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News

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****"False angina" can be caused by diseased gallbladder.

DALLAS--"False angina"--chest pains that are not brought on by heart or blood vessel disease--can be caused by an ailing gallbladder.

Cardiovascular physiologist Dr. George Ordway at The University of Texas Health Science Center at Dallas is examining the link between a diseased gallbladder and chest pain.

Located under the liver, the gallbladder is a repository for bile, which is produced by the liver and used for breaking down fats. When the gallbladder becomes diseased by crystal formation (gallstones) or infection, pain is usually felt as abdominal pain. Sometimes, however, gallbladder pain follows nerve pathways up the spinal cord to become "referred pain" felt in the chest area. This could allow a person to think they are suffering from heart disease when they are not, says Ordway.

The possibility also exists that cardiovascular reflexes originating in the gallbladder could produce an added stress to the heart of someone with underlying coronary artery disease. In these cases of underlying heart disease, problems of the gallbladder could stimulate the heart into producing true angina.

"The only way of determining the origin of anginal pain is by contacting a physician," says Ordway, whose work is funded by the American Heart Association, Texas Affiliate.

The researcher's work involves the use of bradykinin, a substance that is found in the body and is associated with pain and inflammation. Present also in bile, bradykinin can stimulate sensory nerves arising from the gallbladder to increase blood pressure, heart rate and the force with which the heart contracts. The result is an increase in the work done by the heart. "A normal heart should be able to meet the demands of extra work placed on it if this happens," says Ordway.

Evidence implicating the diseased gallbladder as a cause of such cardiovascular abnormalities as angina, fainting and changes in electrocardiographic activity, dates back many years, Ordway says. Physicians noted during the '30s that distension and manipulation of the gallbladder during surgery could cause profound reflex activation of the heart and circulatory system. In many cases, removal of the diseased gallbladder reduced or eliminated the abnormalities that were observed.

Ordway's experiments involve the topical application of bradykinin to the surface of the gallbladder in anesthetized laboratory animals. By stimulating the sensory nerves of the gallbladder, he is working to simulate the pain responses that may be evoked by gallbladder disease. His aim is to describe the mechanisms responsible for these reflexes that originate in the gallbladder.

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