

Abstract

This thesis focuses on the study of the os cordis, a specific anatomical structure located in the region of the fibrous trigones of the heart muscle. It serves with a high probability as mechanical support for the aorta and atrioventricular valves during the cardiac cycle. As part of the work, the os cordis was analyzed using computed tomography (CT) on a quite large taxa sampling of hearts of various species, obtained mainly in cooperation with Czech zoological gardens. This study also includes a review of published literature. All data obtained from our own research and from literary sources, were subsequently subjected to statistical and phylogenetic analyses in order to identify relationships between the investigated parameters. Considering detected correlations, we could recommend to collect at least these data in future studies: heart weight, volume and density of os cordis. Reconstructions of os cordis evolution detected quite complex evolution of this heterotypic bone. Until now, no study has been published including such an extensive dataset of samples in combination with the use of modern radiological techniques, and therefore this work brings perhaps new perspectives to the issue of the os cordis and thus contributes to the expansion of knowledge about this interesting anatomical structure.

Key words: os cordis, cardiac skeleton, phylogeny, computed tomography