of transfusion.

14. The *most* vital part of the ophthalmologic exam in patients with ocular complaints is:

- a. visual acuity**
- b. fluorescein staining**
- c. tonometry**
- d. slit lamp examination**
- e. fundoscopy**

14. The *most* vital part of the ophthalmologic exam in patients with ocular complaints is:

a. visual acuity

Although all the above are important parts of an eye exam, consider visual acuity as the 5th vital sign in any patient with ocular complaints, as most serious acute ophthalmologic disorders will present with alteration of the visual acuity.

15. Patients presenting to the Emergency Department complaining of "The worst headache of my life" and left arm numbness should undergo:

a. computed tomography

b. lumbar puncture

c. a; if negative, b

d. b; if negative, a

e. none of the above

15. Patients presenting to the Emergency Department complaining of "The worst headache of my life" and left arm numbness should undergo:

c. a (computed tomography); if negative, b (lumbar puncture)

Subarachnoid hemorrhage must be ruled out in this patient, as missing this diagnosis may result in death or permanent disability. Studies have shown that many patients with high grade SAH have seen a physician in the days prior to their devastating event with a headache due to a “warning leak” that was missed, and our challenge is to capture these patients and intervene before a major bleed occurs. Although severity of the headache is a risk for a serious headache disorder, sudden onset is more predictive. CT scanning is sensitive across the spectrum of SAH, but sensitivity is lower with minor bleeding, thus must be followed by LP (the definitive test) in patients with a suspicion for SAH. Some authors advocate skipping CT and going directly to LP, however this should be reserved for stable patients without focal findings on exam.

16. A 76 year old male with a history of hypertension presents with back pain radiating down his left leg, which began while he was gardening. There is no tenderness to back palpation of movement of his legs. Vital signs are unremarkable. The test of choice is:

a. lumbar spine radiography

b. Abdominal CT scan

c. MRI

d. Abdominal Ultrasound

e. none of the above

16. A 76 year old male with a history of hypertension presents with back pain radiating down his left leg, which began while he was gardening. There is no tenderness to back palpation of movement of his legs. Vital signs are unremarkable. The test of choice is:

b. Abdominal CT scan

A leaking abdominal aortic aneurysm must be considered in any elderly hypertensive patient that presents with either abdominal or back pain. Worrisome clues in this patient are the history of hypertension, advanced age, and no reproducible back tenderness. A pulsatile mass is palpable only in a minority of patients with this disorder. The diagnostic test of choice is an abdominal CT scan. Ultrasonography is useful at the bedside to confirm the presence of an aneurysm, but is less sensitive in determining a leak.

17. A 24 year old male nonsmoker with no past medical history presents with a cough. Some inspiratory wheezes are noted on examination and CXR shows no infiltrate. Which is the most appropriate therapy?

- a. azithromycin 500 mg, then 250 mg q day X 5**
- b. albuterol MDI**
- c. azithromycin plus albuterol**
- d. azithromycin, albuterol and prednisone**
- e. albuterol and prednisone**

17. A 24 year old male nonsmoker with no past medical history presents with a cough. Some inspiratory wheezes are noted on examination and CXR shows no infiltrate. Which is the most appropriate therapy?

b. albuterol MDI

Acute bronchitis in otherwise healthy adults is caused by viruses in over 95% of cases. Purulence of sputum is not a reliable indicator of bacterial infection. Routine antibiotic treatment for acute uncomplicated bronchitis has not been found to be beneficial, and injudicious use is associated with the increased prevalence of bacterial resistance. The literature supports use of beta-agonist bronchodilators in these patients. Antitussives *may* have a modest beneficial effect. Steroids are only indicated in bronchitis in the setting of chronic inflammatory changes, such as asthma.

18. A 17 year old female presents with upper abdominal pain. Vital signs are stable. Which are NOT indicated in her initial workup:

a. B-HCG

b. urinalysis

c. pelvic exam

d. chest auscultation

e. all the above are indicated

18. A 17 year old female presents with upper abdominal pain. Vital signs are stable. Which are NOT indicated in her initial workup:

e. all the above are indicated

The differential diagnosis is wide, but includes GI sources, biliary sources, pyelonephritis, lower lobe pneumonia. Pregnancy must be considered. Fitz-Hugh- Curtis syndrome is a perihepatitis that may occur as a result of pelvic inflammatory disease, so do not forget to do a pelvic exam in women of childbearing age that present with upper abdominal pain.

