Sunil Wani, Christian Seiler  
Swiss Cardiovascular Center Bern, University Hospital, Bern, Switzerland

Transcoronary ablation of septal hypertrophy in HOCM: septal collaterals may cause unwanted inferior myocardial infarction

Case report

A patient with HOCM presented with worsening dyspnea on medical treatment with verapamil. Transcoronary ablation of the septal hypertrophy (TASH) via the 1st septal branch (SB) was performed. There were normal coronary arteries and a large 1st SB of the left anterior descending artery. It did not seem to receive or supply collaterals from or to the right coronary artery (RCA). The midventricular LV outflow tract (LVOT) obstruction was severe (fig. 1). TASH was performed with slow injection of absolute alcohol ([AA] 96%) over 25 min. Following injection of 5 ml of AA over 20 min, there was no fall in ΔP_{mean}. Therefore, an additional 3 ml was instilled, which lead to a decrease of resting ΔP_{mean} to 15 mm Hg (fig. 2). At that time, the patient complained of severe chest pain and contrast injection into the SB revealed filling of the occluded RCA via septal collaterals. There were simultaneous

Figure 1
A shows the large-sized 1st septal branch (SB; arrow) of the left anterior descending artery; B depicts the small normal right coronary artery (RCA); C over-the-wire balloon occlusion of the 1st SB; D injection of contrast through the balloon; E ECG tracing during septal ablation; F documents the pressure gradient between left ventricular cavity and aorta (ΔP_{mean}).
inferior ST-segment elevations. So far, there has been a similar case report speculating on the possible cause of septal collaterals for inferior or apical myocardial infarction during TASH [1]. Due to the fact that 80% of individuals with normal coronary arteries have at least some preformed recruitable collateral vessels ($\frac{1}{4}$ of them have collaterals which prevent signs of ischaemia during brief vascular occlusion) [2], the likelihood is high that with septal balloon occlusion collaterals to the RCA are recruited. The present report provides the first proof of “collateral damage” during TASH.

References
