Atherosclerosis in Ancient Egyptians
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The interest in ancient Egyptian history did not stop since decades. It became a separate wide research science in all universities of the world, and is called Egyptology. It is not only directed to history of pharaohs and their dynasties, but recently to the general health and diseases of ancient Egyptians.

In 1834, Thomas Pettigrew, a professor of anatomy at Charing Cross Hospital in London, was among the first to emphasize the bioanthropological value of carefully examining ancient mummies. His book, A History of Egyptian Mummies, has become a medical classic (1). Bilharzia Haematobium ova was discovered since 100 years in the remnants of mummies (2). Genetic diseases as Alkaptonuria, caused by mutations in the HGO gene, discovered by Sir Archibald Garrod’s, 100 years ago and characterized by widespread connective tissue disease involving many organs, including the heart was discovered to be in remnants of a mummy (3). More recently with advanced technology the Mycobacterium tuberculosis Complex DNAs proved that TB was a common disease in ancient Egypt (4).

Zahi et al. (2010), studied 11 royal mummies of King Tutankhamun family. They proved by genetic testing the presence of malaria tropica (plasmodium falciparum), in 4 mummies and to be the most likely cause of death of king Tutankhamun, who died at the age of 18 years (5).

Evidence of Myocardial Infarction in Mummified Human Tissue, was proved by troponin I [cTnI]) assay, of an individual in whom other forensic and historical evidence suggested sudden cardiac death (6).

Axial thin-collimation spiral computed tomography (CT) with sagittal and coronal reformatting, three-dimensional (3D) reconstruction, provided important paleopathologic and historical information about mummification techniques, depicted anatomy in the most informative imaging plane, illustrated the soft-tissue preservation and physical appearance of mummies in superb detail, and generated an intriguing virtual tour through hollow mummified remains without harming the specimens themselves (7).

Medical imaging is considered the new rosetta stone for mummy research, as many articles are directed to the ethics of investigating mummies due to a lack of informed consent, privacy or possibility of desecrating the secrets of the dead and who has the right to the bodies, their information, and the right to decide what is appropriate research (8, 9).

Adel et al. (2009), performed whole-body, 6-slice CT on 20 mummies housed in the Egyptian National Museum. Definite atherosclerosis was present in 5 of 16 mummies (31%) and calcification along an artery’s expected course was considered probable atherosclerosis in an additional 4 of 16 (25%) (10).

ACC (2010) and Atherosclerosis in Ancient Egyptians
The conference press of the ACC is usually very interesting to the public media, where the previous year most interesting research results related to cardiovascular diseases are presented in a simplified matter to the media. In New Orleans (2010), Gregory Thomas, MD, MPH, of the University of California Irvine (11), said at a press briefing that the study, published simultaneously in the April issue of JACC: Cardiovascular Imaging, and titled "Atherosclerosis in Ancient Egyptian Mummies. The Horus Study", by of Allam et al. (2011) (12), was a continuation of his previous study published in 2009 (10). They performed whole body, multislice computed tomography scanning on 52 ancient
Egyptian mummies to identify cardiovascular structures and arterial calcifications. Forty-four of them had identifiable cardiovascular (CV) structures, and 20 of these had either definite atherosclerosis or probable atherosclerosis. Calcifications were found in the aorta, cardiac valves as well as the coronary, carotid, iliac, femoral, and peripheral leg arteries (Figure 1, 2, 3). Based on a skeletal evaluation of the mummies, the average estimated age at the time of death was 38.1 years. The male and female mummies were equally likely to have calcification, and the likelihood of having atherosclerosis increased with estimated age. Two mummies had evidence of severe arterial atherosclerosis with calcifications in virtually every arterial bed. Definite coronary atherosclerosis was present in 2 mummies. They concluded that atherosclerosis is commonplace in mummified ancient Egyptians. Their findings are the earliest documentation of a human with coronary artery disease.

This conclusion was against what we believed before; that ancient people died relatively young is probably related to infections as TB (4), malaria (5) and other contiguous diseases or possibly from genetic disorders (3). We also believed that ancient Egyptians presumably lived healthier, more active lifestyles than modern humans. They did not know tobacco and was not smokers to have this major risk factor. Their diet was believed to be primarily made up of grain, vegetables, and fruit, as seen in the jars in their tombs. However, the ancient Egyptians did have meat in the form of domesticated cows, fowl, sheep, and antelopes, but our impression that they did not consume...
the same amounts we eat nowadays with its high contents of fat from fraying and other ways of cooking with the excessive consumption of chicken, beef and milk products in their daily meals.

The presence of atherosclerosis in those relatively young mummies makes us wonder if there is a risk factor that has not been identified yet, and we may understand atherosclerosis less well than we think, as it is now proved that atherosclerosis is a progressive disease that starts from birth (13), and the differences between populations, between ethnic groups and between individuals are not satisfactorily explained by the variation of risk factors. Differences in genetic susceptibility might be responsible for a part of the unexplained variation of coronary heart disease rates (14).

Atherosclerosis in the mummies proved that we still do not know all the probable causes of this ancient disease and future research will clear most of its mystery and will help us to modify the priorities of its major risk factors for proper management of this progressive ancient fatal disease.

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REFERENCES