19. A three week old infant presents with fever of 101 F. Physical exam is unremarkable. The child is active and appears well. Workup should consist of:

- a. close follow up, nothing further**
- b. discharge on PO amoxicillin**
- c. CXR, urinalysis with culture, blood C&S, outpatient follow up**
- d. CXR, urinalysis with culture, blood C&S, lumbar puncture, hospital admission, IV antibiotics**
- e. none of the above**

19. A three week old infant presents with fever of 101 F. Physical exam is unremarkable. The child is active and appears well. Workup should consist of:

d. CXR, urinalysis with culture, blood C&S, lumbar puncture, hospital admission, IV antibiotics

Serious bacterial infections (pneumonia, meningitis, bacteremia) may occur in young infants without any findings on examination. In infants less than 4 weeks with fever, a full septic workup including LP, IV antibiotics and hospital admission is required. In the 4 to 8 week age group, outpatient management is acceptable if the child appears nontoxic, has a negative initial workup including normal CBC, and 24 hour follow up can be assured.

20. Diabetic ketoacidosis may be associated with all of the following EXCEPT:

- a. myocardial infarction**
- b. hyperkalemia**
- c. abdominal pain**
- d. normal anion gap acidosis**
- e. hyperventilation**

20. Diabetic ketoacidosis may be associated with all of the following EXCEPT:

d. normal anion gap acidosis

DKA may be precipitated by myocardial infarction. Nonspecific abdominal pain may be a presenting symptom. Hyperventilation occurs as a physiologic response to the acidosis, and the patient's breath may have a fruity odor. Due to the acidosis (HIGH anion gap), hyperkalemia is typically seen from extracellular shift of potassium, although the patient may be total body potassium depleted. Potassium levels must be closely monitored during treatment, as correction of the acidosis and insulin infusion drives potassium into cells. Potassium may need to be added to fluid infusion during DKA treatment, and this needs to be done early if the potassium level is normal or low. Remember that several liters of normal saline may be needed within the first several hours to successfully treat this disorder. Phosphate levels should not be corrected, and will typically normalize with hydration.

21. Patients presenting to the Emergency Department with a depressed level of consciousness should be considered to receive all the following on their initial assessment EXCEPT:

a. naloxone

b. glucose

c. folate

d. thiamine

e. patients should receive all the above

21. Patients presenting to the Emergency Department with a depressed level of consciousness should be considered to receive all the following on their initial assessment EXCEPT:

c. folate

In patients who present with an altered level of consciousness, hypoglycemia must be considered and rapidly corrected to prevent neuronal damage. These patients need a bedside glucose check but if not immediately obtainable empiric D50 should be given. Symptomatic hypoglycemia may occur in nondiabetic patients, and the patient may simply have a nonspecific alteration in consciousness. Thiamine should also be given prior to glucose infusion due to the theoretical risk of precipitating Wernicke's encephalopathy. Opioid overdose must also be considered, which can be rapidly reversed with naloxone if suspected. Folate is not mandatory, as deficiency will not present with altered level of consciousness, however administering this vitamin is sometimes used in alcoholic or elderly patients to treat suspected nutritional deficit

22. A 3 year old male presents with fever and left ear pain. Examination reveals a bulging, immobile left tympanic membrane. Assuming no allergies, the most appropriate agent to use for this condition is:

- a. azithromycin (Zithromax)**
- b. amoxicillin**
- c. levofloxacin (Levaquin)**
- d. cephalaclor (Ceclor)**
- e. erythromycin**

