aortic cannulation. At this point, it is important to point out that epiaortic scanning and TEE are only means of confirming a cannulation site, initially planned after careful examination of preoperative computed tomography scans. Our concern is that aortic decompression may alter the true and false lumen arrangement as seen on computed tomography or make identification of the flap delineating the true lumen from the false lumen more difficult at times. In our experience, we found no necessity for aortic decompression before cannulation, and decided that the minimally traumatic nature of the Seldinger technique for cannulation reduces any potential risk of aortic rupture. In a series of 122 patients, the Hannover group previously reported ascending aortic cannulation in acute aortic dissection type A. Similar to our experience, no aortic decompression was necessary before cannulation. Even without precautions such as guidance of epiaortic scanning or the use of Seldinger technique, there was only 1 incidence of aortic rupture that occurred spontaneously after institution of cardiopulmonary bypass, rather than during aortic cannulation.³ Ensuring antegrade flow from the start of the procedure obviates the need for femoral cannulation, along with its potential risks and complications. The time saved by such a straightforward aortic cannulation may be of importance in unstable patients.

Finally, we commend the authors for an important and fine article, and look forward to their response.

Hesham Zayed Saleh, MRCS, MD

Mark Field, FRCS

Manoj Kuduvali, FRCS

Aung Y. Oo, FRCS

Department of Cardiothoracic Surgery

Liverpool Heart and Chest Hospital

Liverpool, United Kingdom

References

1. Inoue Y, Takahashi R, Ueda T, Yozu R. Synchronized epiaortic two-dimensional and color Doppler echocardiographic guidance enables routine as-

cending aortic cannulation in type A acute aortic dissection. *J Thorac Cardiovasc Surg.* 2011;141:354-60.

2. Göbölös L, Philipp A, Foltan M, Wiebe K. Surgical management for Stanford type A aortic dissection: direct cannulation of real lumen at the level of the Botallo's ligament by Seldinger technique. *Interact Cardiovasc Thorac Surg.* 2008;7:1107-9.
3. Khaladj N, Shrestha M, Peterss S, Strueber M, Karck M, Pichlmaier M, et al. Ascending aortic cannulation in acute aortic dissection type A: the Hannover experience. *Eur J Cardiothorac Surg.* 2008;34:792-6.

doi:10.1016/j.jtcvs.2011.03.033

Reply to the Editor:

We appreciate the interest in our work¹ and are pleased to reply the comments.

First, through our experiences of 108 cases, to establish true lumen antegrade perfusion firmly, confirmation of the apical location of arterial entry catheter within the true lumen of ascending aorta is indispensable,² and then the guide wire and cannula would inevitably be placed within the true lumen of ascending aorta. We use epiaortic echocardiography as an anatomic guidance for cannulation and transesophageal echocardiography (TEE) as cardiac monitoring, because TEE cannot provide sufficient information of the ascending aorta to the proximal arch.³ If there is no intention to place the cannula distally to transverse arch, there is no need to insert the guide wire deep into the level of descending aorta. Inadequate position of the guide wire may result in wrong positioning of the cannula. Even if you see the guide wire within the descending aorta by TEE, it does not ensure that it is within the true lumen throughout its length. Because there is often more than one entry, there would be a concern that the guide wire may pass through or penetrate to the false lumen and return to the true lumen at the descending aorta.

Second, we have not experienced alterations of true and false lumen dimensions that affected ascending aorta cannulation because of femoral

artery (FA) cannulation under continuous real-time epiaortic ultrasonographic monitoring.⁴ FA cannulation may not always be necessary, for example, in the cases with semicircular dissection or circular dissection¹ with the thrombosed false lumen, because the true lumen can be reached directly or within short distance. Actually, in most of the recent cases, we cannulate the ascending aorta with pharmacologic decompression instead of FA cannulation. However, we still think that prior aortic decompression by some means, including FA cannulation, is indeed important to secure safe routine ascending aorta cannulation, for example, in cases of circumferential dissection with a collapsed narrow true lumen and a pressurized perfused false lumen resulting from absence of reentry.¹ In such cases, precaution is required because adequate placement of the cannula without decompression is difficult, and the difficulty in cannulation tends to result in inadequate placement of the cannula, which may increase the risk of aortic rupture.⁵

Yoshito Inoue, MD

Hiratsuka City Hospital

Hiratsuka, Kanagawa, Japan

References

1. Inoue Y, Takahashi R, Ueda T, Yozu R. Synchronized epiaortic 2-dimensional and color Doppler echo guidance enables routine ascending aorta cannulation in type A acute aortic dissection. *J Thorac Cardiovasc Surg.* 2011;141:354-60.
2. Inoue Y, Ueda T. Central cannulation in acute aortic dissection repair. *J Thorac Cardiovasc Surg.* 2007;134:545.
3. Eltzschig HK, Kallmeyer II, Mihaljevic T, Alapati S, Shernan SK. A practical approach to a comprehensive epicardial and epiaortic echocardiographic examination. *J Cardiothorac Vasc Anesth.* 2003;17:422-9.
4. Inoue Y, Ueda T, Taguchi S, Kashima I, Koizumi K, Takahashi R, et al. Ascending aorta cannulation in acute type A aortic dissection. *Eur J Cardiothorac Surg.* 2007;31:976-81.
5. Khaladj N, Shrestha M, Peterss S, Strueber M, Karck M, Pichlmaier M, et al. Ascending aortic cannulation in acute aortic dissection type A: the Hannover experience. *Eur J Cardiothorac Surg.* 2008;34:792-7.

doi:10.1016/j.jtcvs.2011.04.022