Exposing the lateral and posterior surface of the heart during coronary revascularisation – a simple technique

Joseph Alex*, Chung Ko, J.M. Parmar
Cardiothoracic Surgery, North Staffordshire Royal Infirmary, Stoke on Trent, UK
Received 5 June 2003; received in revised form 21 October 2003; accepted 30 October 2003

Abstract
We describe a technique of exposing the lateral and posterior surfaces of the heart during coronary artery bypass grafting. This method provides very good steady state target vessel exposure, eversion and stabilisation, which are very important factors in determining the quality of the anastomosis.

© 2004 Elsevier B.V. All rights reserved.
Keywords: Technique; Exposure; Coronary artery; Anastomosis

1. Introduction
Revascularising target vessels on the lateral and posterior surfaces of the heart can sometimes be technically demanding and be further complicated by poor exposure and operating field instability. Janke [1], Galvina and Newman [2], Matsuura et al. [3], Kazama and Ishihara [4], Tripp and Selle [5], Badellino et al. [6] and Splittgerber et al. [7] have all devised methods to overcome these problems. We describe a technique that is simple, cheap, easily reproducible and especially useful in teaching situations.

2. Technique
We used two nylon tapes (6 mm × 70 cm Ethicon Nylon tape, Johnson and Johnson Intl, Belgium) for the technique. After achieving cardiopulmonary bypass, tape I was passed under the inferior vena cava into the oblique sinus, continued around and over the left superior and inferior pulmonary vein into the transverse sinus, the tape was then passed out of the transverse sinus between the aorta and superior vena cava, both ends of the tape were anchored with haemostats, to the drape on the operating surgeon’s side and the excess tape was trimmed off. Tape II was looped around tape I between the left inferior pulmonary vein and inferior vena cava (Fig. 1), tape I was then hitched up using tape II to form an ‘inverted V’ exposing the target vessel (Fig. 2). Excellent retraction, target vessel eversion and stability can be achieved by first fixing tape I, then applying optimum tension on it with tape II, before fixing tape II. On completion of the anastomosis the loop can be repositioned to expose the next target vessel.

Fig. 1. Illustration of tape insertion.
3. Discussion

Good target vessel exposure, stability and eversion of the arteriotomy lips are technical factors that contribute to the precision and quality of coronary anastomosis and also have a direct effect on the duration of cross-clamp and bypass. Immediate postoperative graft patency and freedom from occlusion are also in turn affected by the anastomosis quality. The technique that we have described provides atraumatic steady state target vessel exposure, stability and eversion. We also found it to be especially useful in teaching situations.

References