

SEPARATE ORIGINS OF THE MAIN COMPONENTS OF THE LEFT CORONARY ARTERY IN SHORTHAIR DOMESTIC CAT

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Introduction: The left coronary artery originates from the left aortic sinus. Usually it is assumed that the main trunk is divided into two terminal vessels: the paraconal interventricular branch and the circumflex branch. There are also some reports on a tripartite architecture of the trunk of the left coronary artery.

Aim: The goal of this paper was to describe the separate origins of the main components of the left coronary artery in shorthair domestic cat.

Material and methods: The study was performed on 48 hearts of female and male adult shorthair domestic cats. The tests were carried out in accordance with the Resolution No. 16/2009 of the III Regional Ethics Committee for animal testing in Warsaw. A distinct view of subepicardial arterial vessels was possible due to their fulfillment with dyed synthetic latex (LBS 3060) and self-curing orthodontic acrylic resin (DURACRYL® PLUS). The further stage of the study consisted in a detailed preparation of the left main coronary artery trunk with the use of Ecleris surgical microscope.

Results: Owing to the differences of terminal vessels branches in the studied group, two types of the main trunk architecture were determined. In 36 cats (75%) the tripartite main trunk, divided into the paraconal interventricular branch, the circumflex branch and the septal branch was described (fig. 1). In 11 specimens (22.92%) the bipartite main trunk, divided into the paraconal interventricular branch and the circumflex branch was present (fig. 2). In one studied specimen (2.08) the origin of the paraconal interventricular branch and the circumflex branch were located in the left aortic sinus (fig. 3). In this case the left coronary main trunk was absent. This report seems to be the first to describe the separate origins of the main branches of the left coronary artery in carnivores. In human the congenital coronary artery may entail the risk of clinical complications. None of the studied cats showed signs of disease.

