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NEWS

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Study reveals evidence of heart disease in ancient Egyptian mummies

Research presented by Saint Luke's cardiologist indicates need to look beyond modern risk factors for answers

KANSAS CITY, Mo. – A cardiologist at Saint Luke's Mid America Heart Institute and his research colleagues from Cairo, Milwaukee and Mission Viejo, Calif., have detected hardening of the arteries in 3,500-year-old Egyptian mummies, indicating that heart disease is not just a condition found in modern humans.

The research appears in the Nov. 18 issue of the *Journal of the American Medical Association* (JAMA) and was presented Nov. 17 at the American Heart Association Scientific Sessions 2009 in Orlando, Fla.

Saint Luke's Mid America Heart Institute cardiologist Randall Thompson, M.D., and collaborating imaging experts, Egyptologists and preservationists, examined direct evidence collected using a Siemens six-slice computed X-ray tomography on 22 mummies in the Museum of Antiquities in Cairo, Egypt. The mummies dated from 1981 B.C. to 364 A.D. All were of high social status, including priests and members of the pharaoh's household.

Atherosclerosis, or hardening of the arteries, is the disease that causes heart attacks and strokes, and is commonly associated with modern risk factors like obesity, sedentary lifestyles, smoking, stress and high-fat diets. Atherosclerosis often causes arteries to become calcified, and this change is readily apparent on CT scans. Since the diet and lifestyles of ancient people are quite different from modern man, the investigators were surprised to find that atherosclerosis was so frequently seen. Sixteen mummies had identifiable arteries or hearts and of those, nine had calcification in the artery wall or path where the artery should have been.

Calcification was evenly discovered in male and female mummies, and more common in mummies thought to be 45 years or older at the time of death. It is thought that diet included grain, game, domesticated animals and fish. Salt was often used for preservation.

“While the presence of calcification does not demonstrate that atherosclerosis was a common cause of disease or death, it does provide evidence that humans in ancient times had the genetic predisposition and environment to promote the development of atherosclerosis,” Dr. Thompson said.

“This study may begin to shed light on the relative importance of modern risk factors in causing hardening of the arteries,” Dr. Thompson continued. “It’s not only a disease of modern man, but was also present and not unusual in humans living 3,500 years ago. We all may be at risk for atherosclerosis, but it should be emphasized there is much we can do to minimize its extent and severity.”

The authors of the paper are: Adel H Allam, M.D., Al Azhar Medical Sch, Cairo, Egypt; Randall C Thompson, M.D., Saint Luke’s Mid America Heart Institute, Kansas City, MO; L. Samuel Wann, M.D., Wisconsin Heart Hosp, Milwaukee, WI; Michael I. Miyamoto, M.D., M.S., Univ of California San Diego, San Diego, CA; Abd el-Halim Nur el-Din, Ph.D., and Gomma Ab el-Maksoud, Ph.D., Cairo Univ, Cairo, Egypt; Ibrahem Badr, Ph.D., Institute of Restoration, Alexandria, Egypt; Hany Abd el-Amer, Natl Res Ctr, Dokki, Giza, Egypt; and Gregory S. Thomas, Univ of California Irvine, Mission Viejo, CA.

Saint Luke’s Mid America Heart Institute is a member of Saint Luke's Health System in Kansas City, Mo. The research letter and list of investigators can be found at <http://pubs.ama-assn.org/>

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