

**O.A.Gorustovich  
E.S.Okolokulak**

Grodno state medical  
university, Republic  
of Belarus

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## **CRYODISSECTION OF VESSELS OF THE HUMAN HEART**

**ABSTRACT. Background.** One of the most actual problems of applied morphology is the problem of demonstrativeness. In the educational process it is important to demonstrate the organs taken from the human body with all features of their structure preserved. The basic method of normal anatomy is a dissection of cadaveric material. It gives anatomical preparations demonstrating the structure of the human body. But classical dissection has certain difficulties: the complexity of layer-by-layer tissue separation and extraction of important anatomical structures. Currently for the manufacture of anatomical preparations a number of other methods are used: method of corrosion and polymeric embalming. However these techniques are time consuming, expensive, and also can cause damage to the structures of the heart during their extraction out of adipose tissue. **Objective.** To create a new method for the dissection of the human heart, allowing to reduce the time and to improve the quality of the preparations. **Methods.** We have prepared two solutions with different freezing temperature. Tissue which needed to be preserved (myocardium) was impregnated with solution №1. Tissue that need to be deleted (adipose tissue), impregnated with solution №2. After freezing the heart myocardium frizzes, but unfrozen adipose tissue could be easily separated. We examined 30 human hearts: 15 preparations by the classical dissection, 15 preparations with the help of cryodissection. **Results.** Preparation of hearts by the classical method took about 180 minutes, with the help of cryodissection – 30 minutes. Visualization of the coronary arteries and their branches after our method is better, myocardium is smooth, also preserve the natural color of the drug. Additionally, there is no contact of the researcher with harmful conservatives (for example formaldehyde). **Conclusion.** We have developed a method for dissection of cadaveric material, which improves the quality of anatomical preparations and reduces the time of their creation.

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✉ olga\_g\_a@tut.by

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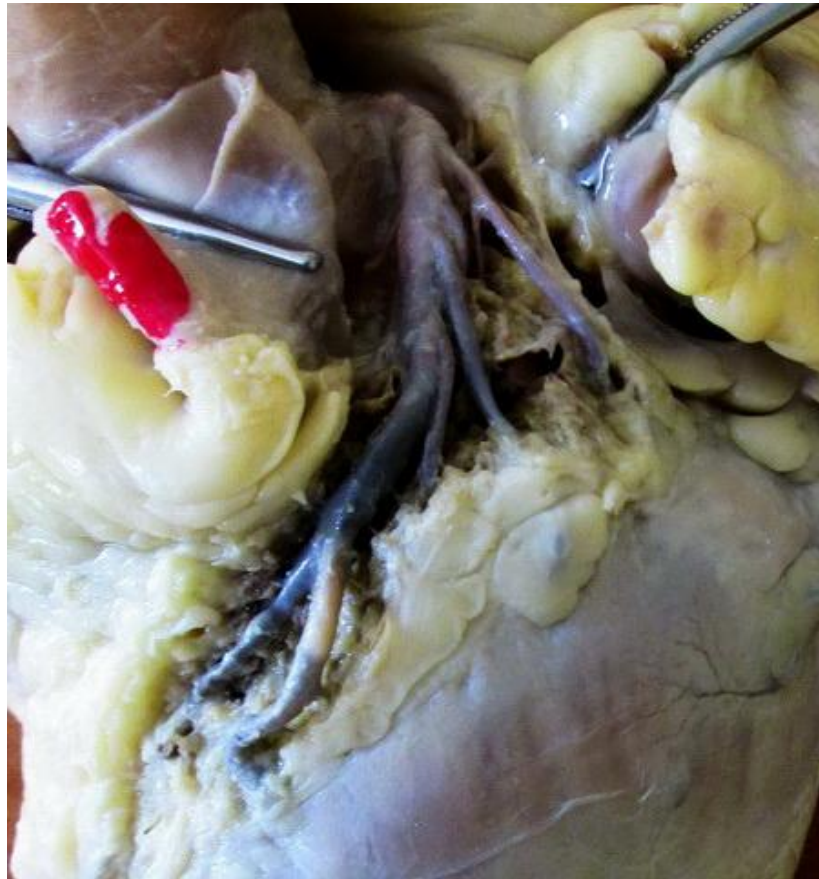


Fig. 1. Heart arteries preparation made with classical dissection methods.

