This document was created by Alex Yartsev (dr.alex.yartsev@gmail.com); if I have used your data or images and forgot to reference you, please email me.

Cardiac Tamponade

- **Hard to pick up: the history of the injuries will give you best indications.**
- **PENETRATING INJURIES, eg. stingray barb stabwounds, are the biggest risk factor**
- **BLUNT INJURIES can cause tamponade because of vessel disruption**

Beck's Triad

- **increasing venous pressure –** distended neck veins
- **decreasing arterial pressure**
- **muffled heart sounds**

- Hmm, the neck veins wont be distended in a hypovolemic trauma victim
- The heart sounds will not be easily audible in a noisy ED resus bay
- Tension pneumothorax can mimic all of the above, esp. on the left side.

Kussmauls Sign

- **When breathing spontaneously, venous pressure RISES with inspiration**
- **This means, venous blood cant really return to the heart; when the intrathoracic pressure decreases in inspiration, instead of filling the right ventricle the venous blood pools in the JVP (it has nowhere to go, because the tamponade prevents filling of the floppy right ventricle)**

- **To get a proper Kussmauls sign, you need to see the JVP (not likely in a stiff-collared patient) or a CVP measuring probe (unlikely to be available during the primary survey)**

FAST ultrasound echo:

- **assesses the "collapsing" right ventricle**
- **may show an actual fluid layer in the pericardium**
- **HAS A 5-10% FALSE NEGATIVE RATE.**

- **If there is a surgeon on hand, the patient needs to go to theatre for definitive management of this.**
- **If there is no surgeon, pericardicentesis can relieve the tamponade TEMPORARILY. Its not a definitive treatment.**
- **You may try to insert a flexible catheter into the pericardial sack while waiting for surgery**

YOU NEED TO GIVE FAST FLUIDS. It wont fix anything, but it might maintain the failing venous return.

Summarized from GMP medical school lectures and the ATLS handbook - many parts were treated unfairly brifly, or were entriley omitted- I strongly recommend you read the actual ATLS manual, and attend their excellent course.