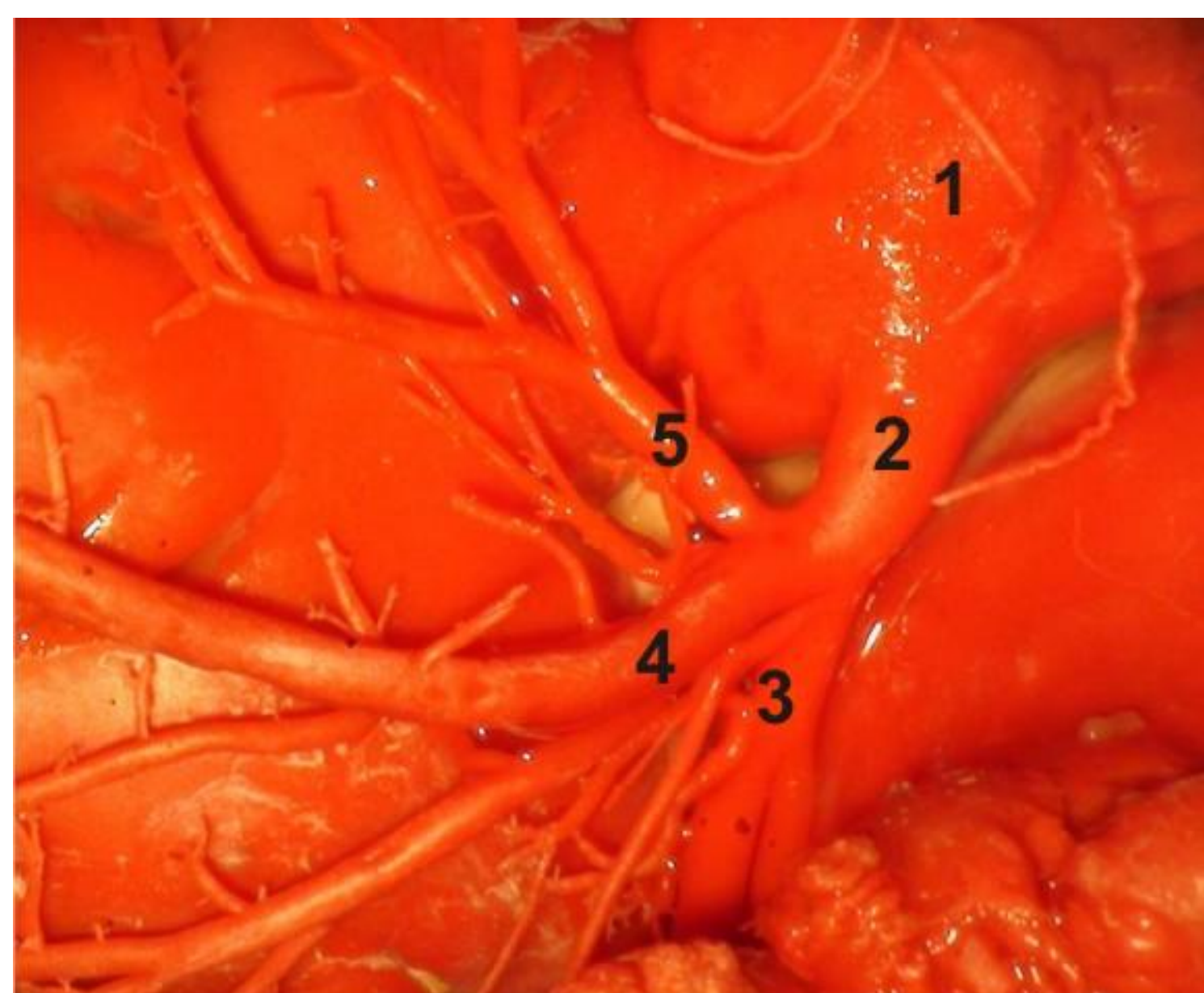


Fig. 1. Tripartite left coronary trunk.
1 – left semilunar cusp, 2 – left coronary trunk, 3 – circumflex branch, 4 – paraconal interventricular branch, 5 – septal branch

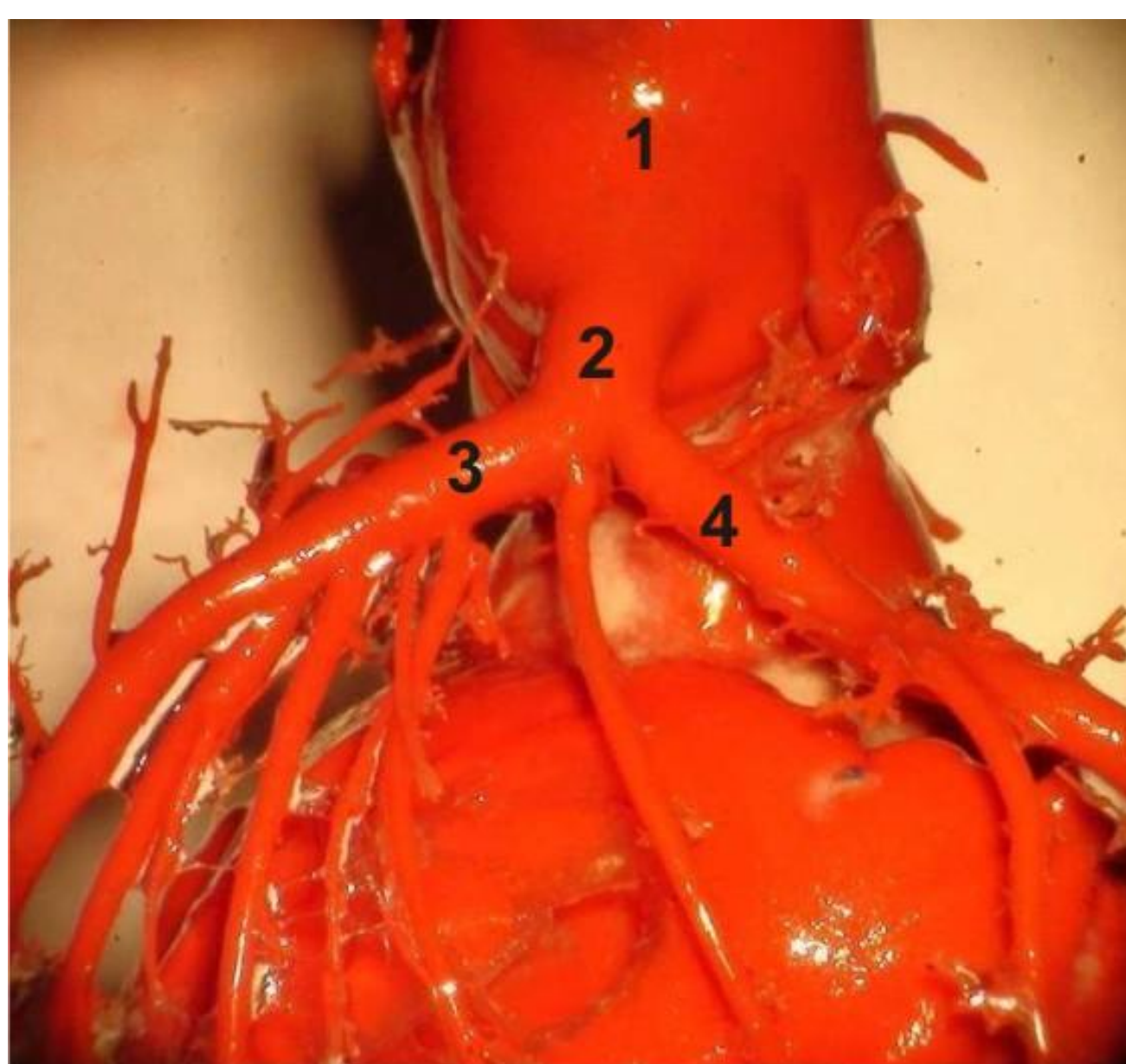


Fig. 2. Bipartite left coronary trunk.
1 – left semilunar cusp, 2 – left coronary trunk, 3 – paraconal interventricular branch, 4 – circumflex branch