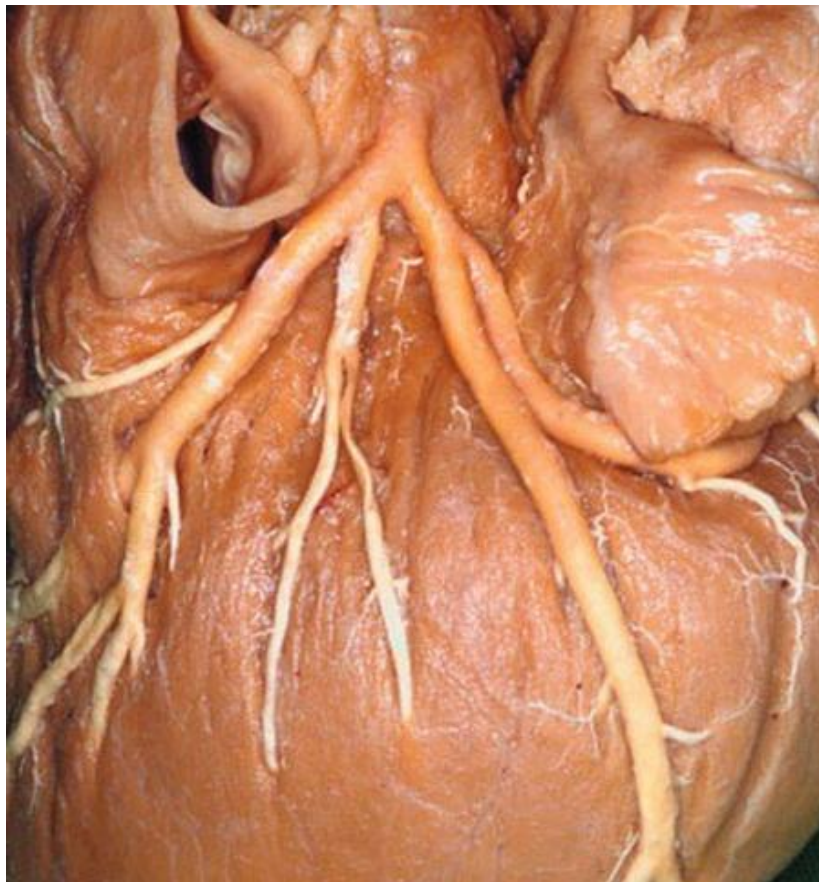


Fig. 2. Heart arteries preparation made with cryodissection method.

## *References*

1. Hilkevich SV, Volchkevich DA, authors; Vorobyev VV, editor. [Training anatomical preparations of heart, brain, eye: method of making, description]. Grodno: GrGMU; 2010. 35 p. Russian.

2. Prives MG, author; Ginzburg VV, editor. [Methods for conservation of anatomical preparations]. MedGiz; 1956. 127 p. Russian.

3. Yaroslavtsev BM, author; Znamenskiy MS, editor. [The anatomical technique]. Frunze; 1961. 436 p. Russian.

4. Goncharov NI, Speranskiy LS, Krayushkin AI, DmitrienkoSV, authors; Valishin ES, editor. [Manual on preparation and production of anatomical preparations]. Moscow: Meditsinskaia kniga; 2002. 192 p. Russian.

GayvoronskiyIV, Gayvoronskiy AI, Nichiporuk GI.[The polymeric embalming - innovative technology in the morphology]. In: [Proceedings of the Russian Forum 'Pirogov's surgical week'; 2010 Nov 24-28; St Petersburg]. Vestnik of St Petersburg State University: Series 11, Medicine. 2010;(Suppl):22-3. Russian.