Extrinsic compression of the right coronary artery

Christos Eftychiou*, Georgios M. Georgiou, and Panayiotis Avraamides

Catheterisation Laboratory, Cardiology Department of Nicosia General Hospital, Nicosia, Cyprus

*Corresponding author. Tel: +35 799 692 149, Fax: +35 722 345 198, Email: chiou6christos@yahoo.com

A 59-year-old woman was admitted to our department for cardiac catheterization due to aortic stenosis and atypical for angina symptoms. She had her mitral valve replaced in 1993 with a mechanical bileaflet St Jude valve, due to severe mitral stenosis. She was also in chronic atrial fibrillation and was taking oral anticoagulants. The electrocardiogram showed atrial fibrillation and ST depression in leads I, II, III, aVF, and V3–V6. Transthoracic and transoesophageal echocardiogram showed that the mechanical mitral valve was functioning well. The left ventricle dimensions were within normal limits and the systolic function was also normal. However, moderate to severe aortic valve stenosis and moderate to severe aortic regurgitation were noted. The right ventricle systolic pressure (RVSP) was 30 mmHg.

The left ventriculography revealed very good systolic performance of the left ventricle. No mitral regurgitation was noted and the systolic pull-back gradient across the aortic valve was 50 mmHg. The aortogram showed normal dimensions of ascending aorta and moderate to severe aortic regurgitation. The left coronary arteries were free of intraluminal disease and the right coronary artery (RCA) was a large dominant artery. However a significant focal stenosis in RCA was noted proximally due to extrinsic compression caused by a large surgical sternal metallic suture, used during the previous cardiac surgery.

The focal stenosis caused by the metallic suture was probably causing the atypical for angina symptoms. The RCA was not thrombosed throughout the years, probably because of the anticoagulation treatment that the patient is receiving for the mechanical mitral valve and the chronic AF. The patient was referred to the cardiac surgeons for removal of the metallic suture and aortic valve replacement.

See online supplementary movie available at European Heart Journal online.

Panel A. LAO 45°, CRA 0° view of the RCA.
Panel B. LAO 0°, CRA 20° view of the RCA.
Panel C. LAO 90°, CRA 0° view of the RCA.
Panel D. Aortogram in LAO 45°, CRA 0° view.

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