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Balloon-assisted tracking deployment of a coronary sinus reducer through a Vieussens valve

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The presence of coronary sinus (CS) venous valves is a major cause of coronary sinus reducer (SR) implant failure. A 69-year-old man with previous revascularization with triple coronary artery bypass grafting presented with limiting effort angina refractory to treatment. Recent angiography due to effort angina showed the occlusion of the two saphenous vein grafts and patency of the arterial graft to the left anterior descending coronary artery (LAD) and severe diffuse disease at the LAD and left circumflex coronary artery, which were considered not suitable to further revascularization. Due to persistent and refractory symptoms despite maximal medical therapy and objective evidence of anterolateral-induced ischemia, the patient was planned for SR implant.

A 9 Fr sheath was inserted through the right jugular vein and a multipurpose 6 F catheter was advanced into the right atrium. The CS venography disclosed the presence of a Vieussens valve at the proximal CS segment. Several attempts were made to cross the venous valve with the 9 F guiding catheter, including the use of a high-support extra-back up 0.35¨ guidewire and a mother and child technique using the 6 F catheter into the guiding catheter, but the system could not be advanced. Finally, a 5 × 15 mm balloon was inflated at 4 atm partially emerging out from the tip of the 9 F guiding catheter. Then, the guiding catheter could be readily advanced beyond the valve (balloon-assisted tracking technique). Subsequently, the SR stent was easily implanted in the mid segment of the CS. Final venography showed a good apposition of the SR, with a minimal confined dissection without any complication (Fig. 1).

Conflict of interest: None declared

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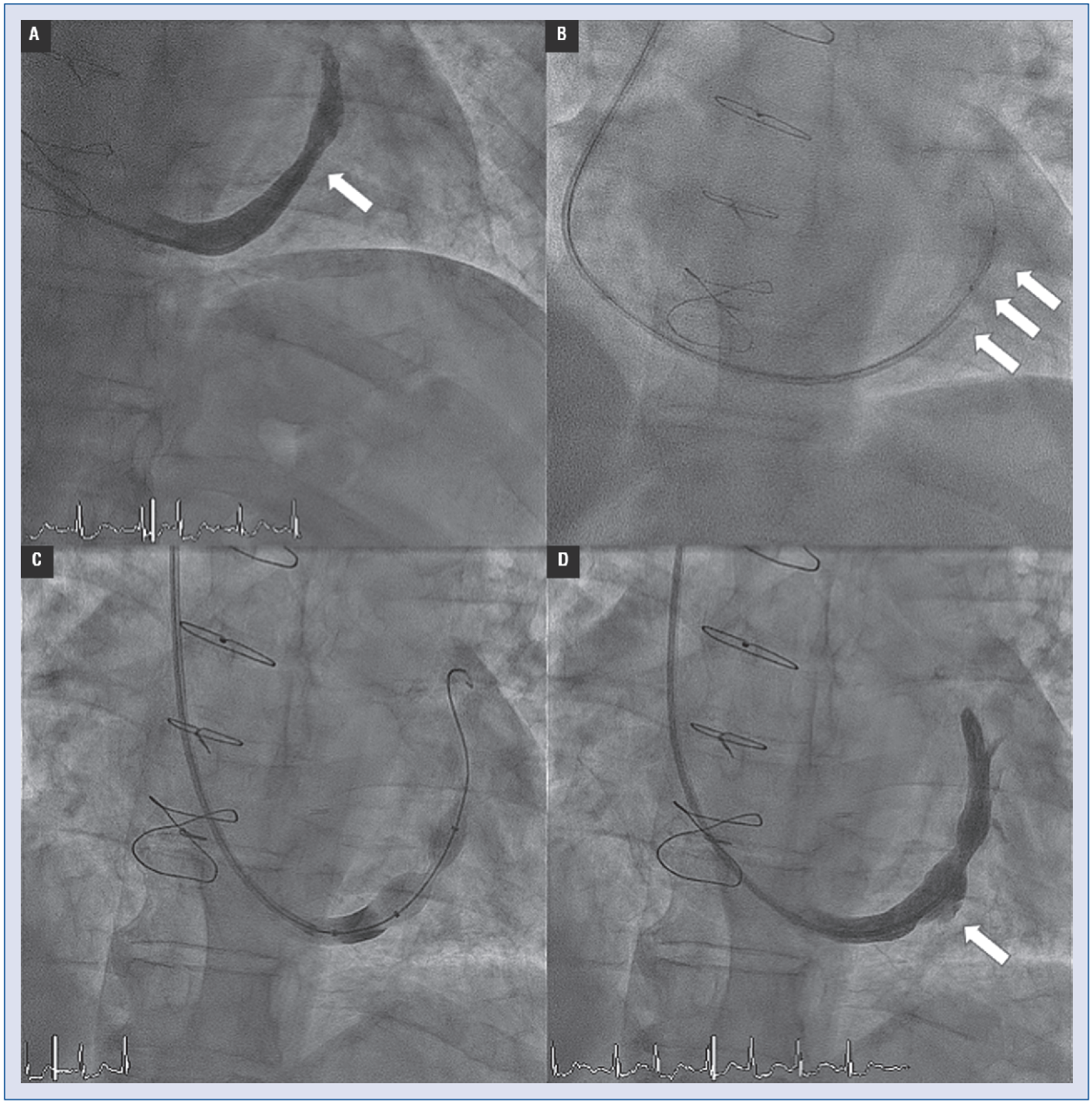

Figure 1. A. Retrograde coronary sinus (CS) venography showing the presence of a Vieussens valve (arrow); **B.** Guiding catheter advanced through the venous valve using the balloon-assisted tracking technique with a 5 mm balloon inflated at the tip of the guiding catheter (arrows); **C.** Coronary sinus reducer (SR) deployment in the CS; **D.** Final good angiographic result. A minimal dissection was present at the proximal edge of the SR (arrows).