EDITORIALS

Relationship of the Development of the Ventricular Septum to the Position of Ventricular Septal Defects

It is refreshing to read the articles in this issue of CHEST by Drs. Goor, Edwards, Lillehei and Rees (see pages 453, 468) on the development of the ventricular septum and on the position of isolated ventricular septal defects anatomically and embryologically. These communications enhance the literature on congenital heart disease. It is of significance that these reports come from pathologic and surgical laboratories rather than from an anatomic or embryologic laboratory. The pathologist and surgeon are confronted with the data of congenital heart disease, and it is these data which send them to their embryologic sources for their explanation.

There is a significant departure in American literature in the description of the development of the ventricular septum by Drs. Goor, Edwards and Lillehei. The concept that the posterior ventricular septum (septum ventriculorum proprium) consists of two parts developmentally, instead of one, as described in the American literature, deserves attention. This corresponds in a general way to the work of Pernkopf and Wirtinger,1 recently confirmed by Asami.2 In the terminology of the latter authors, the ventriculobulbar loop consists of proampulla, metaampulla, and bulbus. There is an interampullary ring between the pro- and metaampulla. With the growth and shift of the auricular canal towards the right, this interampullary ring is, in part, converted into a posterior septum (septum proprium). This posterior septum lies between the two sides of the inflow tract. Upon this in grafted the intermetaampullary septum between the two parts of the metaampulla, and later the bulbar septum from the bulbar ridges and pars membranacea from the endocardial cushions and perhaps the bulbar ridges. The difference between authors is fundamentally a semantic one, as to whether the intermetaampullary septum should be called posterior or anterior. Goor and his associates call it posterior, while Pernkopf and Wirtinger would consider this part of the outflow septum and hence anterior. Thus, according to the latter authors, the conus septum in the definitive heart may be considered to consist of the previous bulbar septum and the metaampullary septum. Whichever terminology is used, Goor and his associates correctly depict a piece of septum which lies between the bulbar septum, and the most posterior part of the ventricular septum.

Concerning the position of defects, the extensive classification of Goor and his associates is certainly helpful to the pathologist and embryologist. It is perhaps a little too extensive for surgical use. I believe the localization of defects to the anatomic conus (not embryologic bulbus), to the anatomic sinus, to the pars membranacea and to any combination or borders thereof, would simplify the matter and would not interfere with the excellent embryologic concepts developed.

My congratulations to the authors for their useful correlation of embryology, anatomy and surgery in their consideration of ventricular septal defect.

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REFERENCES

1 Pernkopf E and Wirtinger W.: Die Transposition der Herzostien-ein Versuch der Erklärung dieser Erscheinung, Z Anat Entwicklungsgesch 100:563-711, 1933

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