How to do it

Use of direct laryngoscope for better exposure in minimally invasive saphenous vein harvesting

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Abstract

A direct laryngoscope-assisted technique of saphenous vein harvesting by tunnelling method is described. This technique provides better exposure through small incisions, thus reducing the chances of trauma to the vein due to excessive handling. The equipment used is inexpensive and readily available.

Keywords: Minimally invasive saphenous vein harvesting; Cosmetic incision

1. Introduction

In this era of minimally invasive cardiac surgery, saphenous vein harvesting by minimally invasive methods is also becoming popular [1,2]. The main argument against the use of these methods is the inadequate exposure leading to excessive vein handling and compromised vein graft. We describe a modified technique of saphenous vein harvesting by the tunnelling method using the direct laryngoscope. The equipment used is reusable, inexpensive and readily available. This technique provides good exposure, thus, reducing the vein handling and consequent trauma.

2. Technique

The tunnelling technique involves multiple small transverse incisions starting in the groin. The saphenous vein is dissected down in a tunnel, the Mayo vein stripper (Johnson & Johnson) is then introduced and the vein is then taken out of the distal incision. The tributaries are clipped using Ligaclip. The process is repeated until the desired length of vein is obtained (Fig. 1). We found that the conventional lighting and retraction were cumbersome and did not provide good exposure within the tunnel. This increased the chances of vein handling and damage, thus compromising the quality of vein graft.

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We now use an ETO gas sterilized direct laryngoscope with the adult size blade for this purpose. After preliminary dissection around the saphenous vein, the laryngoscope blade is introduced through the skin incision into the subcutaneous tunnel. As seen in Fig. 2 this not only lights up the operative field, but also acts as a convenient retractor. This provides excellent exposure of the vein and its tributaries and reduces vein handling and trauma. Until now we have used this technique in 110 patients with satisfactory results.

3. Comment

The tunnelling technique for saphenous vein harvesting not only produces cosmetically better results but also has a lower incidence of wound infection than the traditional open harvest technique [3,4]. O’Regan and colleagues have shown that harvesting the saphenous vein with the Mayo stripper does not compromise vascular reactivity or long term patency of the venous conduit [2]. The main argument, against the use of this technique has been the risk of excessive vein handling and damage. This risk is a consequence of limited exposure and inadequate light within the tunnel. The laryngoscope technique described here provides good exposure and light within the operative field. The equipment used is reusable, inexpensive and readily available. We are also in the process of modifying the laryngoscope blade so that it may be used for still smaller incisions.
Fig. 1. Cosmetic result obtained after saphenous vein harvesting by the tunnelling method.

Fig. 2. Schematic drawing showing the use of direct laryngoscope in stripping of saphenous vein from the left thigh.

References


