

## **PRACTICE GUIDELINES: BLUNT CARDIAC INJURY**

### OBJECTIVES:

1. Define the basis of the clinical diagnosis of blunt cardiac injury.
2. Define appropriate laboratory studies to diagnose blunt cardiac injury.
3. Provide guidelines for appropriate treatment of potential blunt cardiac injury.

### DEFINITION:

Blunt cardiac injury: A bruise of the myocardial muscle that may result in temporary arrhythmias or loss of contractile function.

### GUIDELINES:

1. Consider the possibility of blunt cardiac injury in the following situations:
  - a. Severe decelerating blunt chest trauma.
  - b. Multiple anterior rib fractures.
  - c. Severe anterior chest pain suggesting rib fractures or chondral fractures.
  - d. Fractured sternum.
  - e. Seatbelt contusion across the anterior chest.
  - f. Severe bilateral pulmonary contusions.
2. Follow the ABC's and treat all chest injuries according to the diagnostic findings.
3. Obtain chest X-ray looking for any of the above findings.
4. Obtain EKG.
5. Consider EKG abnormal with the following findings:
  - a. Unexplained tachycardia (rate >120).
  - b. Ventricular arrhythmias – PVC's, bigeminy.
  - c. Atrial arrhythmia - multifocal PAC's, new atrial fibrillation or flutter.
  - d. Right bundle branch block.
  - e. New onset Q-waves.
  - f. New onset ST-T wave abnormality.
6. Admit all patients with abnormal EKG or normal EKG with elevated troponin in appropriate mechanism should have telemetry for at least 24 hours.
7. Patients with normal EKG and normal troponin may be safely discharged home
8. Obtain repeat EKG after 12 – 24 hours.
9. Consider transthoracic (or, if available, transesophageal) echocardiogram for the following:
  - a. Unexplained hypotension suggestive of cardiac failure.
  - b. Abnormal EKG.
  - c. Persistent arrhythmias from telemetry (>24 hours).
10. Patient with blunt cardiac injury may undergo anesthesia if properly monitored.

11. CPK isoenzyme are not useful for predicting blunt cardiac injury. .
12. If patient has persistent myocardial dysfunction:
  - a. Obtain cardiology consult.
  - b. Treat arrhythmias.
  - c. Treat any cardiac failure.
12. Prognosis
  - a. Asymptomatic Cardiac arrhythmias and dysfunction usually resolve after 24 hours
  - b. If persistent, consider coronary artery injury
  - c. Repeat echocardiogram and possible cardiac catheterization may be indicated.