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У збірнику представлені матеріали 100 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет», присвяченої 75-річчю БДМУ (м.Чернівці, 11, 13, 18 лютого 2019 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

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Malyk Yu.Yu.

MORPHOLOGY OF THE FALSE CHORDAE TENDINEAE AS ONE OF VARIETIES OF MYOENDOCARDIAL FORMATIONS OF THE HUMAN HEART

Department of Histology, Cytology and Embryology
Higher state educational establishment of Ukraine
«Bukovinian State Medical University»

The inner relief of the heart ventricles is a compound parietal configuration, which is formed by numerous formations projecting into their cavity. At the present time, papillary muscle, muscular trabeculae and false chordae tendineae are well-known among myoendocardial formations. The increased interest in the researches of structural features of the internal relief of the human heart ventricles is provided by the rising necessity for dipper study of the pathogenesis of cardiovascular diseases, to get an understanding of the basic mechanisms of these states and to afford possibilities of usage of these data in cardiology and cardiac surgery.

The aim of the study is to investigate morphological characteristics of the left ventricle false chordae tendineae of human heart.

Materials and methods The false chordae tendineae, which were found in the cavities of the left ventricles of 40 human hearts, used for the study. Macroscopic method, light and electron microscopy methods were used for morphological investigations.

Results of the research. The false chordae tendineae are one type of myoendocardial formations. They crossed the cavity of the left ventricle and were fixed ectopically to the free walls of the ventricle, interventricular septum and papillary muscles. The false chordae tendineae were about 0.7 to 3 mm in thickness. Their length varied from 17 mm to 38 mm. The thickness of false chordae tendineae did not depend on the location in the cavity of the left ventricle, but it was depended on the features of histological structure. The light and electron microscopy showed that false chordae tendineae were lined by a single layer of endothelial cells lying on the basement membrane. A peripheral collagen-elastic layer that separates the central core of the chordae was under the endothelium. This layer was formed by a loose connective tissue with predominance of elastic fibers, which had a longitudinal direction, less collagen fibers and cells of the fibroblastic row. The light and electron microscopy methods showed that, in 27% the central core of false chordae tendineae was formed by ordered, densely packed, linear oriented bundles of collagen fibers. Cells of the fibroblastic row localized between and along of collagen fibers. Such false chordae tendineae were classified by their structure into fibrous type. In 50% of cases the core of false chordae tendineae was formed not only by the bundles of collagen fibers and cells of the fibroblastic row, but it contained contractile cardiomyocytes forming irregularly shaped cords too. The most often cardiomyocytes localized in the form of islets in places of attachment to the wall of the left ventricle, to the papillary muscles, or stretched along the whole chordae, dividing it into two halves. Such false chordae tendineae were classified as fibro-muscular type. In 23% of investigations were false chordae tendineae, which were made only by striated cardiac muscle tissue. Contractile cardiomyocytes in the base of false chordae tendineae had an elongated cylindrical shape, they were interconnected each other by intercalated discs and forming a three-dimensional network. Such chordae were referred to false chordae tendineae of muscular type. Besides, the peculiarity of the false chordae tendineae of muscular and fibro-muscular type was that they had the elements of the conduction system. The presence of Purkinje cells is considered as a cause of cardiac arrhythmias and an additional ways of conducting impulses along false chordae tendineae. Fibro-muscular type of the false chordae tendineae localized mainly in the middle part of the left ventricle, in contrast to the false chordae tendineae of the muscular type, which were located in the apex of the left ventricle. The thickness of the fibrous type false chordae tendineae ranged from 0.7 to 1.5 mm, of the fibrous-muscular type false chordae tendineae was from 1.5 mm to 2.5 mm, the muscular type chordae were the thickest - 2.0-3.0 mm.

Thus, the results of investigations showed that the false chordae tendineae had different topography in the cavity of the left ventricle. Based on complex morphological studies false chordae tendineae histologically were divided into the fibrous, fibro-muscular and muscular types.