**OEC Chapter 23: Chest Trauma**

**Overview:** This chapter is brief, but the injuries discussed here seem to be of special interest to OEC test-making folk. Management for each of these emergencies is similar, but pay particular attention to the signs and symptoms associated with each. Recommended to make flashcards for the various types of chest injuries.

**Major Points:**

* Assessment of patients with suspected chest injury is the same as for any other trauma patient. Begin with a scene size up, and assess the mechanism of injury to determine the forces involved.
* Chest injuries often associated with multisystem trauma and can very quickly progress into a life-threatening situation
* Chest injuries associated with respiratory distress or hypotension (low blood pressure) are often **load-and-go** situations. Recall that a sudden drop in blood pressure is considered a late sign of shock so at this point the focus should be on transporting ASAP.
* Injuries to the chest are either described as open or closed. Internal chest injuries can also be caused by sudden deceleration forces (think car crashes).
* The majority of this chapter focuses on identification of the various types of chest injuries:
  + **Contusions**: aka bruises. Can result from minor blunt trauma. Pulmonary contusions and myocardial contusions are two internal injuries that can result in rapid destabilization of a patient’s condition.
  + **Fractures:** ribs, clavicle and sternum. Can present with tenting (part of your clavicle sticking out) and paradoxical motion (unequal rise and fall of the chest associated with broken ribs...this will look really weird and you’ll know that something ain’t right). Maintain a high index of suspicion for internal bleeding.
  + **Aortic dissection and rupture:** aorta especially susceptible to deceleration injuries. Pain is sudden and stabbing compared to the slow pressure buildup of a myocardial infarction. Pain may radiate to the back between the shoulder blades. Patient will likely show signs of late-stage shock.
  + **Pneumothorax:** collection of air in the pleural space (part inside the membranes on the surface of each lung). Tension pneumo happens when enough air accumulates that it compresses the lung. Signs to watch out for: shortness of breath, jugular vein distention (popping neck veins), tracheal deviation. These last two are good things to look for when performing a trauma assessment.
  + **Hemothorax**: similar to pneumo, but with blood instead of air. High risk of hypovolemic shock
  + **Pericardial Tamponade:** internal bleeding in the sac that surrounds the heart. Puts pressure on heart and prevents it from filling properly. Presents with *narrowing pulse pressure*.
  + **Commotio cordis:** Blunt trauma to chest messes with heart’s electrical vibe. Causes V-Tach or V-Fib. Often affects young, healthy patients with no history of heart conditions. CPR and rapid defibrillation
  + **Traumatic asphyxia:** pressure on chest wall prevents normal expansion

* Perform chest assessment using the **LAP method: L**ook, checking for indications of  musculoskeletal injuries using DCAP-BTLS. **A**uscultate (listen to) lung sounds, checking for gurling, wheezing or grunting. **P**alpate by applying inward pressure to the lateral walls of the rib cage while asking the pt to breathe in deeply.
* Management with most chest injuries: **LOAD AND GO:** ABCDs, high flow O2, keep warm, rapid transport.
  + Management for open chest injuries (“sucking” chest wounds): apply occlusive dressing. Tape on three sides, leaving open end on the bottom
  + Leave impaled objects in place and stabilize with a donut wrap

**Must Study:**

* For practical patrolling knowledge, it is often less important to know the specific mechanisms of these injuries than the management techniques within our scope of practice. In almost all cases, your intervention will be limited to providing high flow O2 and immediately transferring to ALS.
* With that said, the injuries presented in this chapter are absolutely necessary to know for the OEC exam. They especially tend to ask about the classic signs and symptoms of each, which is critical information that you may need to relay to higher levels of care.
* Memorize all of the chest injuries and their associated signs and symptoms. Pay particular attention to hemothorax, pneumothorax, and pericardial tamponade.
* Section on anatomy and physiology of the lungs and heart is covered pretty extensively in Chapter 6, so you could probably skim this.
* Figure 23-5 Good visualization of an aortic aneurysm progressing into a dissection
* Figures 23-6 and 23-8 Pneumo and tension pneumo
* Figure 23-11 Signs of pericardial tamponade: distended neck veins, muffled heart sounds, narrowing pulse pressure (known as the *Beck Triad*)
* Figure 23-14 Application of an occlusive dressing. Notice how the responder leaves the bottom side open to allow for the drainage of any fluids
* Table 23-2 Basically all the management options you need to know

**Recommended Chapter Questions:***5, 6, 8, 10*

**Key Terms:** *Aneurysm, aortic rupture, closed chest injury, commotio cordis, flail chest, hemoptysis, hemothorax, myocardial contusion, open chest injury, paradoxical motion, pericardial tamponade, pulmonary contusion, tension pneumothorax, traumatic asphyxia*