LETTERS TO THE EDITOR

Regarding “Postoperative infection associated with polyester patch angioplasty after carotid endarterectomy”

The article by Rockman CB et al (J Vasc Surg 2003;38:251-6) indicates that the preferred patch material for angioplasty during carotid endarterectomy at two well recognized medical centers is knitted polyester and that their preferred method of carotid artery reconstruction for infected polyester patches utilizes an autologous vein patch. Some surgeons have used prosthetic patches for initial carotid endarterectomies, because of their concerns with autologous vein patches being associated with late aneurysm dilation, false aneurysm formation, and patch rupture. Although infected false aneurysms occur rarely after carotid endarterectomies, they have been associated predominantly with prosthetic patch angioplasty.

The rupture of the patched carotid artery is a serious complication and has been a rare complication of vein-patch angioplasty. Because the rupture of the greater saphenous vein patches has primarily occurred with vein segments taken from the ankle, most surgeons now use the proximal segment, which has had long-term durability. In our series of 792 carotid endarterectomies with proximal greater saphenous vein patches for 689 patients, there have been no rupture, no infection, and no false aneurism. The vein segment must be evaluated for quality and thickness before patching the carotid artery. Our 5-, 10-, 15-year restenosis-free rates with vein patches are 91%, 87%, and 79%, respectively. The 5-, 10-, 15-year stroke-free rates are 97%, 94%, and 93%, respectively, and the 5-, 10-, 15-year survival rates are 83%, 67%, and 50%, respectively. Our perioperative stroke rate is 0.4% after vein-patch angioplasty.

It is interesting that Dr Riles now prefers the polyester patch when a decade ago he reported no rupture of the proximal vein patch in more than 600 carotid endarterectomies. In his personal experience, how many proximal great saphenous vein patches have ruptured? We believe that carotid endarterectomy with proximal vein-patch angioplasty is safe and durable and that serious complications can be avoided by selection of appropriate greater saphenous vein segments.

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Reply

The authors of our article entitled, “Postoperative infection associated with polyester patch angioplasty after carotid endarterectomy” appreciate the comments and interest of Dr. Chang. We would like to respond to his questions as follows.

Rupture of the vein patch following carotid endarterectomy is a serious, but thankfully extremely rare, complication following carotid endarterectomy. We agree with Dr. Chang and other authors who have found that this potentially fatal complication is more likely to occur with saphenous vein harvested from the ankle rather than the thigh. In our experience at the New York University Medical Center, we have had no cases where rupture of the vein patch has occurred when saphenous vein was harvested from the thigh. We certainly agree with Dr. Chang that patch angioplasty of the carotid artery using the proximal saphenous vein is a safe and durable procedure.

However, avoidance of vein-patch rupture is only a small part of the reason that we now prefer prosthetic patch angioplasty for routine carotid endarterectomy at our institution. Other reasons include the following: reliability and ease of use; ability to use when proximal saphenous vein is not available; avoidance of groin wound pain and complications; avoidance of additional discomfort and administration of local anesthetic in the groin area when the patient is awake during surgery; preservation of the proximal saphenous vein thigh segment for future vascular reconstructions; and, possibly, shortening the time of the operation, which is especially crucial when it is performed under cervical block anesthetic. Finally, the use of the saphenous vein is also not without rare but serious sequelae, including the formation of late vein-patch aneurysms and infection of the vein patch itself.

In extensive analysis performed and reported by our institution, we have found no differences in the rates of perioperative morbidity, perioperative mortality, early postoperative restenosis, late severe or symptomatic restenosis, or late occlusion of the artery related to whether vein or prosthetic was utilized as a patching material. In our study, nine patients underwent their original carotid endarterectomy at one of two institutions. This represents a prosthetic infection rate of 0.33% during the specific time period of the study. Outside of the time period of this particular study, we have performed approximately 1200 additional carotid endarterectomies with prosthetic patch angioplasty with no additional resulting infections. On the basis of our results, as well as additional literature regarding this topic, we believe that prosthetic remains an acceptable alternative, and the extremely low rate of rare prosthetic patch infections alone would not cause us to abandon their use.

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