22. A 3 year old male presents with fever and left ear pain. Examination reveals a bulging, immobile left tympanic membrane. Assuming no allergies, the most appropriate agent to use for this condition is:

b. amoxicillin

Acute otitis media is frequently viral in origin, however since bacterial cases also occur, empiric antibiotic therapy is typically employed in the US. The most common bacterial cause is currently pneumococcus and nontypable *H. influenzae*, however this may be changing due to widespread childhood pneumococcal vaccination. Amoxicillin is still considered first line therapy, however recent recommendations are to double the dose to 80 mg/kg/day in order to eradicate pneumococci with relative insensitivity to penicillin (higher doses will exceed MIC's in the middle ear). The use of more expensive antibiotics should be reserved for refractory cases that are suspected to be due to persistent bacterial infection. Although marketed for acute otitis media, the resistance to azithromycin is increasing. Due to the potential risk of growth plate abnormalities, fluoroquinolones should not be used in patients under 18 years of age. It is important to note that children may have persistent effusions after an episode of otitis media, which should NOT be treated with antibiotics.

23. All the following patients should have electrolyte determination in the emergency department EXCEPT :

- a. known seizure disorder**
- b. on diuretics**
- c. prolonged diarrhea**
- d. altered mental status**
- e. all the above should have electrolyte determination**

23. All the following patients should have electrolyte determination in the emergency department EXCEPT :

a. known seizure disorder

Clinically significant electrolyte disturbances may occur in patients on diuretics and with severe protracted volume loss due to vomiting and/or diarrhea. In certain patients, particularly the elderly, electrolyte abnormalities may present with nonspecific alteration of the mental status (especially with hypernatremia or hyponatremia). Seizures themselves do not cause clinically significant electrolyte abnormalities. In the patient with a known seizure disorder who presents with a seizure and has reverted to their usual mental status, a serum glucose and anticonvulsant level is all that is typically required.

24. The MOST IMPORTANT mainstay of asthma therapy is to treat

- a. recurrent bronchospasm**
- b. nocturnal dyspnea**
- c. periodic hypoxia**
- d. chronic inflammation**
- e. ventilation-perfusion mismatch**

24. The MOST IMPORTANT mainstay of asthma therapy is to treat

d. chronic inflammation

Asthma is a chronic inflammatory disease, and the basis of chronic therapy is to not to treat the periodic exacerbations, but the chronic inflammation. Inhaled steroids should be part of the routine therapy for patients with asthma, and patients with asthma seen in the ED not on steroid therapy should have this initiated upon ED discharge.

25. Which of the following fractures is demonstrated?



- **A. Salter I**
- **B. Salter II**
- **C. Salter III**
- **D. Salter IV**
- **E. Salter V**

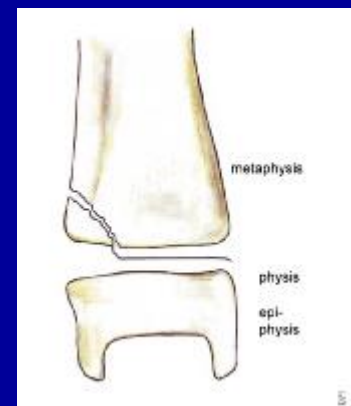
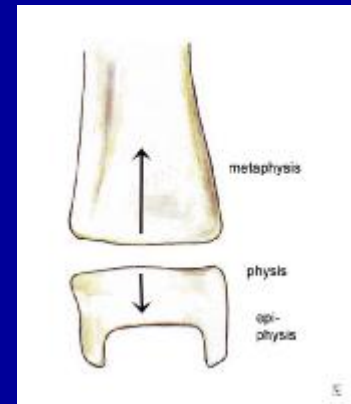
25. Which of the following fractures is demonstrated?



C. Salter III

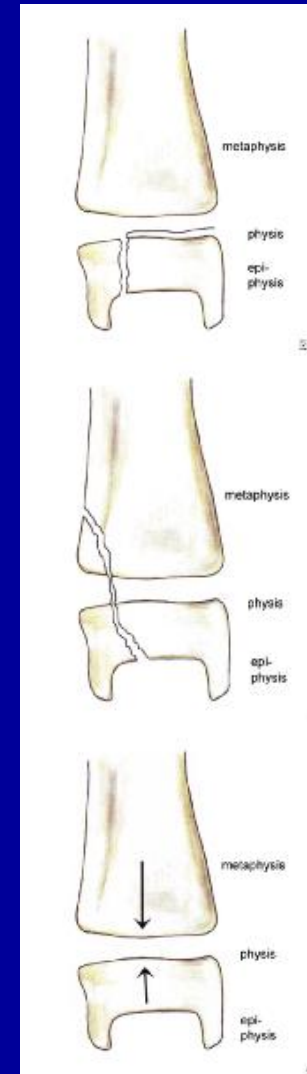
Salter-Harris Fractures

- **I: Separation of physis**
 - May not be radiographically apparent
 - Good prognosis
- **II: Metaphysis and physis**
 - Most common
 - Good prognosis



