Reply to the Letter to the Editor

Reply to Al-Ebrahim

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Keywords: Chest wall; Mediastinum; Congenital malformation

First of all, we would like to thank Dr Al-Ebrahim for his important comments and contributions [1].

Second of all, we congratulate Dr Al-Ebrahim for this report of primary closure of a complete 6 cm sternal cleft in a 35-year-old patient. Although we do not have experience with patients who are 35 years old, we believe it would have been difficult to perform a direct primary closure in such a rigid thoracic cage. Even when operating on younger patients we had intraoperative compressive diastolic restriction and ventilatory difficulties.

We agree with Dr Al-Ebrahim that sternal fixation system plate could be ideal for patients with width sternal cleft, mainly for older patients with more rigid thoracic cage. But we also believe that sternal reconstruction for children with flexible and autologous materials should have some advantages. Flexible materials can follow the natural thoracic development and remodeling that occurs in childhood.

Dr Al-Ebrahim suggests that the left pleural opening would avoid cardiac compression. It is a very important suggestion, but we did not understand very well the physiologic function of unilateral left pleural opening, so we cannot discuss this maneuver.

We agree with Dr Al-Ebrahim that the sternal closure should be based on a simple technique. We believe that dissecting a peristeafl flap from the sternum and building a sternal bridge in the median plane is a simple technique [2]. We also agree that in cases where chondrotomies are needed, we are dealing with a more complex reconstruction, but chondrotomies followed by their medial sliding is an autologous tissue based reconstruction. It allows remodeling during chest wall development in younger patients, and for this reason we have chosen this technique rather than using titanium plates or other prosthetic materials.

In conclusion, we will also consider reconstructing sternal cleft with titanium plates in future cases, always when possible especially in older patients. Again, we would like to thank Dr Al-Ebrahim for his very interesting suggestion.

References


Letter to the Editor

Arterial cannulation for acute type A aortic dissection

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We read with great interest the recent article by the Hannover group describing their method for ascending aortic cannulation in the type A dissection setting [1]. However, the ideal method for arterial access in this lethal condition remains controversial. We agree with the authors that femoral artery cannulation for cardiopulmonary bypass in type A aortic dissection patients has possible complications such as cerebral embolisation and organ malperfusion. Axillary artery cannulation also involves problems because it requires a more precise technique and more time. It may result in insufficient flow rate in a small artery or cause retrograde carotid dissection and cerebral malperfusion when an intimal tear is present in the brachiocephalic artery or its branches [2]. Direct cannulation and clamping of the ascending aorta is risky in such a fragile aorta; furthermore, the Hannover group describe three patients (2.5%) with malperfusion [1], which is significant in our opinion. As a matter of principle, we never cross-clamp the dissected aorta. We apply the clamp to tube graft once distal anastomosis is completed on circulatory arrest.

In contrast, transapical aortic cannulation has the advantage of avoiding these problems; involves a simpler and quicker cannulation technique, provides a more physiological method of delivering antegrade arterial flow and is the only method to assure perfusion of true lumen. Recently, Wada and colleagues published their large series with excellent clinical results. In over 130 patients they had no malperfusion events with a low mortality of less than 20% and stroke rate of only 5.8% [3]. Our group has modified this technique to eliminate completely the risk of bleeding at the access site in the left ventricular apex, by using an epicardial 4 mm incision with a special cannula.
advanced under transoesophageal guidance through the aortic valve orifice [4]. Aortic valve leaflets rest against the cannula, which eliminates significant regurgitation [5]. Even in the rare case of left ventricular distention, this can be managed with pulmonary artery venting and regular squeeze of the ventricle. We remain convinced that transapical cannulation is the method of choice for quick and safe arterial cannulation in patients with type A aortic dissection. Our group has had excellent results since we started using it in 1995.

References


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Reply to Abunasra et al.
The exciting question of cannulation site in acute aortic dissection type A

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Keywords: Acute aortic dissection type A; Cannulation site; Aortic cross-clamping

We thank Mr Abunasra and co-workers for their comments and interest in our work [1].

Again, their remarks show that cannulation site is an important issue and still under controversial discussion.

In our opinion, the technique of direct ascending aortic cannulation can be performed with an acceptable failure rate compared to other techniques. Nevertheless, we congratulate Mr Abunasra and co-workers for their excellent results with the transapical approach.

To our knowledge, the technique of transapical cannulation in patients with acute aortic dissections type A (AADA) was initially described by Professor Hans Borst from Hannover in cases of malperfusion [2]. Prior to this publication this technique has been used in porcelain aortas [3]. One of the major drawbacks of this elegant technique is the prolonged cardiopulmonary bypass (CPB) and operation time due to the fact that aortic cross-clamping is not possible during cooling. Since the group from Leicester avoids cross-clamping of the dissected aorta as a matter of principle, this may not have a real impact [1]. We and others believe that saving CPB-time, which is significantly associated with an increased mortality in patients undergoing hypothermic circulatory arrest, is of utmost importance [4,5]. On the other hand, we understand the critical remarks of colleagues who may prefer other techniques than direct cannulation in AADA. Nevertheless, we are looking forward to the publication of Mr Abunasra’s experience with the transapical approach.

References


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