

answers. Consequently, EVAR may be an option for symptomatic intact, but not for ruptured AAAs.

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Reply

The issues surrounding the role of endovascular aneurysm repair (EVAR) in the management of ruptured abdominal aortic aneurysms (AAAs) are complex. This meta-analysis set out to examine the current published data. Statistical analysis of the overall hospital length of stay was not affected by heterogeneity or bias and showed an 8.6-day reduction in those patients treated with EVAR relative to open surgery. We suspect that most surgeons, patients, and hospital managers would be very pleased with this outcome.

Although we accept that there may be some potential publication bias that resulted in us finding a 37.6% reduction in mortality and a 4-day reduction in the intensive treatment unit with EVAR, these findings would be supported by the overall improvement in length of stay. It is very difficult to see how these data could be interpreted in such a negative way for the authors of the letter to state "EVAR may be an option for symptomatic intact, but not for ruptured AAAs."

Many people have called for more randomized controlled trials in this area, and some have even tried to run them. We believe that trying to find out whether open repair or EVAR is better for ruptured AAAs is asking the wrong question. A trial such as this would exclude two important groups—those not stable enough for EVAR and those who are not potentially fit enough to survive an open repair. Those in the latter group are not EVAR II type patients because they have ruptured AAAs and their immediate life expectancy is very different. The question that should be asked about EVAR is "What happens to the overall mortality of *all* patients admitted to our institution with ruptured AAAs if we include EVAR in our armamentarium?"

Centers committed to offering the best treatment for patients with ruptured AAAs should provide a service that can offer EVAR on a 24-hour basis.

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Carotid endarterectomy under local anesthesia may be the treatment of choice for symptomatic carotid artery stenosis

Two recent meta-analyses comparing carotid endarterectomy (CEA) with carotid artery stenting (CAS) for symptomatic carotid artery stenosis showed that CEA is superior to CAS with respect to 30-day stroke/death rates.^{1,2} The first meta-analysis included 2985 patients of whom 2646 (89%) were symptomatic and showed a significant 38% increase in the odds of any stroke or death ≤ 30 days after treatment (odds ratio, 1.38; 95% confidence interval [CI], 1.04-1.83; $P = .024$).¹ The second meta-analysis included 3580 patients and showed that although patients undergoing CAS had a higher risk of 30 day-stroke/death compared with patients undergoing CEA (risk ratio [RR], 1.30; 95% CI, 1.01-1.67; $P < .05$), the 30-day risk of stroke was not significantly different between patients who underwent CAS vs CEA (RR, 1.27; 95% CI, 0.96-1.69).² However, a subgroup analysis of trials enrolling only symptomatic patients showed a higher risk of both 30-day stroke/death (RR, 1.63; 95% CI, 1.18-2.25; $P < .05$) and 30-day stroke rates (RR, 1.62; 95% CI, 1.13-2.31; $P < .05$) in CAS patients.² The conclusion reached was that "surgical treatment still remains the gold standard for treatment of patients with symptomatic carotid artery stenosis, who do not have an increased risk."¹

In most of the trials included in the two meta-analyses, CEA was performed under general anesthesia.^{1,2} A parameter that may produce even better results for CEA compared with CAS (eg, even lower 30-day stroke rates) is the performance of CEA under local instead of general anesthesia. The use of local anesthesia for CEA gives the surgeon the opportunity to directly assess the neurologic status of the patient during the procedure. Moreover, CEA can be safely performed under local anesthesia, even in high-risk patients.

A retrospective study of 365 procedures showed that the performance of 200 CEAs with local anesthesia compared with 165 under general anesthesia was associated with significantly lower stroke rates (1% vs 7.3%, respectively; $P < .05$), operation time (104.5 ± 24 vs 122 ± 36 minutes, respectively; $P < .0001$), cross-clamping time (14.6 ± 4 vs 18.2 ± 5 minutes, respectively; $P < .0001$) and intraoperative shunt usage (8% vs 30.3%, respectively; $P < .0001$).³ In addition, application of local instead of general anesthesia was associated with decreased length of hospitalization (2.4 ± 1.1 vs 4.1 ± 1.9 days, respectively; $P < .0001$) and associated costs ($\$885.71 \pm \78.57 vs $\$1007.14 \pm \135.71 , respectively; $P < .0001$).³ The superiority of local compared with general anesthesia for CEA was supported in other similar trials, as well.^{4,5}

A drawback of these studies³⁻⁵ is their retrospective nature. A prospective, multicenter randomized study, the General Anaesthetic versus Local Anaesthetic for carotid surgery (GALA) trial, will soon report its results from 3529 patients undergoing CEA under local vs general anesthesia.⁶ In the future, a similar, prospective, multicenter randomized trial comparing CAS with CEA performed under local anesthesia may lead to the conclusion that "the gold standard for symptomatic carotid artery stenosis" is indeed surgical treatment, performed however, under local anesthesia.