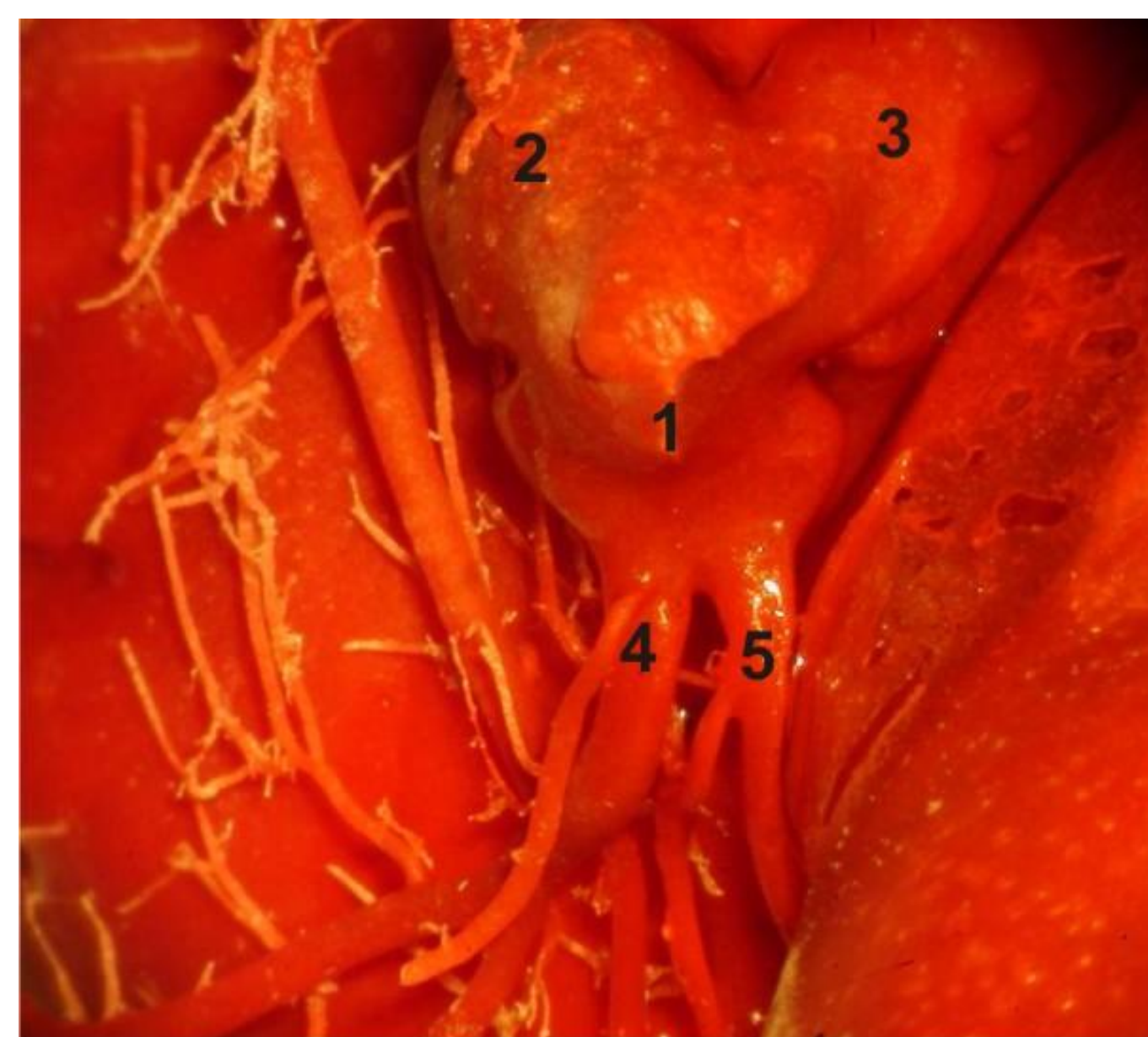


Fig. 3. 1 – left semilunar cusp, 2 – right semilunar cusp, 3 – septal semilunar cusp, 4 – paraconal interventricular branch, 5 – circumflex branch