Unusual Circumstances Stump a Timely MI Diagnosis

By Michael J. Bono, MD

A 53-year old male presented to a family medicine office with right arm pain. He was born with an atrophic left arm, and had pulled himself up into a pickup truck three days earlier with his normal right arm. He was evaluated by a Family Nurse Practitioner (FNP) who diagnosed a right trapezius muscle strain and prescribed pain medications. The patient was not asked about chest pain or shortness of breath. Later that day, the patient’s arm pain worsened. He called the office and was told to go to the closest emergency department. In the emergency department a 12 lead EKG revealed ST elevation in the anterior leads, suggesting an extensive myocardial infarction. The patient suffered a cardiac arrest while in the ER. Resuscitation efforts were unsuccessful and he was pronounced dead.

Doctors call it the "Hollywood heart attack": a middle-aged man breaks into a cold sweat, grimaces, and clutches his chest-just like in the movies. Trouble is, in real life, heart attack symptoms don't always announce themselves so dramatically. More often they are insidious and puzzling, such as unexplained fatigue or abdominal discomfort, and many people wait for hours before seeking help. Big mistake. The ability to quickly spot signs of heart attack, angina, and stroke can be life-saving. How many physicians would have missed the evolving MI in this particular case?

This male patient in his early 50’s was born with the birth defects of an atrophic left arm and no hand. He also had a history of polio affecting his legs, Erb’s palsy, anxiety, alcoholism, cigarette smoking, and epilepsy. He had been under the care of the same primary care physician for 30+ years.

He initially called his physician’s office complaining that he had “pulled a muscle” three days before when he pulled himself up into a pickup truck with his right arm. The arm pain got worse over the next three days and was located along his right scapular area. He also developed pain in the right side of his neck, which seemed to radiate to his back and into his left shoulder area. He tried using Advil, Icy Hot and heat, but with no improvement. The patient saw the FNP on the same day. He told her that it hurt to breathe. The FNP interpreted this statement to mean that he had muscle pain when he took a deep breath. At no time did the patient complain of shortness of breath or chest pain, nor did the FNP specifically ask about these symptoms. The FNP recorded “the patient was in no acute distress”.

Physical Exam: Vital signs showed a temperature 95.6, pulse 96, respiratory 18 and blood pressure 134/88. Breath sounds were equal and lungs were clear to auscultation bilaterally. Cardiac exam was unremarkable. Abdomen was soft and non-tender. Extremity exam revealed tenderness of the right trapezius muscle area on palpation; there was no redness or swelling of the right shoulder or neck.

Based upon the patient’s complaints and her examination, the FNP’s assessment was right trapezius muscle strain. She gave the patient an injection of Vistaril 25 mg IM, and prescribed Flexeril 10 mg every 8 hours as
needed for pain with a Lidoderm patch to try for 12 hours. The patient was instructed to return if the symptoms worsened, or if there was no improvement.

The patient called the doctor’s office back that afternoon complaining of continued pain. He now described the pain as severe. He was instructed to go to the Emergency Department.

The patient arrived in severe, relentless pain, sweating and nauseous. An EKG demonstrated an evolving extensive anterior myocardial infarction with marked ST segment elevation in leads V1-V4. A cardiologist was consulted and prescribed aspirin, TPA, Lovenox, and Lopressor. Thirty minutes later, the patient developed persistent hyperacute ST segment elevation. His blood pressure suddenly deteriorated to 65/30, and he had seizure-like activity. He then became unresponsive and bradycardic. A code was called, and ACLS protocol was initiated with oral intubation. After 30 minutes, the code was discontinued and the patient was pronounced dead.

Allegations

The patient’s wife filed a wrongful death suit against the physicians in the practice.

The plaintiff’s allegations centered on (1) the failure to diagnose and treat the patient’s MI in its early stages and, (2) the failure to adequately supervise non-physician personnel.

The allegations pointed to the FNP’s notation that the patient said it hurt to breathe. The plaintiff believed this was evidence the patient was experiencing something more than a pulled muscle in his shoulder. They also focused on the fact that the FNP never asked any questions about chest pain, shortness of breath, nausea, vomiting, or diaphoresis. Plaintiff experts commented that arm pain can represent anginal symptoms in 15% of myocardial infarction, and that right shoulder pain radiating to the left shoulder is angina until proven otherwise.

Risk Management Commentary

- Do you have chest pain?
- Do you have shortness of breath, particularly on exertion?
- Do you have nausea or sweating?
- Have you had any cardiac problems?
- How much do you smoke?
- Do you have a family history of heart attack or stroke?

A further criticism levied by our defense experts was that no EKG was done at the time of the initial patient encounter. Almost all experts agree that a male in his 50’s with pain below the jaw and above the pelvis should have an EKG done. Such an easy and inexpensive test (14 cents to the practice) may have saved this patient’s life.
A primer for your patients: 12 possible heart symptoms never to ignore

1. **Anxiety.** Heart attack can cause intense anxiety or a fear of death. Heart attack survivors often talk about having experienced a sense of "impending doom."

2. **Chest discomfort.** Pain in the chest is the classic symptom of heart attack. But not all heart attacks cause chest pain, and chest pain can stem from ailments that have nothing to do with the heart.

3. **Cough.** Persistent coughing or wheezing can be a symptom of heart failure -- a result of fluid accumulation in the lungs. In some cases, people with heart failure cough up bloody phlegm.

4. **Dizziness.** Heart attacks can cause lightheadedness and loss of consciousness. So can potentially dangerous heart rhythm abnormalities known as arrhythmias.

5. **Fatigue.** Especially among women, unusual fatigue can occur during a heart attack as well as in the days and weeks leading up to one. And feeling tired all the time may be a symptom of heart failure.

6. **Nausea or lack of appetite.** It's not uncommon for people to feel sick to their stomach or throw up during a heart attack. And abdominal swelling associated with heart failure can interfere with appetite.

7. **Pain in other parts of the body.** In many heart attacks, pain begins in the chest and spreads to the shoulders, arms, elbows, back, neck, jaw, or abdomen. But sometimes there is no chest pain -- just pain in these other body areas like one or both arms, or between the shoulders. The pain might come and go.

8. **Rapid or irregular pulse.** Doctors say that there's usually nothing worrisome about an occasional skipped heartbeat. But a rapid or irregular pulse -- especially when accompanied by weakness, dizziness, or shortness of breath -- can be evidence of a heart attack, heart failure, or an arrhythmia. Left untreated, some arrhythmias can lead to stroke, heart failure, or sudden death.

9. **Shortness of breath.** People who feel winded at rest or with minimal exertion might have a pulmonary condition like asthma or chronic obstructive pulmonary disease (COPD). But breathlessness could also indicate a heart attack or heart failure.

10. **Sweating.** Breaking out in a cold sweat is a common symptom of heart attack. "You might just be sitting in a chair when all of a sudden you are really sweating like you had just worked out," Frid says.

11. **Swelling.** Heart failure can cause fluid to accumulate in the body. This can cause swelling (often in the feet, ankles, legs, or abdomen) as well as sudden weight gain and sometimes a loss of appetite.

12. **Weakness.** In the days leading up to a heart attack, as well as during one, some people experience severe, unexplained weakness.

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