

follow-up is a little short to allow you to say that your method will solve the problem.

And finally, there is another pattern which you didn't allude to, which is the group that pays the highest toll to distal reoperation and complications. It is the group with connective tissue diseases and in particular Marfan patients. Would you propose to use stent-grafting in those Marfan patients to reduce this problem? And, incidentally, how many Marfan patients did you have among your 128 patients?

Dr Tsagakis: Regarding the first question, acute and chronic dissection are different diseases. However, we evaluated the antegrade stent-grafting with regard to the feasibility of it. We presented the acute and the chronic dissection together and the results were similar. So, we can conclude that antegrade stent-grafting is safe, not only in chronic cases under stable conditions, but also in acute under emergency conditions. For a definite answer with regard to stent grafting or not in acute dissection, a randomised study is needed, which is not very simple to perform.

Dr Bachet: But it's not possible to have a randomised study in acute dissection.

Quite impossible.

Dr Tsagakis: I have to agree. And now the second question was – I'm sorry?

Dr Bachet: The delay between the onset of the acute dissection and the reoperation.

Dr Tsagakis: The follow-up is short. These are early results and we have no long-term follow-up, so we cannot give a definitive answer for this. However, the stent-graft gives a secure landing zone for secondary endovascular intervention. And this landing zone is at the distal part of the descending aorta. If in the future a secondary surgery is required, then we have to replace the entire descending aorta.

We performed this procedure also in Marfan patients. In our clinic we had experience with aortic complications in Marfan related to struts. The E-vita

open has no bar springs and oversizing of the true lumen over 10% was avoided. Therefore aortic injury should be minimised. However, the one late death of the study cohort was a Marfan patient.

Dr S. Kucuker (Ankara, Turkey): Use of this graft mandates to replace the total arch. Was the intimal tear in the arch in these cases, or had you to replace the arch anyway? But didn't that increase your mortality?

Dr Tsagakis: The entry tear is maybe in the arch or in the ascending aorta. In chronic dissection, the indication for arch replacement and antegrade stent grafting is defined by the preoperative diagnosis. We know if we have to perform stent-grafting or not. In acute cases, stent grafting is performed in case of re-entry in the descending aorta. The arch has to be replaced.

Dr M. Motamedi (Tehran, Iran): My question is for treatment of the descending aorta which is dissected in these patients; our goal is to obliterate the false lumen to prevent delayed complications. And you presented, as we heard, a small but significant number of paraplegia due to the long stent-grafts in the descending aorta. So my question is: Do you have any recommendations or experience with just a bare-metal stent for the descending aorta to obliterate the false lumen and expand the true lumen, of course, if you do not have an intimal tear in the descending and if you do not have, say, a distal re-entry? So what is your idea of just a bare-metal stent instead of a stent-graft?

Dr Tsagakis: You mean rather than to perform a stent-grafting use a bare-metal stent?

Dr Motamedi: Yes, bare-metal stent.

Dr Tsagakis: The procedure aims to exclude reentries.

Dr Motamedi: Yes. If you don't have intimal tear in the descending aorta, what is your idea of just a bare-metal stent to obliterate the false lumen?

Dr Tsagakis: In this situation, then you could have a problem with a strut of the bare-metal stent, the edges of the stent, and this could produce aortic injury. In addition, if you don't have continuity between the graft and the stent-graft thereafter, the risk of a proximal endoleak is present.

Editorial comment

Arch replacement and downstream stent grafting in complex aortic dissection – first results of an international registry

Keywords: Type A dissection; Aortic arch surgery; Stent-graft placement

Surgical repair of classical acute type A dissection is tear oriented. As such, the extent of surgical repair is usually limited to the proximal segments extending more or less into the concavity of the aortic arch. However, it has to be realised that this approach may be insufficient as tear-oriented surgical repair may require total arch replacement in patients with primary entry tears within the arch or even in the descending aorta, which may be critical. These patients may also well be the ones at high risk for developing secondary aneurysmal formation in downstream segments necessitating treatment.

According to the author, we do have to fulfil two tasks: first, defining the patients at risk for and second, developing treatment algorithms to prevent late aneurysmal formation in patients after tear-oriented surgical repair of classical acute type A dissection.

Defining these patients is difficult and the Essen group has set new standards regarding this issue by aortoscopy during hypothermic arrest. Future reports will reconfirm the clinical value of this approach.

The second task is prevention during primary surgery. For this purpose, the frozen elephant trunk was developed. This approach combines two treatment concepts and provides a unique possibility to treat the entire aortic arch during primary surgery. However, how is the risk–benefit ratio of this approach? It is clear that surgery becomes more extensive and hazards such as paraplegia and rupture, especially in a freshly dissected fragile vascular system, do exist. Otherwise, if the concept works, the arch is treated and the remaining pathology is shifted to downstream segments, thereby facilitating potential thoraco-abdominal replacement in years to come.

Therefore, the main task is to define patients who will benefit most. To date, it seems that patients with complex dissections with entry tears within the arch and the descending aorta resulting in retrograde type A dissection as well as patients with aneurysms encompassing the entire thoracic aorta are the ones who benefit most from this approach due to the reasons mentioned.

Summarising, this article is of substantial value to get insights into the current results of this promising technique and we encourage the authors to continue to actively follow these patients and to provide us with regular updates regarding aortic-related outcome [1].

Reference

- [1] Tsagakis K, Pacini D, Di Bartolomeo R, Benedik J, Cerny S, Grolitzer M, Grabenwoger M, Mestres CA, Jakob H. Arch replacement and downstream stent grafting in complex aortic dissection — first results of an international registry. *Eur J Cardiothorac Surg* 2011;39:87–94.

Martin Czerny*

*Department of Cardiovascular Surgery,
University Hospital Berne, Berne, Switzerland*

*Corresponding author. Address: Freiburgstrasse,
CH-3010, Berne, Switzerland.

Tel.: +41 31 632 2376; fax: +41 31 632 2919

E-mail addresses: martin.czerny@meduniwien.ac.at
martin.czerny@insel.ch

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