

# Delayed Asymptomatic Thrombosis and Erosion of the Coronary Sinus After Transvenous Mitral Annuloplasty With the Viacor Device

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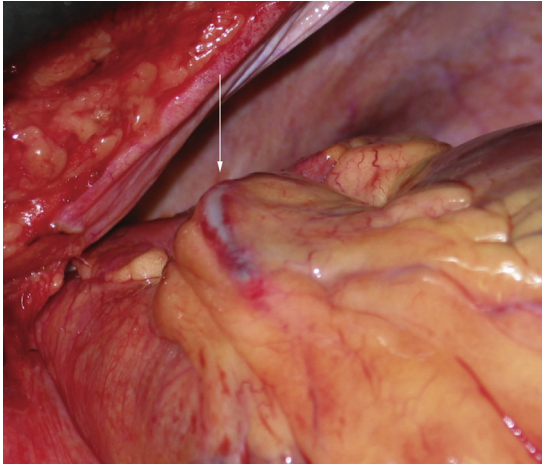


Fig 1.

The Viacor transvenous device conceptually aimed at reducing mitral regurgitation by improving leaflet coaptation through forward displacement of the coronary sinus and adjacent posterior mitral annulus. This happens through cinching the coronary sinus (CS) with a specially designed CS implant [1]. A 65-year-old woman with ischemic mitral regurgitation was operated on 1 year after this procedure. Inspection of the posterior atrio-ventricular groove showed evidence of thrombosis of the CS and linear erosion by the catheter of the wall of the great cardiac vein (Figs 1 and 2). Viewed from the right atrium, the CS os had shrunk on the rod-containing sheath catheter (Fig 3). After its removal, the os of the CS was reduced to a pinhole orifice. The patient underwent successful reductive annuloplasty. No bleeding from the CS occurred after the aorta was unclamped, which confirmed complete thrombosis of the CS and afferent veins.

This observation highlights the potential for adverse events when flexible semirigid rods are placed under tension to cinch the delicate structure of the CS for the purpose of indirect “annuloplasty.” Acute perforation of the great cardiac vein and extrinsic compression of the circumflex coronary artery have already been reported. Our observation suggests that chronic silent perforation

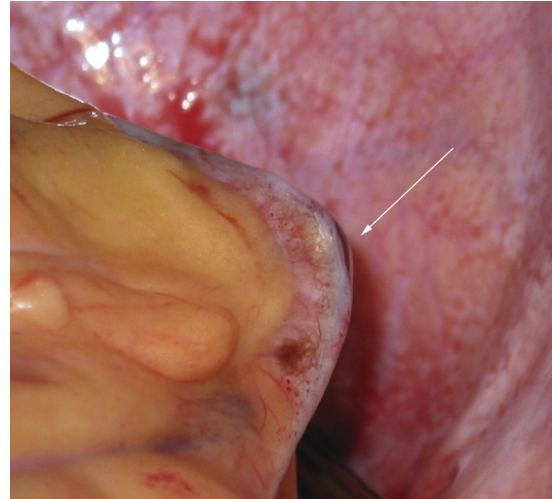


Fig 2.

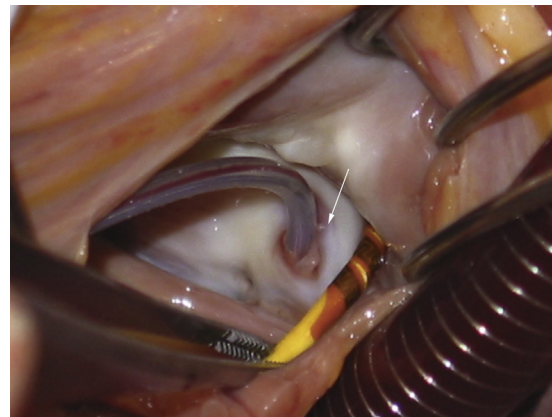


Fig 3.

may exist. It also demonstrates that unlike the potentially lethal acute occlusion, progressive thrombosis of the CS system may be well tolerated. This most likely happens through the development of the thebesian venous system.

## Reference

1. Sack S, Kahlert P, Bilodeau L, et al. Percutaneous transvenous mitral annuloplasty: initial human experience with a novel coronary sinus implant device. *Circ Cardiovasc Interv* 2009;2: 277–84.

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