

Sunil Wani, Christian Seiler

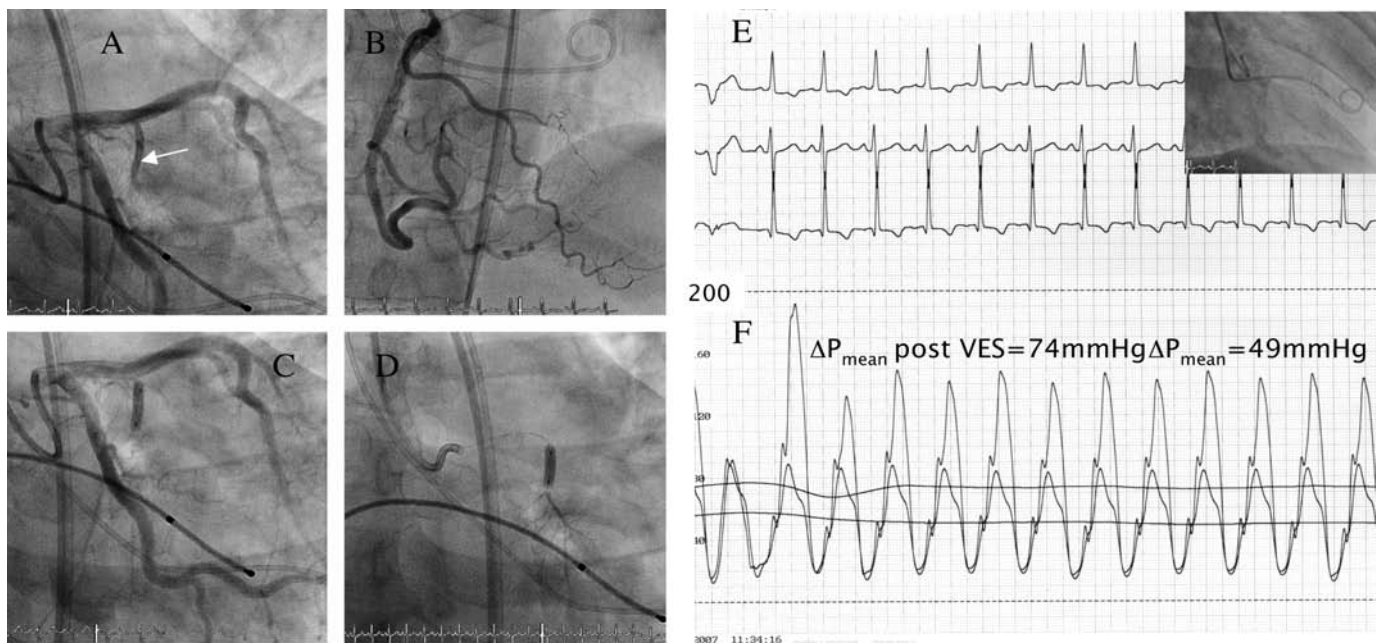
Swiss Cardiovascular Center Bern, University Hospital, Bern, Switzerland

# 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 1<sup>st</sup> septal branch (SB) was performed. There were normal coronary arteries and a large 1<sup>st</sup> 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  $\Delta P_{\text{mean}}$ . Therefore, an additional 3 ml was instilled, which led to a decrease of resting  $\Delta P_{\text{mean}}$  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

