

Conclusions. The presence of KA is relatively common, and it does not depend on age or gender of the patient, having a wide range of morphological variation. Regardless of the type of the anomaly, its presence should be taken into account by medical and non-medical specialists, for the recommendation of an appropriate way of life and treatment. Before surgery on the C1 region, an imaging examination (preferably CT or CT 3D) would help to choose the necessary materials and reduce the risk of damage to the adjacent structures.

Key words: atlas, Kimmerle's anomaly

256. VARIATIONS OF CORONARY ARTERY BRANCHING AND TOPOGRAPHY

Author: **Pavel Grinevici**

Co-authors: Natalia Mazuruc, Serghei Covanțev

Scientific adviser: Belic Olga, MD, PhD, Associate professor, Department of Human Anatomy, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. According to medical literature, the coronary arteries are subjected to some morphological peculiarities. The research findings on variations of the topography, size and branching of vessels are highly important. It should be taken into account in cardiology for diagnosing, preventing and selecting methods of treatment of cardiac diseases as well as in cardiac surgery in case of surgical interventions.

Aim of the study. To identify the individual variations of topography and branching of the coronary arteries.

Materials and methods. According to goal of our study, 9 isolated heart samples and 2 heart-lung complex samples of adults and children were dissected by fine anatomic dissection method under binocular magnifier. The branching variations of the major coronary arteries and their topography were analyzed. The size of the arteries was measured and all the samples were photographed. The blood supply to the pericardial layer was examined on the basis of 13 samples of adults using the macromicroscopic method of elective Schiff staining of total anatomic preparations as described by M.G. Shubich and A.B. Khodos (1964, 1971), adjusted by the researchers of Human Anatomy Department (M. I. Ștefanuț, 1991, 1998; I. Catereniuc, 2000; I. Catereniuc, M. Ștefanuț, 2003).

Results. The morphological peculiarities of the coronary arteries were examined using the macro-dissection method. The left coronary artery has demonstrated high-degree variability compared to the right coronary artery. The outer diameters of the coronary arteries were relatively constant. The diameter of the left coronary artery near the aorta varied in size between 3.5 mm and 6.5 mm. The vessel immediately divided into three branches. The diameter of the right coronary artery near the aorta varied in size between 4.0 mm and 9.0 mm. In all the examined samples, the artery had one branch with multiple small collateral ramifications along its length. In one sample, the right coronary artery split into two branches of equal diameter. The arteries and their branches disappeared in the depth of the cardiac muscle and pericardial layer. The advantage of the Schiff staining method is that the reagent dyes the thinnest vessels located relatively deep. This is extremely important for macro and microscopic examinations when it refers to the sources of blood supply. The stained preparations revealed vascular plexuses formed by branches of different coronary arteries and their intrasystemic overlapping areas, which serve as a defense mechanism.

Conclusions. According to our findings, the diameter of coronary arteries varied. It depended on the heart size, on age and gender of the patient. The left coronary artery was wider in diameter and had a larger number of branches due to a considerably overload of the left heart chambers. Multiple anastomoses between the small branches of different arteries of the vascular plexuses and intrasystemic overlapping areas were revealed.

Key words: Coronary arteries, vascular plexuses

257. VARIABILITY OF THE AORTIC BULB AND ORIGIN OF THE CORONARY ARTERIES

Author: **Mihail Ivanov**

Scientific adviser: Galina Certan, MD, PhD, Associate professor, Department of Human Anatomy, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. The cardiovascular diseases are currently the leading cause of death in industrialized countries, and it is expected to become the leading cause of death in developing countries as well. The abnormalities of the coronary arteries origin can lead to life-threatening consequences, expressed through arrhythmias, syncope, myocardial infarction, or even sudden death in 20% of cases. Some abnormalities are asymptomatic, or produce non-characteristic symptoms, which are accidentally diagnosed during routine investigations, the most commonly during conventional angiographies.

Aim of the study. To make a detailed analysis and synthesis of the bibliographic sources regarding variability of the aortic bulb and origin of the coronary arteries.

Materials and methods. A literature review of 112 sources from MEDLINE, PubMed, Research Gate and Science Direct database were analyzed, but only 77 of those sources were eligible for our study.

Results. Abnormal origin of the coronary arteries can be detected on birth but also during adulthood. It regards the variations of coronary orifices origin in relation to the sino-tubular junction, leading to serious pathologies that can endanger the life. Among such abnormalities is the origin of the left coronary artery, leaving the right coronary sinus, which should be repaired in almost all patients. While the right coronary artery origin from the left coronary sinus is more frequent, but may be less severe, and surgery is generally reserved for patients with symptoms attributed to ischemia (such as syncope during exercises), documented ischemia, or history of coronary syndrome. The abnormal origin of the left coronary artery from the pulmonary artery is a rare congenital abnormality that if left unrepaired, has a mortality rate up to 90%.

Conclusions. Abnormalities of the coronary arteries origin are rare but significant, with potential risk for ischemia, related to physical exercises, which can be present in children, young and old people. Two main types of coronary arteries origin malformations are distinguished: the benign ones (with less life risk), and malignant (of high surgical interest). A unique surgical strategy cannot be applied to all the patients, and the operative techniques must be individualized, based on the individual specific anatomical features.

Key words: coronary arteries, aortic bulb, variability