

REVIEW OF RECENT BOOKS

The Clinical Anatomy of the Coronary Arteries by Horia Muresian
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This first edition on the anatomy of the arteries and veins of the heart and related anatomy is based on a 10-year effort by the author to expand his knowledge of this subject and perform dissection of 100 human hearts. The many photographs of anatomy were all done by the author are of exemplary quality, and demonstrate carefully dissected specimens to illustrate common and uncommon vagaries of the coronary circulation. Coronary angiograms are used to supplement the dissections and provide a clinical reality.

The author's perspective as a cardiac surgeon is broadened by his long interest in anatomy and its clinical implications, his familiarity with coronary angiography, and his desire to demonstrate subtle but occasionally important aspects of the coronary circulation as they bear on myocardial perfusion and also function of the valves and the electrical system.

Chapter 1 relates coronary and cardiac terminology and its evolution. In the multipage Table he lists Latin and English terms side-by-side and then "Notes." Under the latter he compiles "not" to be used terminology, which I agree with. Throughout the text, however, he frequently uses "not" terminology (diagonal, obtuse or acute marginal, retroventricular), which I found disappointing, seemingly in an effort to keep the reader comfortable with the familiar rather than learning "correct" terminology. Interestingly ramus intermedius is not included in the Table but is in Appendix 2.

Appendix 3 is about the conus branch which when it has an independent aortic ostium or one in common with the right coronary artery has been called the "third coronary artery" after the right and left. Appendix 4 briefly deals with regional perfusion heterogeneity as influenced by coronary and cardiac anatomy and intrinsic vascular resistance as well as that provided by wall tension and cavitory pressure.

Collateral circulation and its anatomic and hemodynamic determinants are discussed in Chapter 4. Chapter 5 relates

anatomic and physiologic properties of the microcirculation as well as information transfer, remodeling, and reperfusion injury. Coronary anomalies are presented in Chapter 6 along with arteriovenous fistulas and coronary aneurysms. There is a limited discussion of coronary anomalies in congenital heart disease.

Chapter 7 on myocardial bridging contains 59 references, which is more than any other chapter and belies its importance and reflects ongoing debate over significance. The author's finding of 23% prevalence vs its rare clinical manifestation indicates a need for awareness but not overly zealous treatment.

Chapters 8 and 9 focus on vascularization of particular cardiac areas: the interventricular septum, the atria and the sinoatrial node, the atrioventricular node, right and left bundles of His, pulmonary infundibulum, aortic root, and papillary muscles of the tricuspid valve. These dissections depict complexities and variability of coronary anatomy that has clinical relevance to the surgeon and the invasive cardiologist and to our understanding of how coronary disease may alter function of the heart and its components.

In Chapter 10 the author discusses coronary anatomy and "preferential pathways" of major arteries, as reflecting embryology and development, and reveals more variability in the origin and proximal segment and greater constancy in the middle and distal portions of the epicardial arteries.

The last chapter addresses the issue of coronary dominance (typology) and the volume of myocardium supplied by the right and left coronaries. In the 100 hearts, 72% had a dominant right system, in 14% the left was dominant, in 8% it was balanced, and 6% could not be classified by classic criteria. However, Appendix 5 reports that almost 70% of the myocardial mass is supplied by the left coronary artery, and of the ventricular mass, nearly 80% is supplied by the left. Thus, typology fails to identify that the left coronary artery almost always supplies more than 50% of the ventricular myocardium and is therefore dominant.

This book represents great effort by the author to create an artistic masterpiece that depicts many unappreciated facets of the coronary circulation that have clinical relevance. It would be valuable to the cardiac surgeon, whether nascent or seasoned, the cardiologist, and to all with an interest in the heart.