

INVITED COMMENTARY

The Fast and the Furious: Centralised Approach for a Low Volume High Risk Pathology

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A direct randomised comparison between open and endovascular revascularisation for carotid bifurcation and supra-aortic trunk disease (tandem lesion, TL) has never been performed and probably never will be because of the relative scarcity of the pathology. Using the National Surgical Quality Improvement Program (NSQIP) dataset over a 12 year period, Clouse *et al.* indirectly compared the 30 day procedural outcome differentiating between 1) open reconstruction (319) and 2) hybrid carotid endarterectomy with ipsilateral proximal endovascular intervention (IPE) (53) in 372 TL patients.¹ With an overall 30 day stroke/death (SD) rate of 5.1%, it is clear that caution should be raised for any form of revascularisation. This becomes even more emphasised with a more granular analysis on indication. Although both groups were heterogenous for symptomatic status, and taking into the account the low caseload in the IPE group, SD occurred in 7.8% of symptomatic patients vs. 3.5% in asymptomatic patients uncorrected for type of surgery. Nevertheless, these SD rates exceed accepted risk thresholds accounting for single lesion patients, while Robertson *et al.*² once again recently in this journal reaffirmed that there are no natural history studies to corroborate the widespread perception that the natural course of TL is associated with a high risk.

The authors recommend that lesion characteristics, patient co-morbidities, and longevity should drive selection for open vs. endovascular surgery. Although I tend to agree, in my view these criteria should not be used to select for the type of revascularisation per se, but, foremost, to drive selection between patients who could benefit from revascularisation vs. those who would be better protected by conservative therapy.³ Of note, there is a lack of specification on lesion characteristics for TL patients in the existing literature, and uniformity in data reporting for TL treatment and stroke free survival is clearly needed to enable individual patient data meta-analysis in the future.^{3,4}

In the meantime, the question is raised of why one would need further comparative data when the newer (endovascular) technique has been shown repeatedly to be quicker,

with faster recovery, and being at least as equally effective as the previous gold standard open surgical technique? A recent review cautiously extended the 2017 European Society for Vascular Surgery (ESVS) guideline on treatment of carotid disease, recommendation for TL: provided they are symptomatic, most supra-aortic trunk lesions should be managed via an endovascular first approach.^{2,5}

NSQIP administers a national multi-institutional clinical database with no centre specific data. With 53 procedures in 12 years, even provided that IPE was performed in only a few centres (e.g. five centres), this would account for less than one procedure per year per centre. Based on this study and the recent systematic review, the relatively high procedural risk in combination with the observed small caseload (per physician) per centre strongly label TL revascularisation as a low volume high risk procedure. The current data appeal against the use of any revascularisation in asymptomatic patients. These repeated observations now call for action and uniformly call for a centralised approach to optimally treat TL pathology.

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DOI of original article: <https://doi.org/10.1016/j.ejvs.2020.08.050>

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<https://doi.org/10.1016/j.ejvs.2020.09.022>