Salter-Harris Fractures

- **III: Epiphysis and physis**
 - Poorer prognosis
- **IV Metaphysis and physis**
 - May have consequent growth abnormality
- **V: Crush of physis**
 - Worst prognosis



26. All of the following are required when initiating thrombolytic therapy for acute MI EXCEPT:

a. aspirin

b. heparin

c. rectal exam

d. morphine

e. all the above are needed

26. All of the following are required when initiating thrombolytic therapy for acute MI EXCEPT:

d. morphine

In patients receiving thrombolytic therapy for acute MI, active internal bleeding must be excluded, therefore a rectal exam is mandatory. All these patients must also receive aspirin and heparin, and should also receive beta blockers unless contraindicated. While morphine sulfate is often effective for pain control it has no effect on overall mortality and is best used for its analgesic purposes when needed.

27. When should antibiotic therapy for suspected meningitis be initiated?

- a. when the cultures return**
- b. as soon as the lumbar puncture is performed**
- c. within 4 hours of presentation to the ED**
- d. within 24 hours of presentation to the ED**
- e. as soon as the gram stain reveals suspected organism**

27. When should antibiotic therapy for suspected meningitis be initiated?

b. as soon as the lumbar puncture is performed

In patients with suspected bacterial meningitis, antibiotics must be started as soon as possible as delays are associated with increased morbidity. In the ED this typically means as soon as spinal fluid is obtained, antibiotics are started. If the lumbar puncture must be delayed (e.g., due to CT), empiric antibiotics still must not be withheld, and lumbar puncture within a few hours of the first dose should still reveal the suspected organism.

28. Most evidence suggests that penicillin for acute streptococcal pharyngitis

- a. decreases the incidence of rheumatic fever**
- b. decreases the incidence of glomerulonephritis**
- c. results in a greater cure rate of this disease**
- d. all of the above**
- e. none of the above**

28. Most evidence suggests that penicillin for acute streptococcal pharyngitis

a. decreases the incidence of rheumatic fever

Antibiotic treatment for streptococcal pharyngitis has been associated with SLIGHT reductions in the duration of acute illness, but is not curative. The major reason to treat streptococcal pharyngitis is to decrease the incidence of post streptococcal acute rheumatic fever, although this is currently a rare illness. Antibiotic treatment does not decrease the incidence of post streptococcal glomerulonephritis. Penicillin is that antibiotic of choice, and more expensive antibiotics should only be used in penicillin-allergic patients. There have been recent reports of erythromycin-resistant group A strep, which may be due to injudicious use of macrolide antibiotics to treat acute pharyngitis. Antibiotics have NOT been shown to be beneficial in non-streptococcal pharyngitis.

29. Which of the following is NOT true regarding ketorolac (Toradol) at a dose of 60 mg IM?

- a. cost of \$7.00 to pharmacist**
- b. may cause gastrointestinal distress**
- c. as effective as escalating doses of morphine**
- d. preferred over opioids in elderly patients**
- e. c & d**

29. Which of the following is NOT true regarding ketorolac (Toradol) at a dose of 60 mg IM?

e. c & d

Ketorolac is currently the only injectable NSAID on the market. Its mechanism of action and side effect profile is similar to other NSAIDs. In comparative studies, its analgesic effects are similar to other NSAIDs administered orally. NSAIDs have a ceiling effect on analgesia, whereas opioids provide *more* analgesia with greater doses (although more side effects). NSAIDs, even in single doses, may cause severe side effects, and the elderly are most susceptible. Since it is also expensive and requires a painful injection, ketorolac is best reserved for patients in which anti-prostaglandin therapy is essential to treat the painful condition and the patient cannot tolerate oral therapy (e.g., dysmenorrhea, biliary colic, renal colic AND unable to tolerate PO)

30. In which of the following traumatic arrest victims is immediate thoracotomy needed?

- a. motor vehicle accident victim who arrests in the ED**
- b. stab wound to the chest, full arrest at the scene**
- c. gunshot wound to the heart, loses pulses in the ED**
- d. b & c**
- e. all the above**

30. In which of the following traumatic arrest victims is immediate thoracotomy needed?

c. gunshot wound to the heart, loses pulses in the ED

Emergency thoracotomy has been only shown to improve survival in PENETRATING trauma patients who initially have signs of life, then sustain a cardiac arrest.

