We Saved a Life Today. So Could You.

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Not Just a Saturday Morning Lacrosse Game

Saturday April 19, 2008 started as a perfect day for an athletic event. Warm, sunny skies, with a cool breeze. An ideal spring morning as we arrived in Raleigh to watch our sons from Providence Day School in Charlotte compete against the lacrosse team from Cardinal Gibbons High School.

Following the warm up, national anthem, player introductions and benediction, the game started and progressed without incident. Early in the fourth quarter, with Cardinal Gibbons up 5-3, Providence Day came down the field and one of the players took a shot. As the ball sailed toward the goal, it struck Alex Beuris, a Cardinal Gibbons defenseman on his front side. Alex bent over holding his chest, removed his helmet as he fell to the ground first in a seated position, then falling backwards.

From a distance it looked like Alex had the wind knocked out of him, but as Dr. Pat O'Brien, a Cardinal Gibbons parent arrived at his side, Alex began to twitch and go into spasm. Dr. O'Brien immediately turned toward the bench area, yelling across the field to "call 911".

Hearing this, I ran onto the field, and arrived at Alex's side as he was staring blankly into space, his body convulsing. He was having a seizure. I knelt above Alex's head, holding and protecting it while maintaining his airway. The seizure lasted about 20 seconds. He then started to wretch. We turned him on his side so he wouldn't aspirate. This passed, and was immediately followed by 3 or 4 similar convulsing episodes. With each episode his breathing paused and his color went from pink, to ashen, to pink again, as his breathing resumed. We were joined on the field by Dr. Lee Ann McGinnis, and Dr. Matt Ohl, 2 other Providence Day parents. Just when it seemed that Alex was coming around, his body went flaccid and his breathing stopped. We called out his name but he lay motionless. He was unresponsive, and his color quickly turned blue. We could not feel a pulse.

Alex Beuris, an otherwise healthy 18-year-old high school senior, was lying on the athletic field in full cardiac arrest.

We removed his jersey and upper body equipment and started cardiopulmonary resuscitation (CPR) compressing Alex's chest, and providing mouth to mouth. He had a bruise just over the left lower portion of his chest where the ball had struck. An automated external defibrillator (AED) was available on site and was quickly brought to the field. The leads were applied to Alex's chest, CPR was paused, and the monitor confirmed that his heart had stopped pumping. It informed us that his heart needed to be

shocked. Following the verbal instructions from the AED, everyone 'cleared' off of Alex, the machine's button was pushed, and Alex's body jumped off the ground as the shock was delivered. No response. His face still blue, and precious time continuing to pass, we resumed CPR as the machine instructed us to give another shock. Everyone 'cleared' again as the button was pushed a second time, once again causing Alex's body to jump. This time after the shock his cardiac rhythm resumed and he started breathing on his own; his skin turning pink as oxygen started flowing through his body once again. Within minutes of Alex coming back to life the paramedics arrived. They took over stabilizing him, and transported him to the hospital where, shortly after arriving he woke up and started talking. Alex's cardiac arrest lasted about 6 minutes.

The purpose of this article is to share our experience, so those attending high risk athletic events are better prepared to do everything possible to save a life; possibly that of your own child.

Commotio Cordis

Alex sustained blunt chest trauma resulting in sudden cardiac death, an injury known in the medical literature as Commotio Cordis (CC). The term comes from Latin, and means disturbance or commotion of the heart. The cause is a blow to the heart through the chest wall at a vulnerable point in the hearts electrical rhythm. High-risk sports include lacrosse, hockey, and baseball. The exact incidence is unknown. The death rate with CC is high. In a clinical review published in January 2007 by Madias and co-authors, survival is reported as being only 15%. The only chance for survival is early resuscitation with CPR and a defibrillator to restore the heart's normal rhythm. If resuscitation is initiated within 3 minutes of onset, survival goes up to 25%, but if it is delayed beyond 3 minutes, it drops to less than 3%. Unfortunately, commercially available chest protectors have not been shown to reliably protect an athlete from CC.

Be Aware and Be Prepared

So what can you do? The first thing is *be aware*. Sudden cardiac death from blunt chest trauma happens in a healthy athlete as a result of a series of recognizable events. Know what they are. If an athlete collapses after being hit in the chest area this is what can be going on. The second thing is *be prepared*. A coaches-parents meeting at the beginning of each season should review Commotio Cordis and identify specific steps that should be followed once it occurs. For example, following the 'Cardiac Chain of Survival' as outlined by the American Red Cross, is an easy to remember sequence of measures any bystander can initiate. Coaches, trainers, teammates, parents and officials should know CPR. Courses are widely available. Although several medical professionals were there today you do not need to be one to do what we did. Starting CPR early increases survival. However, while this gave Alex a chance, the availability of an on-site AED made the difference in Alex's survival. AED's are relatively inexpensive and easy to use. They should be *on the field* in a known, accessible location at every athletic event where this kind of injury can occur. A specific person should be assigned ahead of time to 'grab

it and run' if it is needed. Coaches and parents should be taught its use at the beginning of every season.

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The '*We*' in this article refers to the collective efforts of many people, most of whom don't know one another and will never meet. Starting with Mike Curatolo the Cardinal Gibbons lacrosse coach, and David Mills the Cardinal Gibbons trainer, who together made the decision to have an on-site AED (purchased 6 years ago with money donated by a player's grandparent and raised by their student body); to the person who called 911; to those performing the resuscitation; and to the officials, coaches, parents, and athletes who ran, prayed, comforted and supported one another regardless of which jersey they had on.

Competitive sports are an exciting and important part in the growth and development of our kids. But nothing was more important on the morning of Saturday April 19, 2008 at Cardinal Gibbons High School than saving the life of an 18-year-old boy who collapsed on an athletic field.

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References

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