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INVITED COMMENTARY

Local versus GA for Carotid Endarterectomy: Improving the Gold Standard?

M.J. Gough*

Leeds Vascular Institute, Leeds, UK

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The possible benefit of performing carotid endarterectomy (CEA) under local or regional anaesthesia (LA) has been debated for a decade.[1] The question remains unanswered although the results of the GALA Trial[2] (a multicentre RCT of general (GA) versus LA for CEA, 3537 patients) which will be presented at ESVS 2008 should clarify this. In the interim LA CEA continues to gain popularity because of accurate and easy cerebral monitoring and the immediate awareness of neurological status at the end of surgery.

This large non-randomised study reports a reduced risk of neurological complications for LA CEA. It benefits from independent neurological review thus removing an important source of bias. This may account for the relatively high frequency of cerebral events, particularly following GA surgery for symptomatic stenoses (8.5%), compared to surgically reported outcomes.

Nevertheless other biases remain. In particular the choice of anaesthesia was made, at least in part, by the surgeon. Further, there is no confirmation that surgeons performed a similar proportion of GA and LA procedures.

Other important variables including the allocation of significantly more symptomatic patients to GA and an unequal distribution of smoking, diabetes and hypertension between the two groups are also important.

In common with previous studies fewer neurological complications occurred following LA CEA reflecting either reporting bias or a real finding. The results are strengthened by the stepwise logistic regression analysis indicating that symptomatic status, anaesthetic type and operating time significantly influenced outcome.

The impact of duration of surgery was also examined in ECST[3] with optimum outcomes obtained at around 90 mins. CEA took longer in this study with a significant difference between LA and GA (103 versus 111 mins). The reasons for this are unclear unless anaesthetic time was included in this calculation (not described in methods).

Enthusiasts for LA CEA generally suggest that the putative neurological benefits of LA reflect preservation of cerebral autoregulation and a reduced requirement for shunting (risks of intimal damage, embolic events, restenosis, technical difficulties). Although the authors do not discuss potential reasons for the advantage shown here (other than reduced operating time) shunt rates were identical for both GA and LA.

Data from this study are similar to those reported for non-randomised studies in a recent Cochrane Systematic Review.[4] On the basis of the advantage shown for LA CEA the authors suggest that future comparisons between CEA and carotid angioplasty/stenting should be based on this type of anaesthesia — a reasonable conclusion.

* Corresponding author. Mr. M.J. Gough, Leeds Vascular Institute, Great George Street, Leeds, W Yorks LS1 3EX, United Kingdom. Tel.: +44 113 392 2823; fax: +44 113 392 2624.
E-mail address: michael.gough@leedsth.nhs.uk

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This study also suggests that post-operative hypertension is more common after local anaesthetic surgery. This may not be a benign occurrence and could increase the risk of post-operative intracranial haemorrhage.[5] This relationship requires further elucidation. It is conceivable that whilst LA may reduce the frequency of haemodynamic stroke and the clinical impact of embolic events because of preserved autoregulation it might merely alter the pattern of peri-operative complications.

This may well be the last non-randomised study published on this topic. A more definitive answer to this important question should be provided by the GALA Trial, perhaps with additional information to explain any differences that might have occurred.

References

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