

Coronary Revascularisation Through Re-Sternotomy Utilising Arterial Conduits 47 Years After Correction Of Pectus Excavatum: An Unusual Technical Challenge

Dear Sir:

Pectus excavatum is a relatively common chest wall deformity described in 1594 by Johannes Schenk. It often warrants surgical correction in early age for cosmesis or, rarely, for respiratory impairment. Surgical access is through sternotomy.

Co-existing pectus and coronary disease has been tackled in single or two-stage procedures [Pevni 2000]. In such clinical scenarios, concern has been expressed for the feasibility of accessing the heart through sternotomy, cannulation for bypass and grafting with internal thoracic arteries (ITAs) [Choghari 1996, Kim 1999]. Coronary surgery through a redo sternotomy following repair of pectus has not been reported as yet.

We recently encountered a case of previous surgery for pectus in a 57-year old male with triple vessel coronary disease. The patient had had the operation at the age of 10 years. He had a median sternotomy scar and diffuse disease in the coronogram. Left ventricular function was excellent.

We operated through a re-sternotomy with an oscillating saw. Access was difficult due to the right lung adhering to the pericardial sac. The ITA retractor did not have a wide enough bite to accommodate the lower sternum without re-structuring.

Care was required to preserve and harvest the ITAs. Neither

had adequate length for straightforward pedicled grafting while the age of the patient suggested arterial conduits. We therefore anastomosed the ITAs to the left radial artery free graft by way of a single complex conduit from the left ITA pedicle to the radial and thence circumflex, free right ITA, left anterior descending and posterior descending arteries.

Cardiopulmonary bypass and intermittent antegrade cardioplegia posed no unusual problems. The sternum was re-approximated with standard intermittent steel sutures. A small right pneumothorax was treated conservatively. The patient experienced no other early complications.

We consider this case as an unusual technical challenge — post-operative retrosternal adhesions combined with malformed sternum precluded procurement of ITAs of standard length. It was still possible to perform sternotomy, standard cannulation and bypass and, in view of the young age of the patient, to pursue total arterial revascularisation.

Sincerely yours,

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