Sometimes I experience chest muscle spasm. Can this kind of problem be dangerous, and can spasm of the heart cause a heart attack?

A muscle spasm of any group of muscles can be most uncomfortable, and even painful. Spasm is defined as a sudden involuntary muscular contraction. These contractions can occur in a number of circumstances, and it is very important that your health-care provider/physician discuss these with you in detail, and also do the appropriate tests. The possibilities range from electrolyte imbalance (excessive or insufficient potassium, calcium, magnesium, and/or sodium) to nerve or muscle injury/irritation. As we have emphasized in our previous columns, chest pain or discomfort can have many causes, some of which may indicate emergency situations (e.g., heart attack, rupture of the aorta, clots in the lungs). Therefore, it is essential that you consult your physician regarding these problems. It is very important, even when a non-life-threatening diagnosis has been established, that any new or unusual chest pain be thoroughly investigated. NEVER self-diagnose!

Here is a message for physicians and health-care workers as well: “A physician who treats himself or herself has a fool for a patient!”

The other part of your inquiry asks whether spasm of the chest can cause a heart attack (myocardial infarction). The heart is a muscular organ, and is sensitive to electrolytes and many of the other factors that influence the muscles of the rest of the body (skeletal muscle). When there is an electrolyte imbalance, it is the rhythm of heart contraction that is affected; this means that the pulse may become irregular, very rapid (atrial or ventricular fibrillation), or even nonexistent (arrest). All of these situations are potentially lethal.

There is a situation in which spasm (sudden muscular contraction) of a coronary artery may occur. This usually occurs when there is some coronary artery disease (or plaque). This spasm results in decreased oxygen supply to the heart muscle, and chest pain may be experienced (a crushing type of chest discomfort), commonly known as angina. There is another condition, called variant angina or Prinzmetal’s angina. It occurs almost always when the patient is at rest (as opposed to typical angina, which occurs on exertion). During these episodes significant diagnostic changes show up on the electrocardiogram (EKG). A common association is a heavy cigarette-smoking history. The attacks tend to occur mainly between midnight and 8:00 a.m. These spasms can indeed cause a heart attack, with muscle damage similar to that of the more common form of heart attack (the breaking up of a cholesterol plaque, with blood clot formation).

The diagnosis is made on history and examination of the EKG obtained during or sometimes immediately following the episode. The spasm of the artery(ies) can sometimes be reproduced during study of the coronary arteries during the test known as coronary angiography (injecting dye into the arteries to establish the presence of narrowings or blockages). The condition usually responds well to treatment, which includes medications known as nitrates and calcium antagonists (blockers), attention to the lifestyle and risk factors (cholesterol, hypertension, diabetes, smoking, obesity, exercise), as well as medically supervised intake of aspirin.
The good news is that patients with variant angina usually respond well to treatment, although it may recur episodically. NEVER NEGLECT CHEST PAIN OR DISCOMFORT—TIME IS MUSCLE! The preservation of heart muscle through effective, early treatment leads to longer life, with better quality of life.

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