

Single Coronary Artery Arising From the Right Sinus of Valsalva

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A 46-year-old man presented with complaints of atypical chest pain and palpitation. The physical examination, standard electrocardiogram, exercise test and blood biochemical tests were normal. Coronary angiography was performed due to persistent atypical chest pain and revealed all three coronaries arising from a single coronary artery originating from the right sinus of Valsalva without atherosclerosis and other congenital cardiovascular malformations (Fig. 1-3). The anomalous left coronary artery (LCA) was taking anterior course. The patient was taken under follow-up with 100 mg/day metoprolol and aspirin therapies.

A single coronary artery arising from the aorta is associated with 5-20% of major coronary artery anomalies. The single artery may arise from the right or left sinus of Valsalva (1). Anomalous origin of the LCA from the right sinus of Valsalva is an uncommon problem, occurring in four distinct patterns (anterior, posterior, septal and interarterial course) (2). Usually it is asymptomatic but premature deaths have been associated with it, depending on its course. When the LCA passes between the aorta and the pulmonary trunk (interarterial course), acute myocardial ischemia or sudden cardiac death may occur (3). Atherosclerosis in the single coronary artery can have dire consequences since it supplies the whole heart. Other congenital malformations associated with this coronary anomaly include transposition of great vessels, truncus arteriosus, coronary-cameral fistula, tetralogy of Fallot and bicuspid aortic valves (1). Surgical correction or bypass surgeries are usually required in presence of other congenital malformations or myocardial ischemia.

Although angiography is useful for establishing the diagnosis, transesophageal echocardiography may be an important adjunctive diagnostic tool for defining the course of the vessels (4).

References

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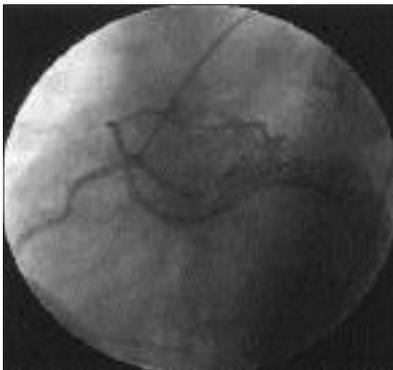


Figure 1. Left anterior oblique straight view.

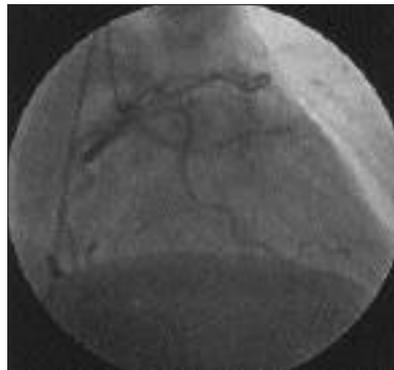


Figure 2. Right anterior oblique straight view.

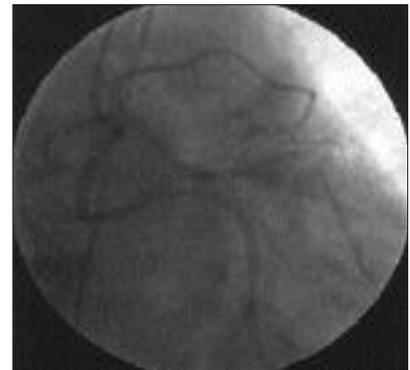


Figure 3. Right anterior oblique caudal view.