31. In which immobilized blunt trauma patient is cervical radiography NOT absolutely necessary?

a. acute delirium

b. ethanol intoxication

c. concomitant femur fracture

d. diabetic

e. all the above require cervical spine radiography

31. In which immobilized blunt trauma patient is cervical radiography NOT absolutely necessary?

d. diabetic

The NEXUS-1 study validated a clinical decision rule for cervical spine radiography. Adult patients may safely be excluded from radiography provided they have no midline cervical tenderness, no focal neurologic deficit, normal alertness, no intoxication, and no painful, distracting injury. Diabetes alone is not an indication for cervical radiography.

32. True or False: A patient with RLQ pain, a normal leukocyte count and no vomiting has a less than <1% likelihood of acute appendicitis.

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- False! In population-based studies, a higher proportion of patient with acute appendicitis have elevation of the WBC count and/or a left shift, vomiting or anorexia, but a significantly high number of patients with acute appendicitis have NONE of these findings. Bottom line: Do not use the lack of vomiting or leukocytosis in patients with RLQ pain to exclude the possibility of acute appendicitis.**

33. True or False: Serum glucose determination is necessary in ALL patients who present to the Emergency Department after a seizure.

33. True or False: Serum glucose determination is necessary in ALL patients who present to the Emergency Department after a seizure.

- **True.** As mentioned earlier, there are no reliable clinical signs to exclude hypoglycemia and patients with known seizure disorder may seize as a result of hypoglycemia.
- **Bottom line:** Always check a serum glucose and anticonvulsant level (if on anticonvulsant in which serum levels require monitoring) in ED patients with a seizure disorder who present with seizures.

34. True or False: Patients who present to the Emergency Department after prolonged, unsuccessful ACLS prehospital resuscitation should have resuscitation efforts continued in the Emergency Department, as a significant proportion may be potentially resuscitated.

- 34. True or False: Patients who present to the Emergency Department after prolonged, unsuccessful ACLS prehospital resuscitation should have resuscitation efforts continued in the Emergency Department, as a significant proportion may be potentially resuscitated.**
- False! The likelihood of successful resuscitation to hospital discharge alive is essentially zero with prolonged unsuccessful resuscitation attempts.**
Bottom line: People who come in dead tend to stay dead.

35. True or False: The most reliable clinical test to confirm infection with group A strep is the bedside rapid streptococcal antigen test.

35. True or False: The most reliable clinical test to confirm infection with group A strep is the bedside rapid streptococcal antigen test.

- **False.** This is not as simple as you think. As mentioned earlier, antibiotics are only indicated in pharyngitis if the causative organism is group A strep, and are primarily used to lower the risk of developing rheumatic fever. Since most causes of pharyngitis are viral in origin, there is frequently interest in diagnosing streptococcal infection. Rapid bedside testing is only about 80% sensitive for this organism. Cultures are more sensitive but like rapid testing they are not 100% specific for infection, since a carrier state is common and the mere presence of streptococci does not prove acute infection with this organisms. The most reliable test to confirm acute infection is obtaining anti-streptolysin titers, which is rather impractical.

