

Review article

Proximal repair in acute type A aortic dissection: The dark side of the root

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Abstract

There is no agreement regarding the best treatment for proximal repair in acute type A aortic dissection. Isolated replacement of the ascending aorta has been shown effective but can leave patients at a higher risk of further aortic procedures. The interpretation of the results coming from the literature is difficult because of the great variability of the clinical scenarios and the anatomic extension of the dissection. The analysis of the risk factors suggests that the presence of the underlying root pathology and a more extensive involvement of the aortic root should address the surgeon towards a more radical proximal resection.

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Keywords: Aorta; Aortic dissection; Aortic root

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1. Introduction

Acute type A aortic dissection is a surgical emergency invariably burdened, if left untreated, by 90% mortality at 30-day. No randomized clinical trials have ever been conducted in patients with aortic dissection but data coming from clinical experiences widely demonstrated that a prompt surgical repair is the only therapeutic option able to convert the dismal natural history of this pathology into 70%–80% chance of early survival [1]. The cornerstone of the surgical treatment includes the resection of the intimal tear, the replacement of the intrapericardial aorta and the correction of concomitant aortic valve dysfunction. The first goal of the surgical operation is the survival of the patient. Nowadays, however, advances in diagnosis, surgical techniques and perioperative care led to improved early outcomes and the new goal is the achievement of durable results in the mid- and long-term period and a reduced risk of further aortic complications.

The long-standing debate about the opportunity of providing a simple and quick procedure or a more radical resection of the entire root with the reimplantation of the coronary ostia is still open. On this ground, there is no agreement regarding the best treatment and strategy in proximal repair.

2. The real world

A trend in proximal repair of aortic dissection can be delineated considering the results from large cohorts of patients as reported in literature. Fig. 1 summarised the techniques for proximal repair as they were described (1996–2013) in 17 different institutional experiences during the period 1967–2011 and globally involving more than 5000 patients [2–18]. In 95% of the cases, the replacement of the ascending aorta was associated with aortic root reconstruction (70%) or replacement (25%). The simple excision of the intimal tear followed by the direct suture of the ascending aorta is unusual and generally abandoned. Ascending aorta replacement and isolated aortic valve replacement accounted for 5% of the cases. This approach is generally reserved in presence of aortic leaflets abnormalities, calcification and dysfunction not dependent by alterations of the Valsalva sinuses or the sinotubular junction (STJ), and it is nowadays mostly performed in patients older than 70 years. Therefore, we can delineate and consider in our discussion two major groups: patients who undergo supracoronary aortic replacement and patients who receive aortic root replacement.

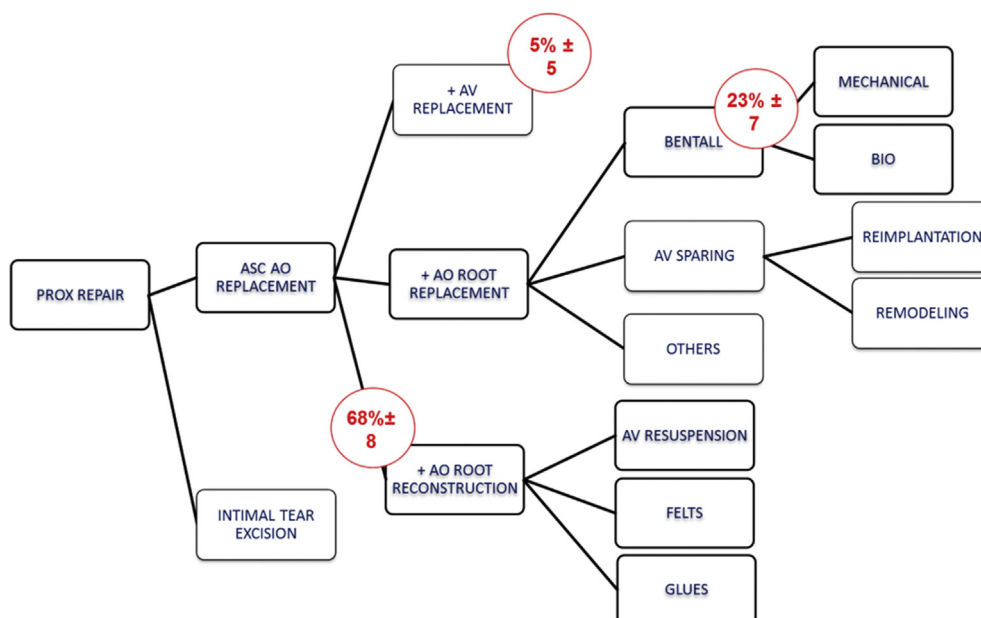


Fig. 1. Synoptic view of the surgical procedures performed for proximal repair in acute type A aortic dissection.

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