The authors reported no conflicts of interest.

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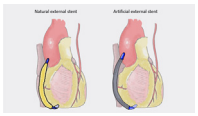

REPLY FROM AUTHORS: THE PERIVASCULAR ADIPOSE TISSUE IS A VERSATILE "JACKET" THAT THE SAPHENOUS VEIN WEARS INHERENTLY

Reply to the Editor:

We thank Dashwood and colleagues[1] for their constructive comments on our recent article. There is a growing body of research illuminating the efficacy and mechanism of no-touch (NT) saphenous vein (SV) grafts. Many researchers are focusing on the perivascular adipose tissue (PVAT) surrounding the NT SV grafts, which is believed to have 2 crucial roles in the improved patency of NT SV grafts. First, PVAT releases a variety of beneficial humoral factors, such as nitric oxide[2] and leptin. Second, it functions as a natural external stent.

While there have been several studies on the use of artificial materials (such as Dacron, cobalt, and biodegradable polyglactin) for the external support of SV grafts, PVAT, which acts as a natural external stent, appears to provide several advantages over artificial external stents (Figure 1). We hypothesize that the potential advantages of PVAT are as follows:

1. The nitric oxide produced by PVAT regulates the homeostasis of the vascular bed and SV graft perfusion.
2. The flexibility of PVAT is advantageous in avoiding graft kinking as opposed to rigid artificial stents.
3. NT SV grafts with PVAT are more easily adaptable to sequential bypasses than conventional (CV) SV grafts with artificial stents.
4. PVAT is less susceptible to infection, as it is not made of artificial material.
5. There are no additional costs involved, as the PVAT is obtained from the patient.

Despite the advantages that natural external stents provide as compared with artificial stents, intimal

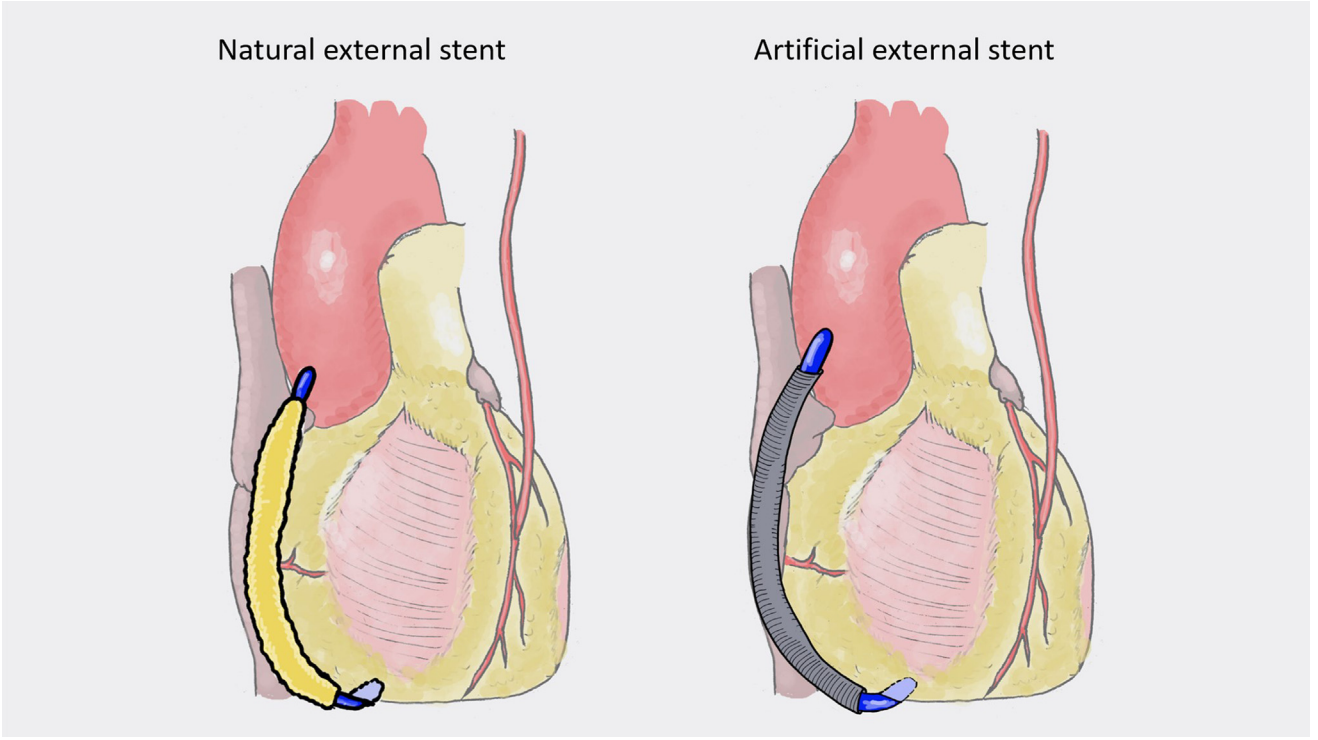

FIGURE 1. Natural external stent (PVAT) and artificial external stent. *PVAT*, Perivascular adipose tissue.

hyperplasia and the wall thickness of SV grafts are reduced under artificial external support.[3] In a randomized study under clinical settings, Taggart and colleagues[4] reported that cobalt–chromium external stents reduced intimal hyperplasia and the development of luminal irregularities.

Dashwood and colleagues[1] question the need for providing damaged CV SV grafts with artificial support of any form. Although we agree that artificial external stents can improve SV graft performance to some extent, artificial external stents can never play the same role as natural external stents, as emphasized by the advantages of PVAT mentioned previously.

Another aspect to consider regarding SV graft management is the invasiveness of harvesting methods. NT SV harvesting uses the open method, which requires a relatively long skin incision. If an infection occurs at the harvest site, it may be intractable in NT SV due to the removal of a significant amount of subcutaneous tissue at the harvest site. We believe that this is the only disadvantage of NT SV grafts. In contrast, CV SV grafts can be harvested endoscopically, which is less invasive and more cosmetic with a lower risk of wound complications.[5]

The best SV-harvesting technique remains unknown. We believe that if an endoscopic NT harvesting technique is developed, it will be the most-effective method of SV harvesting.

PVAT is a versatile "jacket" that the saphenous vein inherently wears. Instead of "undressing" it to make way for artificial external stent, we would like to use PVAT effectively.

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