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THE MODIFIED ADVENTITIAL INVERSION TECHNIQUE AS AN ALTERNATIVE METHOD FOR AORTIC REPAIR IN ACUTE TYPE A AORTIC DISSECTION: BALANCING COMPLEXITY AND EFFECTIVENESS

To the Editor:

We read with great interest the recent study by Yang and colleagues.¹ Their data showed that direct approximation of the aortic root and arch only using a 5-0 PROLENE running suture is an equally safe and effective method compared with buttress repair using Teflon or layer fixation with biological glue. The non-use of technical adjuvants allows the native aortic root to maintain its natural geometry and may potentially reduce valve dysfunction, formation of pseudoaneurysm, and graft-related infection. In this context, previous approaches of false-lumen obliteration without additional (technical) aids have been described. Tanaka and colleagues² described an adventitial conversing technique in 18 consecutive patients undergoing emergent repair of type A aortic dissection. This technique consists of inverting the redundant adventitia (surgically trimmed 1 cm longer compared with the intima edge) to the inner lumen of the aorta and tacking it to the intima by horizontal mattress sutures using 6-0 PROLENE. In addition, a 4-0 PROLENE running suture was used above the horizontal suture line for false-lumen occlusion. The use of the native aortic wall for aortic repair enables the surgeon to avoid technical adjuvants. The pliable adventitia easily fills fine suture holes, providing a leak-proof anastomosis. On the other hand, additional damage to the aorta is prevented by the use of fine sutures and small needles.

Although both techniques are very promising, our institutional experience suggests a modified adventitial inversion technique (Figure 1) in which the adventitial

FIGURE 1. Direct repair of aortic root in acute type A aortic dissection with 5-0 PROLENE running suture without horizontal mattress sutures.

inversion technique is simplified by reducing the horizontal mattress sutures while using a finer running suture (5-0 PROLENE) as used by Yang and colleagues. In fact, we believe that in patients with a normal root diameter a mattress suture can result in shortening of the circumference of the sinotubular junction, potentially leading to root deformation with consequent valve dysfunction.

In our opinion, a slightly finer suture makes the horizontal mattress technique unnecessary while applying the benefit of an “additional” layer (inverted adventitia). This way, an even more reliable obliteration of the false lumen is provided due to the previously stated characteristics of the adventitia. The modified adventitial inversion technique can be an alternative approach for aortic repair in acute type A aortic dissection, as it balances effectiveness with the right amount of surgical complexity.

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