

Carotid Sinus Syndrome and Wrestling

By Dr. Conkwright

A few weeks ago, while reading through one of my medical journals, I came across an article that immediately caught my attention. It was called "Carotid Sinus Syndrome and Wrestling." After completing the article it occurred to me that in my 50 years of involvement with wrestling, I had seen similar but not as severe cases and didn't think it was that unusual.

What is the carotid sinus? (see illustration) This area of the carotid artery has the job of aiding in controlling the rate of the heart beat, by a complex mechanism through the sympathetic nervous system.

When I was in the service in WW II, like many in training I was taught certain areas of the body to attack, hit or squeeze to cause a state of unconsciousness. This was the prime area. It comes as no surprise that wrestlers will sometimes have a problem with this syndrome

In this article the author describes a case of a 17 year old wrestler who had a habit of fainting occasionally while wrestling. The first thing that was considered was the status of the wrestlers cardiovascular system. He was put through a very comprehensive cardiac evaluation which included electrophysiological studies. This was accomplished by threading a catheter through a vein, and stimulating various areas of the heart to provoke syncope (fainting). No heart defects were detected so the wrestler went back to wrestling. The fainting continued, so back to the physician for further studies. This time they massaged his carotid sinus which resulted in immediate fainting of the wrestler.

Basically what happens during wrestling, an athlete will quite often be cross faces with the arm going across the lateral neck. He may also be subjected to neck pressure when the bottom man reaches back to head lock the top man, front headlock or front three quarter nelson bar. The more illegal the more likely for the wrestler to be choked.

The reason some wrestlers have syncope attacks and others don't is due the variations in sensitivity of the carotid sinus. Those who have normal carotid sinus response will eventually be out like a light if pressure lasts 15-20 seconds. In the case

described this area was abnormally sensitive to only a few seconds of pressure.

The syncope attacks of wrestlers can be very complex, and such things as WPW syndrome (Rapid Heart Beat Episodes), electrolyte imbalance due to excessive weight cutting, dehydration, and hypoglycemia (low blood sugar), which is always a problem of wrestlers who are diabetic. The list goes on, so add the carotid sinus syndrome to the list.

It would seem less involved and less expensive to simply massage the carotid sinus area to test - whether this causes the wrestler passing out. In extreme cases such as the one described, the wrestler may want to take up swimming, or other less violent sports.

For those of you readers who would like a more detailed explanation of this problem, here is a more in depth explanation.

There are three types of distinct responses, to carotid sinus stimulation.

1. Cardioinhibitory - this is the response where the contracture of the heart is delayed three seconds.

2. Vasopressor type - there is a decrease in systolic blood pressure of at least 50 mm of hg.

3. Mixed type - combination of body types.

The incidence of carotid sinus hypersensitivity has been estimated at 10% in the adult population. It increases with age and is predominately in men. Probably only 5%-20% of persons with hypersensitive carotid sinuses have symptoms under normal circumstances. In the described case, the wrestler may not have known about his very sensitive carotid sinus, if he had not wrestled.

Editor's Note: Dr. Conkwright has been in family practice for 51 years and is a retired associate professor from Eastern Virginia Medical School and Medical College of Virginia. His subspecialty is in sports medicine. Dr. Conkwright is a member of the National Wrestling Hall of Fame for his contributions to wrestling and its medical problems. 🏆

