Communication of the Coronary Sinus with the Left Atrium

By H. Edward MacMahon, M.D.

It is a very exceptional postmortem examination, when thoroughly done, that does not reveal one or more totally unsuspected developmental anomalies. The simple communication of the coronary sinus with the left atrium is such an example. Because this would appear to be an uncommon finding, it seems worthy of reporting.

The growing interest in developmental anomalies in all of the specialties today, lies not so much in the anomaly itself or in its histogenesis, as in the mechanisms involved in its genesis and in the technics concerned with its diagnosis and treatment. An objective description of the anomaly, as with descriptions of disease in general, would seem to have become of secondary importance. Yet, if one is to investigate an anomaly from the standpoint of etiology or pathogenesis, or if one is to attempt to correct it or to prevent it, or if one is to consider it in one's diagnosis, one must first be aware of its possible existence. The recording of all anomalies found in the course of every autopsy is, therefore, the responsibility of the pathologist. Their importance is not alone determined by their gross appearance or their functional significance, for a variant that is of little concern today may prove to be of considerable value to the investigator of the future.

Report of a Case

In the course of an autopsy on a young woman of 35 years of age, the ostium of the coronary sinus was found, as an incidental finding, entering the left atrium (fig. 1). The coronary sinus, its tributaries, the valve protecting the ostium, and the relation of the sinus to the right atrium were in every other respect normal. The endocardium of the right atrium, in the area of the normal location of the ostium of the coronary sinus, was in every respect smooth, glistening, and intact. There was no suggestion of scar formation and there was nothing to indicate the presence of an earlier communication of the coronary sinus with the right atrium. A detailed description of the heart seems unnecessary, since this displacement of the ostium of the coronary sinus was the only variation from normal. Additional findings in the remainder of the autopsy relative to the circulatory system are perhaps of interest, since an anomaly of the portal venous circulation within the liver, recently designated as "congenital hepatic fibrosis," led to varices in the esophagus and stomach and ultimately to the death of this patient.

Discussion

Anomalies of the coronary sinus and the coronary veins are common. Most of these are associated with other malformations of the heart and great vessels. Anomalies of the ostium of the coronary sinus have also been frequently reported, most of which deal with variations in the valve or with varying degrees of stenosis or atresia. Fieldstein and Pick,2 in 1942, described a case of uncomplicated atresia of the ostium of the coronary sinus together with the persistence of a small Thebesian vein linking the coronary sinus with the left atrium. In reviewing the literature to that time, they pointed out that this was the sixth of this type of anomaly to have been recorded. All were in adults and in no instance was there any evidence to suggest that this channeling of blood from the coronary sinus into the left atrium had been of any clinical significance. More recently, Edwards3 was able to collect nine cases of atresia of the ostium of the coronary sinus, and in all of these, Thebesian veins channeled blood from the sinus into the atria. In eight of the cases reported by Edwards, there were

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other cardiac anomalies. The type of anomaly described by these investigators would appear to have, from a functional standpoint, much in common with the case under discussion.

One of the responsibilities of learning a foreign language is to make use of it, and in searching the field at large a paper by Bauer published in 1896, in Germany, was found which may be the first description of this particular anomaly. In that case, the ostium of the coronary sinus was represented by a large semi-oval opening just to the left of the interatrial septum. The heart showed no other malformation. A second case, also described in the German literature, was reported by Ott in 1910. In this case, the anomaly was found in a heart showing healed rheumatic carditis with severe mitral stenosis and marked dilatation of both right and left atria. The coronary sinus was very distended but had no opening into the right atrium. Instead, the sinus entered the left atrium through an ostium just to the left of the interatrial septum. This was protected by a semicircular valve. In neither of these two cases, nor in the case under discussion, was there any evidence to suggest that this anatomic anomaly was functionally important. The similarity of these two cases and the present case seems obvious. The purpose of reporting this case is simply to bring to the attention of others an unusual developmental anomaly.

Summary

A communication of the coronary sinus with the left atrium in the absence of other congenital cardiac anomalies is an uncommon finding. Three cases are recorded, one of which is contributed by the author.

References

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