

March 12, 2004

Minutes Lightning Data Center
 St. Anthony Hospital
www.stanthonyldc.org

Quote of the Month:

“A cardinal rule of mountaineering...is that under no circumstances does one split a small party if one has any reason to suspect trouble ahead.”

AJ Kauffman, WL Putnam. *K2 The 1939 Tragedy*

1. Meeting began at 11:30 am and adjourned at 1:20 pm.
2. Members present: Bradley, M Cherington, N Cherington, Collier, Gartling, Gift, Keen, Langford, McDonough, Middleton, Nay, Resignolo, Wachtel, Wells, Yarnell.
3. I brought the following articles from the literature (abstracted in part here):
 - a. Andreae MO. Et al. Smoking rain clouds over the Amazon. *Science* 2004;303:1337-1342.

“Heavy smoke from forest fires in the Amazon was observed to reduce cloud droplet size...The lack of early precipitation allows updrafts to accelerate and transport cloud water in deep convection to the high and supercooled regions, where it can release additional latent heat of freezing...The added water is available for production of intense ice precipitation, hail and lightning creating more violent convective storms.”

- b. Ulusarac O, Carter E. Varied clinical presentations of *Vibrio vulnificus* infections: a report of four unusual cases and review of the literature. *South Med J* 2004;97:163-168.

“*Vibrio vulnificus*...is a Gram-negative..bacillus associated with gastroenteritis, septicemia, and wound infections in humans...*V vulnificus* is found commonly in coastal waters and estuaries in tropical to subtropical climates....A 27-year-old white male was struck by lightning while windsurfing in the waters off of Pensacola. Fla. He was found pulseless in the water and was resuscitated and intubated by emergency medical personnel and transported to a nearby hospital in Pensacola...Shortly after admission, swelling and redness were noted in the right upper extremity...The diagnosis of compartment syndrome was made, and the

patient underwent a right forearm fasciotomy...fasciotomies were required for control of the infection...This patient required extensive physical therapy to regain full mobility.”

4. Ken Langford is collecting lightning photographs where streamers are visible. He would appreciate hearing from anyone who has such photographs. In addition, please send to Ken any pictures of ball lightning.

Ken’s photographs are now being shown at the Catwalk Gallery at 32 Broadway, Denver 80203. The exhibit is called: *Natural Phenomena*. Members can call 303 733 7172 for times and directions.

5. Howard Wachtel wondered if some reported cases of ball lightning were actually phosphenes – flashes of light ‘seen’ by individuals standing in strong magnetic fields. Les Nay asked if blind people experience this phenomenon when they are near a lightning storm.
6. Our guest speaker today: Tom Resignolo, EMS, Field Coordinator with St. Anthony’s Prehospital Services. Tom has been EMS Field Provider for 21 years. He has also worked as a firefighter and ski patroller. I observed that if one were in trouble, it would be good if Tom were nearby. Tom’s talk: “Presentation of a Lightning Strike COR Zero Resuscitation Case Study.”

Tom gave an outstanding minute by minute presentation of his care for a lightning strike patient “in the field.” Many of us in the audience, who have never been present shortly after a lightning accident, were given a lucid description of what trained EMS personnel do. I cannot do justice to Tom’s presentation. I can transcribe the notes I took.

On a June afternoon in a Colorado mountain town, a 24-year-old man was struck by lightning. 14 minutes transpired between the lightning incident and arrival of the EMS team. The patient was pulseless and apneic.

The patient was ‘bagged’ with respirations at 24 per minute. EMT-I confirmed ventricular fibrillation. Automatic defibrillator (AED) was attached. Defibrillation was accomplished with 200 joules. The subsequent cardiac rhythm was perfusing atrial fibrillation (140/minute).

Airway was established at 16 minutes with endotracheal intubation. The presence of carotid pulses but no radial pulses – an indication that the systolic blood pressure was about 60 to 70. Circulation -- I.V. fluids started for hypovolemia.

Tom and Gil McDonough discussed the use of Magnesium versus amiodarone for ventricular fibrillation in lightning strike patients. Is Magnesium preferable in cases with prolonged Q-T interval or torsades?

At about 5 hours after the lightning strike, the patient arrived at the hospital. Months later, his recovery was nearly complete.

7. Karen Wells found the following references regarding the use of IV magnesium and/versus amiodarone to treat cardiac arrhythmias (ventricular tachycardia, ventricular fibrillation, torsade de pointes). Torsade de pointes = form of proarrhythmia seen during therapy with drugs that prolong repolarization (Hohnloser).
 - a. Sarkozy A, Dorian P. Current Cardiology Reports 2003;5:387-94.
 - b. Winters SL, Sachs RG, Curwin JH. Chest 1997;111:1454-7.
 - c. Hohnloser,SH. Am J Cardiol 1997;80:82G-89G.
 - d. Quek DK, H'nk PK. Singapore Med J. 1993;34:266-270.
8. These minutes do not represent official opinions of LDC members. They simply reflect comments made during the meeting.
9. Next meeting: Friday, April 9, 2004 at 11:30 am in the Main Auditorium of St. Anthony Central Hospital. Guest Speaker: Rich Kithil, National Lightning Safety Institute.

Respectfully submitted,

Michael Cherington, MD