- **Various clinical scoring systems have been used, which may raise or lower the suspicion for strep infection in an individual patient. The risk is higher in patients with exudative pharyngitis, fever, tender anterior cervical lymphadenopathy and no other findings to suggest a viral syndrome.**
- **Bottom line: If it looks like strep, treat it; if it doesn't, don't treat it; if you are unsure, do a rapid test as a piece of information to either raise or lower your suspicion in an individual patient. Cultures may be obtained in the office, but they are expensive and follow-up on positive cultures is frequently difficult in the ED population.**

36. True or False: Dexamethasone should be administered with antibiotics in meningitis to prevent neurological sequelae.

36. True or False: Dexamethasone should be administered with antibiotics in meningitis to prevent neurological sequelae.

- **True. Dexamethasone has been shown to prevent neurological sequelae (typically deafness), primarily in children with meningitis caused by *H. influenzae* type B but may also be beneficial in adults and other causes of meningitis and in adults is unclear. Since the theoretical mechanism is attenuation of the inflammatory cascade which occurs after bacteria are killed by antibiotics, dexamethasone should be given just before or with the first antibiotic dose. Bacterial meningitis may become a rare disease if widespread immunization against pneumococcus and meningococcus is successful.**

37. True or False: High dose steroids are useful to help functional recovery in severe head trauma.

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• **False.**

High dose steroids have been associated with better long term neurologic outcomes in patients with spinal cord trauma if they are started within 8 hours of injury. However this is controversial since in comparative studies the overall benefit was minor and of marginal clinical significance. However, since these injuries can be devastating, it is considered standard of care to initiate high dose steroid treatment (typically starting with a loading dose of 5.4 mg/kg of methylprednisolone) when a patient is found to have a spinal cord injury. Similar studies have failed to show any benefit of steroids in traumatic brain injury

38. True or False: Nonnarcotic analgesics and opioids have a synergistic effect when used together to treat pain.

38. True or False: Nonnarcotic analgesics and opioids have a synergistic effect when used together to treat pain.

- **True! Nonnarcotic analgesics (NSAIDs, Tylenol) are also called peripheral analgesics, as they act at the site in which pain initiates. Opioid analgesics are often called central analgesics, as they modulate the CNS response to a painful stimulus. There is clinical evidence to support the notion that treating pain at both peripheral and central sites will result in a greater analgesic effect than treating pain at one site alone. Many oral opioid combination products (Vicodin, Percocet, etc.) take advantage of this effect, and the use of a combination product will allow a lower dose of opioid to be used to give a specific analgesic effect.**

Bottom Line: Consider using both opioids and nonnarcotic analgesics together when treating acute pain.

39. True or False: All patients with a foreign body sensation in the throat need a workup to determine if a foreign body is present.

39. True or False: All patients with a foreign body sensation in the throat need a workup to determine if a foreign body is present.

- **True.** Although mucosal injury may give the patient a foreign body sensation after the foreign object has passed, it is up to the clinician to determine if an object is present, as missing a retained foreign body may result in aspiration or esophageal perforation. The use of viscous lidocaine may provide symptomatic relief, but may give the clinician a false sense of security as the mucosa can be anesthetized with the foreign object still present. Many foreign objects, including many fish bones are NOT radioopaque. The diagnostic technique of choice is visualization, often by fiberoptic nasopharyngoscopy or endoscopy.
- **Bottom Line:**
If the patient feels as there is a foreign body present, it is until you definitively prove it isn't.

40. A 27 year old female G4, P3, 8 weeks pregnant, presents with abdominal pain and vaginal bleeding. Heart rate is 120, quantitative B-HCG is 4280 and transvaginal ultrasound shows no gestational sac within the uterus. The most appropriate next step would be:

- A. Rest, follow up in 3 days**
- B. Laparoscopy**
- C. Abdominal CT**
- D. D & C**
- E. Repeat ultrasound in 2 days**

40. A 27 year old female G4, P3, 8 weeks pregnant, presents with abdominal pain and vaginal bleeding. Quantitative B-HCG is 4280 and transvaginal ultrasound shows no gestational sac within the uterus. The most appropriate next step would be:

- B. Laparoscopy**

This patient has an ectopic pregnancy. Once the HCG level rises above 1500, an intrauterine sac should be clearly evident on transvaginal ultrasonography. While some 'rule out ectopics' are managed with rest, repeat Quantitative HCG in 48 hours and some are treated medically with methotrexate, tachycardia suggests rupture, so the most appropriate mode of action for this patient is laparoscopic removal.

CONGRATULATIONS! You have completed the post test. Please print this page, sign and print your name, and return to Linda Packard in the DEM office.

Signature _____

Name _____