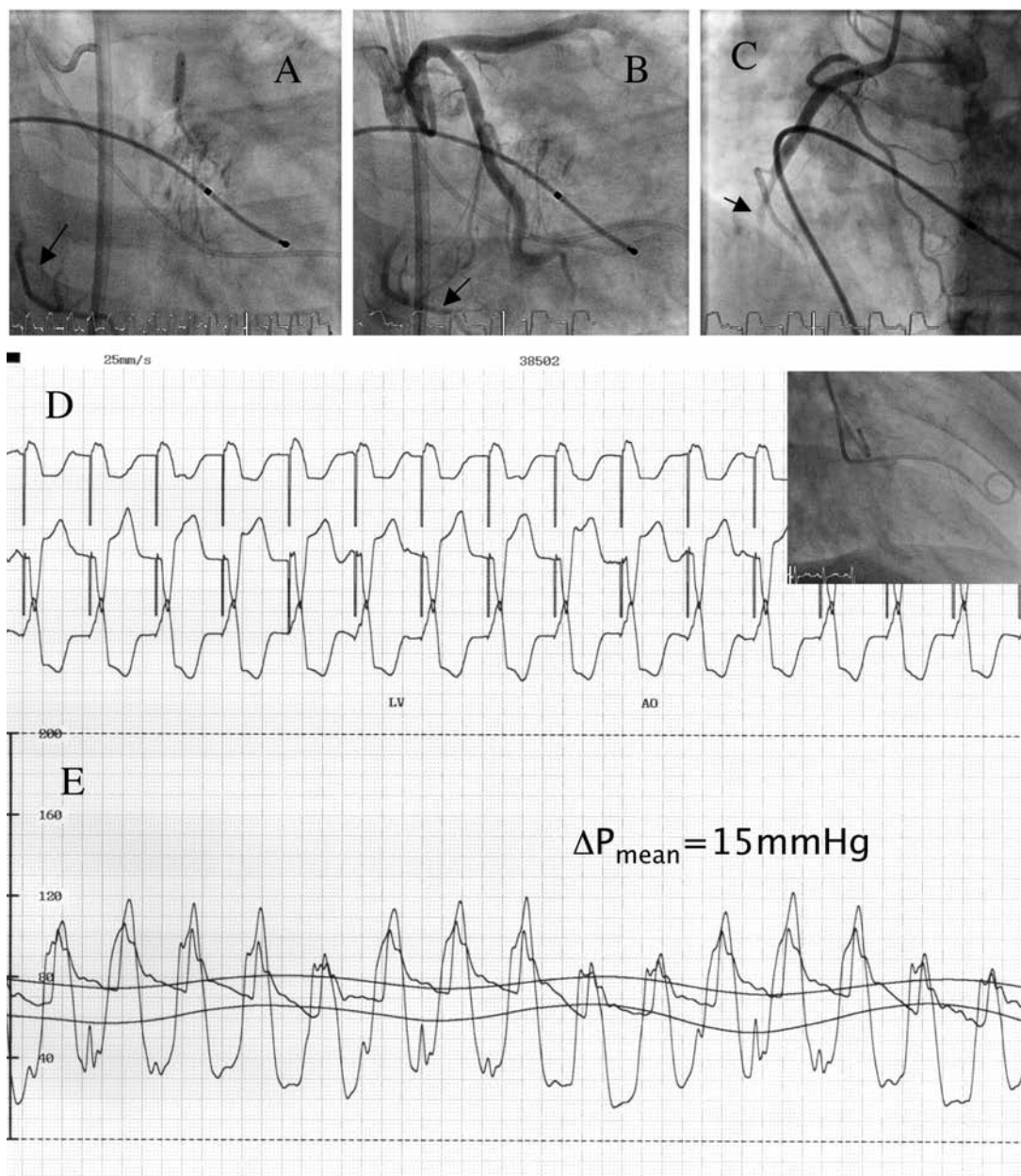


**Figure 1**  
 A shows the large-sized 1<sup>st</sup> septal branch (SB; arrow) of the left anterior descending artery;  
 B depicts the small normal right coronary artery (RCA);  
 C over-the-wire balloon occlusion of the 1<sup>st</sup> SB;  
 D injection of contrast through the balloon;  
 E ECG tracing during septal ablation;  
 F documents the pressure gradient between left ventricular cavity and aorta ( $\Delta P_{\text{mean}}$ ).

Correspondence:  
 Christian Seiler, M.D.  
 Professor of Cardiology  
 Swiss Cardiovascular Center Bern  
 University Hospital  
 CH-3010 Bern  
 Switzerland  
 E-Mail: christian.seiler@insel.ch

**Figure 2**

A and B show retrograde filling of the RCA (arrows) from the septal injection;  
 C Occlusion of the distal RCA (arrow);  
 D ST-T changes in the ECG;  
 E Reduction of the pressure gradient post alcohol ablation.



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 ( $1/4$  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

- 1 Chowdhary S, Galiwango P, Woo A, Schwartz L. Inferior infarction following alcohol septal ablation: A consequence of collateral damage? *Catheter Cardiovasc Interv.* 2007;69: 236–42.
- 2 Wustmann K, Zbinden S, Windecker S, Meier B, Seiler C. Is there functional collateral flow during vascular occlusion in angiographically normal coronary arteries? *Circulation.* 2003;107:2213–20.