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Optimisation of internal thoracic artery exposure using a simple retraction method for extrapleural dissection

CA Efthymiou, WI Weir

Barts Health NHS Trust, UK

CORRESPONDENCE TO

Christopher Efthymiou, E: c_efthymiou@hotmail.com

BACKGROUND

The internal thoracic artery (ITA) is regarded as the conduit of choice for coronary revascularisation. When anastomosed to the left anterior descending artery, it confers a 10% survival benefit at ten years.¹ Studies have identified a risk of pulmonary complications following ITA harvest attributed to parenchymal trauma, pleural effusion and atelectasis as a result of pleurotomy. Maintaining pleural integrity

Figure 1 The use of two artery forceps attached at right angles enabling a swab to splint the ventilated lung away from the operative field during left internal thoracic dissection

Figure 2 A simple modification of the internal thoracic retractor using a ratcheted extension bar could be a more permanent solution to lack of surgical exposure caused by ventilated emphysematous lungs.

during ITA harvest improves respiratory mechanics by minimising injury to the lung.² However, the advantage of ‘opening’ the pleura is that a large swab can be packed into the chest, thereby preventing the inflated lung from obscuring the operative field. This technique cannot be used if the pleura is left intact.

TECHNIQUE

We have devised a simple adjunct to prevent lung expansion into the surgical field by using two artery forceps clipped together at right angles (Fig 1). This device enables a swab to be used to splint the lung away from the operative site and yet remain securely fixed during the ventilatory cycle.

DISCUSSION

This technique allows pleural integrity to be maintained during ITA harvest without compromising surgical access. The benefits of maintaining an intact pleura include the potential reduction in postoperative respiratory dysfunction, the attenuation of haemothorax, the prevention of ipsilateral pleurodesis and the elimination of chest tube thorascostomy requirement, which is not only painful but impairs the patient's ability to take deep breaths. A simple modification of the current sternal retractor used could be the next evolution of this technique (Fig 2).

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