

The Neurovascular Correlation of Myocardial Bridges with the Anterior Interventricular Branch

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The aim of this article consists in a concise presentation of the ramus interventricularis anterior (RIA) perivascular nerves distribution and their interrelations with myocardial bridges (MB). Our study was realized on 95 isolated formalized human hearts. The macroscopical study was carried out by thin anatomic preparation of the coronary vessels, under a binocular magnifier; at the macro-microscopic level we colored with Schiff's reagent the coronary vessels and the surrounding perivascular adipose tissue; microscopically were studied transverse cross-sections through the musculovascular complex colored with hematoxylin-eosin and with picrofuxin by van Gieson. Macroscopically MB were revealed in 62% of cases. They settled down on the course of RIA in 39%, along the first marginal branch of the left ventricle in 18%, and in a few cases on the distal thirds of the right coronary artery, on the course of the anterior right terminal ventricular branches and on the posterior interventricular branch. Considering the frequency of MB situated on the RIA and the possibility of the vessel systolic compression in the underbridged segment, we studied the variants of the perivascular arrangement of the nerves to determine their involvement under the MB, and the possibility of the eventual systolic compression. By coloring the total anatomic specimens with Schiff's reagent, we established non-uniform distribution and density of the perivascular nerves of the RIA. In the proximal third of the vessel were revealed a few, large, parallel nervous trunks with a minimum quantity of anastomoses between them; their arrangement mainly was superficial, that reduces to the minimum the opportunity of their involvement under the muscular bridge. In the middle third of the AIB the nervous network was well developed, formed by descendent nerve trunks and final branches coming from the posterior surface of the heart. The nervous structures in this region were situated at all levels of the fatty tissue that increases the opportunity of their involvement under the MB. In the distal third of the RIA was revealed a dense network of nerves that enters the myocardium together with blood vessels. These nerves form wide connections with the final branches from the diaphragmatic surface of the heart. In this case the opportunity of the arrangement of the nervous trunks under MB is quite great. On cross-section through MB and the vessel which it covers, a large number of perivascular nervous trunks were revealed, located between MB and vessel adventitial membrane. One of the methods of surgical treatment of symptomatic MB is their transversal myotomy at which realization it is necessary to consider an opportunity of hearts innervations impairments. The received information shows the possibility to be involved under the MB not only the vessels, but also nerves of different caliber that can lead to their systolic compression.

The Obturatory Artery Correlation

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One of the basic lacks of applied methods of radiological research of vessels is their small informativity that can be caused by: 1) frequently poor-quality contrast of vessels therefore it is necessary to carry out repeated research; 2) some anatomic features of arteries (their tortuosity, deformation as a result of the atherosclerosis, etc.) in which result the contrast substance cannot fill