4-16-2013

Commotio Cordis

Trixie Russell  
_Southwestern Oklahoma State University_

Jasmine Weir  
_Southwestern Oklahoma State University_

Randa Castleberry  
_Southwestern Oklahoma State University_

Kris Mahlock  
_Southwestern Oklahoma State University, kris.mahlock@swosu.edu_

Abstract

What is it? Commotio Cordis is a "Cardiac Concussion" or a disturbance of the heart. It is a non-penetrating, precordial blow to the chest that causes cardiac arrest and tachycardia/ fibrillation. This is unassociated with any structural damage to the heart, ribs, or sternum.

Follow this and additional works at: https://dc.swosu.edu/cpgs_nahs_hs_student

Recommended Citation

Russell, Trixie; Weir, Jasmine; Castleberry, Randa; and Mahlock, Kris, "Commotio Cordis" (2013). _Student Research_. 1.  
https://dc.swosu.edu/cpgs_nahs_hs_student/1

This Poster is brought to you for free and open access by the Health Science at SWOSU Digital Commons. It has been accepted for inclusion in Student Research by an authorized administrator of SWOSU Digital Commons. An ADA compliant document is available upon request. For more information, please contact phillip.fitzsimmons@swosu.edu.
What is it? Commotio Cordis is a “Cardiac Concussion” or a disturbance of the heart. It is a non-penetrating, precordial blow to the chest that causes cardiac arrest and tachycardia/fibrillation. This is unassociated with any structural damage to the heart, ribs, or sternum.

**MUSCULAR ANATOMY**
- Pectoralis Major
- Trapezius
- Serratus anterior/posterior
- Levator scapulae
- Rhomboids

**MOI**
- Impact directly over the lower left breast bone
- Impact involving a small part of the chest wall
- High energy impacts
- Impact occurring within a specific 10-30 millisecond portion of the cardiac cycle
- Researchers believe children are more susceptible due to the softer chest wall

**PREVENTION**
Due to the poor survivability rate, prevention has become a huge issue
- Many youth leagues have began using softer balls for their sports
- At risk positions, such as pitchers and catchers, have started wearing chest protectors
- Although prevention steps have been taken, incidents have still occurred, mostly due to improperly fit equipment

**HEART ANATOMY**
- Right/left Atrium
- Right/Left Ventricle
- Superior/Inferior Vena Cava
- Tricuspid Valve
- Mitral Valve
- Semilunar Valve
- Pulmonary Arteries

**SIGNS AND SYMPTOMS**
- Cardiac arrest occurs immediately after the blow
- Followed by cardiac arrhythmia, most frequently ventricular fibrillation
- Immediate treatment must be taken to ensure survival

**STATISTICS**
- Only about 152 cases have been reported
- Mean Age: 13.6 years of age
- 72% of victims were younger than 18
- 95% Male
- 87% white
- 2/3 are sports related
- Only a 16% survival rate

**PROPER STEPS FOR CPR/AED**
- Position the victim on his back.
- Tilt head back and lift chin. Check for breathing for no more than 10 seconds.
- If the victim is not breathing, give 2 rescue breaths.
- Check for signs of circulation. If there is no circulation, then the heart is not pumping.
- Turn on the AED and follow audio commands.
- Open the victim’s shirt and wipe his chest dry of sweat or water.
- Plug the wire from the pads into the AED if they are not already attached.
- Make sure no one is touching the victim so the AED can analyze correctly.
- Push the ‘Analyze’ button or let the AED automatically begin its analysis.
- Just wait for the analysis to complete.
- If the AED determines a shock is required:
  - Keep everyone clear of the victim.
  - Press the ‘shock’ button.
  - Let the AED reanalyze.