

hand–eye coordination necessary for the proper use of the VasoView system. For a resident who has prior experience in laparoscopy or thoracoscopy, the learning curve would be much shorter. Unfortunately, physician assistants do not have this experience and are forced to start from scratch. The use of models to practice video-assisted procedures will go a long way in reducing the learning curve for endoscopic vein harvesting. Leg models are also available for initial learning, but the general laparoscopy training system would still be sufficient in assisting the development of hand–eye coordination. A sequential progression from learning in laparoscopy models to leg models and then to real patients should eliminate the vein injury associated with inexperience.

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#### Reply

To the Editor:

We appreciate the opportunity to respond to the recent letter from Ramakrishnan and Nainar [1] addressing our findings on the learning curve in endoscopic harvesting [2]. We used high-resolution OCT imaging of vein conduits harvested endoscopically in order to demonstrate that the standard number of cases thought to be required for technicians to complete their learning curve (approximately 25–35) is inadequate. Although the authors' assertion is outside the scope our analysis, we agree that simulation training before the implementation of this surgical technique is likely to improve outcomes compared with "learning by doing." Simulation would be validated by demonstrating that veins procured by technicians who had received this additional training showed less areas of injury compared to those procured using the standard approach. Unfortunately, this validation has not yet been performed. There are insufficient data to link the more commonly evaluated alternate endpoints, such as the time-to-harvest and number of tears of the vein graft requiring repair, with clinically relevant changes in harvested grafts. Therefore, these endpoints are not helpful in defining the true learning curve.

Growing evidence suggests that inadequate harvester training leads to occult injury that affects conduit quality and graft patency. We suggest that a direct comparison of high-resolution imaging of harvested conduits is the first and most important

step toward addressing this underrecognized public health issue.

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#### Use of Anvil Positioning Technique in Minimally Invasive Intrathoracic Esophagectomy

To the Editor:

I read with great interest the article by Jaroszewski and associates [1], which reports the successful experience with the transoral OrVil EEA stapler for minimally invasive transthoracic esophagectomy. As stated by those authors and by others [1, 2], their early experience has achieved an acceptable morbidity and mortality rate with comparative experiences of open esophagectomy. I agree with the authors that docking the anvil with the EEA stapler is a potentially technically challenging of the procedure. The authors suggested that the anvil should be removed and replaced with another if the tip of the anvil bends and cannot be locked with the EEA stapler during the docking process. However, the limitations of this solution are to prolong the operative time and to increase the operative cost.

I would like to share some our experience in solving this problem. As already stated by the authors, the most difficult part of the docking process is to maintain the exact angle between the tip of the anvil and the pin of the EEA stapler. Therefore, an instrument was designed specifically for this difficult part. The shape of the instrument is just like a right-angle forceps, but the jaw is hollow and the length is longer than that of an ordinary one. The purpose of such a design is to hold the connected part of the anvil with the EEA stapler and maintain an accurate angle without distortion for exact docking and make to locking easier.

After the tip of the anvil is connected to the pin of EEA stapler, the specifically designed instrument is applied through the most anterior port, to stabilize and guide the connected portion in a parallel alignment position and proper angle until they lock exactly over the orange stripe of the EEA stapler (Fig 1).

Recently, we have used this instrument in five consecutive patients requiring intrathoracic gastroesophageal reconstruction during minimally invasive esophagectomy. We have found that the anvil and stapler can easily dock and lock without any technical problem in using this new instrument, and in no patients have we required replacement by another anvil. Our technique is simple, timesaving, and safe, providing an accurate angle and rapid connection of anvil and stapler.