Do radiopaque markers make a difference after coronary artery bypass grafting?

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Disclosures: Author has nothing to disclose with regard to commercial support.

Received for publication Dec 11, 2017; accepted for publication Dec 21, 2017; available ahead of print Jan 19, 2018.

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J Thorac Cardiovasc Surg 2018;155:1573

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2017.12.113>

In this issue of the *Journal*, Pingpoh and colleagues¹ describe a nice study in which they examined the impact of proximal radiopaque markers placed during coronary artery bypass grafting (CABG) on radiation exposure and contrast dose during subsequent graft angiography. This is not a new topic. Since CABG surgery began in the 1960s, coronary bypass grafts have occluded after surgery and patients began having recurrent angina. In fact, as acknowledged by the authors, there have been several prior studies examining the impact of radiopaque markers on post-CABG angiography.²⁻⁴ One cardiologist once told me that there is a special place in hell for surgeons who do not place radiopaque markers near the proximal anastomotic site. Most cardiologists probably do not feel quite that strongly about the subject. However, most cardiologists, if asked, would prefer that we surgeons mark the grafts in the event coronary angiography is required. In addition to lessening the frustration and stress of the cardiologists in searching for the proximal anastomoses, there is evidence that the presence of a marker reduces radiation exposure and lessens the amount of contrast dye required to complete the angiographic examination. Thus, this probably improves the care of the patient. In the study by Pingpoh and colleagues,¹ radiation time was decreased by more than 30%, dose area product was reduced by 19%, and the dose of contrast needed was cut by 20%. Thus, there is probably a real benefit in marking the grafts. Although radiopaque rings are acceptable, I personally find it somewhat inconvenient to place these rings around the proximal anastomotic site. In addition, when dissecting the aorta during a redo procedure,

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Central Message

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the rings sometimes get in the way of the aortotomy or placement of new bypass grafts. I place a medium stainless steel clip on the proximal suture knot or on the adventitia of the vein in any patient who is young or who has a reasonable chance of requiring an angiogram in the future. This adds little time or expense to the initial CABG operation and does not affect the subsequent operation, if one is needed. The cardiologists seem to agree with this approach. Although certainly not mandatory or standard of care, placing proximal radiopaque markers during CABG is probably a good idea.

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