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Regarding "Bedside vena cava filter placement with intravascular ultrasound: A simple, accurate, single venous access method"

Jacobs et al¹ present a single-puncture venous access method for bedside inferior vena cava filter placement that takes advantage of the relationship between the filter delivery catheter and the corresponding sheath available on some commercially available filter placement kits. The essential steps involve using intravascular ultrasound (IVUS) to guide sheath placement to a level just below the lowest most renal vein, advancement of the filter delivery catheter to the premeasured distance aligning the tip of the filter with the end of the sheath, and then withdrawing the sheath in a "pin-pull" fashion to allow deployment of the filter at the infrarenal level.

We have adopted this exact single-puncture technique as well for bedside filter delivery. However, a cautionary note should be placed here that for the single-puncture technique described by the authors to work, predetermined marks on the filter delivery catheter that indicate when the filter is at the end of the sheath and when the filter is out of the sheath are essential.

The authors evaluated eight different filters and concluded that three were ideally suited for this technique: the Trapease and Optease filters (Cordis Corp, Miami Lakes, Fla) and the Günter-Tulip filter (Cook Inc, Bloomington, Ind). The described single-puncture technique works well for these three filters because of the device-specific marks placed in the manufacturing process that allow the operator to understand the interaction of the sheath and delivery system. The authors state that these five other filters "can all be placed with the alternative IVUS-guided techniques" but do not provide other technical details.

To adapt the single-puncture technique to other filter devices, it is essential to understand the relationship between the filter delivery catheter and sheath. Our previously published technique, described in the *Journal of Vascular Surgery* "Technical Notes" in 2005,² involves a single-puncture approach that is more relevant to filter delivery systems such as the Greenfield Vena Cava Filter (Boston Scientific Corp, Natick, Mass) that do not have corresponding marks on the filter delivery catheter, a technique that has also evolved in our experience since this original description. The steps are similar to those described by the authors up to the point of guiding the end of the sheath with IVUS to a level just below the lowest most renal vein. The difference is that in the absence of marks on the filter delivery catheter, the sheath is then pulled back over the IVUS probe a distance equivalent to the length that the filter delivery catheter extends beyond the sheath. For the Greenfield filter system, this distance is approximately 7 cm. When the filter delivery catheter is loaded into the sheath, the tip of the filter will precisely align with the lowest most renal vein upon deployment.

In short, these techniques are variations of the same concept and reinforce the importance of understanding the device component relationships in order to achieve intended technical accuracy for filter delivery. As bedside filters techniques continue to evolve, the techniques described by the authors and in our previous published "Technical Notes" continue to highlight the feasibility and safety of filter placement using IVUS.

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Reply

I appreciate the insightful comments of the readers above and agree in their analysis that understanding the relationships of the filter delivery catheter and the delivery sheath lengths is essential to the accurate deployment of filters using the single-puncture technique we described. Their single puncture technique, as described for the Greenfield filter system, is indeed essentially the same as the technique described in our report. However, the need to know the distance the filter extends beyond the end of the sheath, and adjusting the placement of the sheath back to accommodate for that distance is an incremental additional step not required with the filter systems that have manufactured markings on the delivery catheter to indicate the position of the filter relative to the delivery sheath.

I share the enthusiasm of the readers for intravascular ultrasound-guided filter placement. Their adaptation of the single-puncture technique to a wider variety of filter systems is an important expansion of the options.

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Regarding "In-stent restenosis after carotid artery stenting is asymptomatic because of low embolic potential"

We read with interest the study by Lal et al¹ evaluating the patterns of in-stent restenosis (ISR) after carotid artery stenting (CAS). They developed an ultrasound classification of ISR based on the length and distribution of lesions and they showed that type IV ISR (defined as a diffuse >10 mm proliferative, extending outside the stent) and a history of diabetes are predictors of need of target lesion revascularization. In addition, all patients with restenosis were asymptomatic during follow-up apart from ultrasonographic types I to IV. This observation is in accordance with previous studies and may be related to the etiopathogenesis of restenosis (in-stent neointimal hyperplasia).²