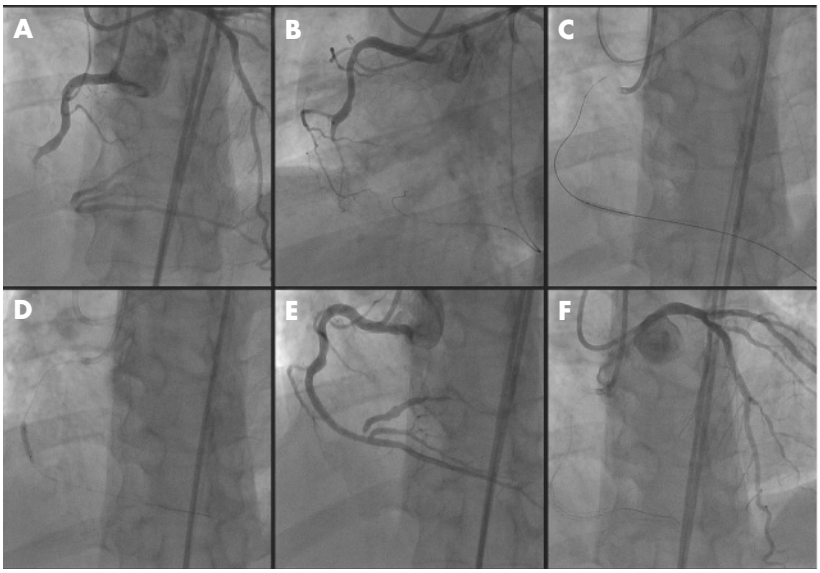
hospitals' income: the early experience of Israel. *Soc Sci Med* 2002;**55**:981–9.
15 Scottish Health Service Costs (Year Ended 31st March 1999). Information and Statistics Division, Scottish Executive. http://www.show.scot.nhs.uk (accessed 17 Oct 2006).
16 **Moscucci M**, Muller DW, Watts CM, *et al*. Reducing costs and improving outcomes of percutaneous coronary interventions. *Am J Manag Care* 2003;**9**:365–72.
17 **Jokhi PP**, Critoph C, Rozkovec A, *et al*. Is coronary angiography in unstable patients safe in district general hospitals without any on-site revascularisation? *Int J Cardiol* 2005;**105**:147–51.
18 **Leslie SJ**, Henriksen PA, Timlin H, *et al*. Urgent in-patient coronary angiography: a comparison of centres with and without cardiac catheter facilities. *Scott Med J* (In press).
19 **Lewis RQ**. Back to the future? *BMJ* 2004;**329**:932.

IMAGES IN CARDIOLOGY

doi: 10.1136/hrt.2006.091520

Retrograde coronary interventions of chronic total occlusions

A 43-year-old man presented with several months of effort angina. Angiography showed a totally occluded mid-portion obstruction of the right coronary artery (RCA) and very good collaterals from the left coronary artery, filling retrogradely the distal RCA (panel A). Multiple trials to cross the mid-RCA through an anterograde approach with various guide wires failed. Therefore, we finished the procedure and planned the retrograde RCA intervention after 2 days. Both coronary arteries were engaged by guiding catheters, and various guide wires were tried to pass the lesion through the collaterals retrogradely, but it was very difficult to pass the lesion (panel B). Finally, the guide wire (Conquest pro ASAHI INTECC, Osaka, Japan) passed the lesion with the support of a microcatheter (Renegade Boston Scientific, Natick, Massachusetts, USA). Then a 1.5–15 mm size percutaneous transluminal coronary angioplasty balloon (Ryujin, Terumo, Japan) was inserted through the collaterals via a retrograde guide wire and inflated to 10 atm (panel C). The second guide wire was introduced antegradely and easily passed the lesion. The lesion was successfully dilated (panel D) and two long Cypher stents (Cordis), 3.0–23 and 2.75–33 mm, were deployed over the antegrade wire. Panel E was the final angiograph. Finally, there were no visible collateral flows from the left coronary artery to d-RCA (panel F). The patient has remained asymptomatic for 3 months after angioplasty.



Successful intervention of chronic total occlusions has been reported to be associated with a favourable long-term outcome and may reduce the need for bypass surgery. If previous attempts to cross the totally occluded lesion from the anterograde approach fail, the retrograde approach from collaterals should be considered. This technique cannot be applied in all cases of chronic total occlusions, because it requires the presence of collaterals, but this method could be another choice for solving a problem.

J-Y Moon
D Choi
Y Jang
cdhlyj@yumc.yonsei.ac.kr

Competing interests: None declared.

Heart

Retrograde coronary interventions of chronic total occlusions

J-Y Moon, D Choi and Y Jang

Heart 2007 93: 199
doi: 10.1136/hrt.2006.091520