心疾患の起源がミイラにおいて発見された（Abstract # 13-LB-15977）

Horus study: 4,000年前まで遡ると多くの地域や生活習慣からミイラに動脈硬化があったことが分かった

Horus study: Atherosclerosis found in mummies from many geographies and lifestyles dating back 4,000 years

動脈硬化は近代の生活習慣の産物であるとしばしば考えられているが、この現象はさまざまな地理的位置や遺伝子背景および生活習慣を含む数千年にわたる疾患であるとのレイトブレイキングトライアルの結果が第62回American College of Cardiology学会で発表された。このHorus Studyは古代人における動脈硬化の証拠を調査した初めての系統的な研究である。研究者らの国際協力によりエジプト、ペルーおよび北米の4,000年近くの期間を経たミイラ137体の全身コンピュータ断層撮影（CT）が施行された。研究チームは調査したエジプト人76体の38%、ペルー人51体の25%、アナサジ族5体の40%、アレウト族5体の60%において、動脈硬化の証拠を明らかにした。科学的調査から推定した年齢に基づくと、これらのミイラの死亡時平均年齢は36歳であったが、動脈硬化を有する者の平均年齢は有意に高く43歳であった。このスタディの立案者らによると、古代人の平均寿命は約40歳であることから、一部の人々において動脈硬化は老化特有のものであるとの仮説が導かれる。

Full Text

While atherosclerosis is often considered a product of modern lifestyles, it is a condition that has spanned thousands of years, including a wide variety of geographic locations, genetic backgrounds and lifestyles, according to research presented at the American College of Cardiology's 62nd Annual Scientific Session.

The Horus Study is the first systematic search for evidence of atherosclerosis among ancient people. An international collaboration of researchers performed whole body computed tomography (CT) scans of 137 mummies from populations in Egypt, Peru and North America spanning a period of nearly 4,000 years. They found signs of atherosclerosis in 35 percent of the mummies and across all populations in the study.

"It is surprising that atherosclerosis is so easy to find in these ancient cultures across the globe over a very wide timespan and among people with very different genetics, lifestyles and diets," said Randall Thompson, M.D., St. Luke's Health System and one of the study authors. "One implication is that this disease that we think of in terms of modern lifestyles and diet is actually related to aging. Or, perhaps we don't understand the risk factors as well as we think we do."

A previous study by Thompson and his team, released in 2011, detailed the findings of atherosclerosis among Egyptian mummies, leading researchers to question whether something inherent to the ancient Egyptian culture, such as a rich, high-fat diet may have caused them to develop atherosclerosis. To further test this hypothesis, the study was expanded to include a variety of cultures, socioeconomic strata and time periods. In addition to the ancient Egyptians of 1900 B.C. to 200 A.D., mummies were included from the indigenous corn and potato farmers of ancient Peru living between 600 B.C. and 1500 A.D., the ancestral Hisatsinom forager-farmers living on the Colorado Plateau and the Unangan hunter-gatherers of the Aleutian Islands, who lived from 1750 to 1900 C.E. The Horus team found evidence of atherosclerosis among all groups, including 38 percent of the 76 Egyptians studied, 25 percent of 51 Peruvians, 40 percent of the five Hisatsinom examined, and 60 percent of the five Unangan.

"While it is hard to compare these numbers directly [with current data on atherosclerosis], atherosclerosis is common in ancient people," Dr. Thompson said, adding that people in modern times may have been "oversold the ability of diet to prevent or reverse cardiovascular disease."

Based on age estimates from scientific examination, the average age of the mummies in the study at time of death was 36, though those with atherosclerosis had a significantly higher average age of 43. According to Thompson, the average life span in ancient times was about 40, lending evidence to the hypothesis that atherosclerosis might be an inherent part of aging for some people.

Researchers speculate risk factors for ancient populations might have included chronic exposure to household cooking fires in small living quarters, which may have produced risks similar to that from smoking, and inflammation related to parasites and infections. Although stress is difficult to measure, historians know there were particular stressors inherent in ancient lifestyles.

"Certainly we have stress now in modern times. Sitting in traffic when we're late for work is stressful for us, but it's nothing like famine and pestilence; they had brutal lives," Dr. Thompson said.

The research team was most surprised to find atherosclerosis among a population not suspected to be as susceptible: hunter-gatherers. Because of this population's varied diet and high level of daily exercise, their risk factors for atherosclerosis would seem to be low. However, advanced atherosclerosis was found among mummies of the indigenous Aleutians, who even in 1900 were living traditionally: hunting seals, fishing and gathering berries and sea urchins. Three of the five mummified adults of this area had atherosclerosis, including a woman of approximately 50 years of age who had heavy calcifications of two of her three coronary arteries.

Study findings may have implications for modern day patients in terms of risk factors, prevention and treatment, notes Dr. Thompson. While these findings may point to genetic and age-related factors playing a large role in development of atherosclerosis, he said, this is all the more reason for patients today to address the factors they can control: quitting smoking, cutting down on alcohol, eating a healthy diet, exercising and following up with health care providers to monitor blood pressure and cholesterol levels.

The Horus Study is the culmination of an international collaboration between physicians, anthropologists and biologists from numerous medical centers as well as the Smithsonian Institution, the Metropolitan Museum of Art, and the British, Egyptian, Brooklyn, University of Pennsylvania, and Peruvian Peruchuco Museums. The study was funded by a grant from the National Endowment for the Humanities, the National Bank of Egypt, Siemens and the St. Luke's Hospital Foundation.

ACC2013特集