CARDIOVASCULAR FLASHLIGHT

doi:10.1093/eurheartj/ehab564
Online publish-ahead-of-print 18 August 2021

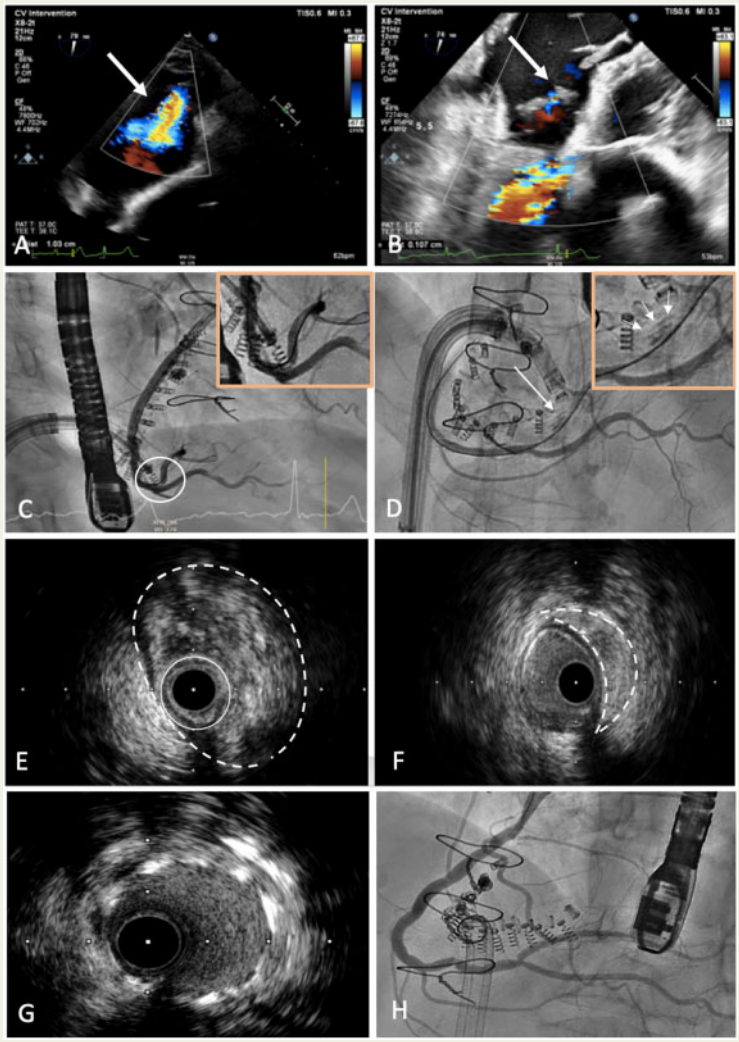
Coronary compression caused by extrinsic adventitial damage: case of an early complication of trans-catheter tricuspid annuloplasty with cardioband device

Francesco Maria Lauri *, Covadonga Fernández-Golfín, José Luis Zamorano, and Angel Sanchez-Recalde

Department of Cardiology, Hospital Universitario Ramón y Cajal, M-607, km. 9, 100, Madrid 28034, Spain

* Corresponding author. Tel: +34/913368957, Email: laurifm86@gmail.com

A 67-year-old woman with severe organic tricuspid regurgitation (TR) (*Panel A*) and progressive dyspnoea, peripheral oedema, and fatigue despite optimal medical treatment was scheduled for tricuspid annuloplasty with Cardioband device (Edwards Lifesciences, USA) according to Heart Team recommendations. Device anchors were implanted in counter-clockwise direction along tricuspid annulus checking catheter position under fluoroscopy and trans-oesophageal echocardiography before release. Nonetheless, when implanting the 16th anchor, push-and-pull manoeuvre revealed anchor interference with the guidewire (safety marker) into the postero-lateral branch (*Panel C*). Therefore, the anchor was retracted and coronary angiography revealed a large haematoma causing severe extravascular compression (*Panel D*). As the patient remained haemodynamically stable, the last two anchors were implanted and the device was stepwise contracted obtaining a significant downgrading of TR from severe to trivial (*Panel B*). Given the persistence of angiographic flow-limiting stenosis, even after nitroglycerine injection performed to exclude traumatic vasospasm, and the evidence of large extra-adventitial haematoma with severe compression of true lumen at intravascular ultrasound (*Panels E* and *F*), a drug-eluting stent was implanted (*Panel G*). Finally, residual minor haematoma in the right coronary artery bifurcation, non-flow limiting (*Panel H*), was managed conservatively with uneventful course. Intravascular imaging elucidates for the first time that one of the mechanisms of coronary occlusion associated to Cardioband annuloplasty procedure is the extrinsic adventitial damage produced by the anchors that leads to flow-limiting extra-adventitial haematoma. This represents a previously unknown insight into physiopathology of this complication and could help to outline the most appropriate treatment for it.



Conflict of interest: The authors have submitted their declaration which can be found in the article Supplementary Material online.