Impact of Aortic Arch Anatomy on Contemporary Outcomes of Transfemoral Carotid Artery Stenting vs Transcarotid Artery Revascularization

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INTRODUCTION: Transcarotid artery revascularization (TCAR) and transfemoral carotid artery stenting (TFCAS) are the 2 leading methods of minimally invasive treatment of carotid artery stenosis, with TCAR being associated with lower risk of postoperative stroke. This study aimed to examine whether aortic arch morphology could explain the differences in outcomes of TCAR and TFCAS.

METHODS: We examined all subjects who underwent TFCAS or TCAR in the Vascular Quality Initiative between 2016 and 2020. Patients were grouped according to aortic arch type (I vs II or III). Multivariable logistic regression and Cox regression were used to compare adjusted postoperative and 1-year outcomes between the 2 procedures within each group.

RESULTS: Of 11,873 patients, 5,248 (44.2%) underwent TFCAS and 6,625 (55.8%) underwent TCAR. There were a total of 207 strokes (1.7%), 76 deaths (0.6%), and 62 MIs (0.5%) postoperatively. At 1 year, there were 180 (1.5%) ipsilateral strokes and 480 (4.0%) deaths. Mean follow-up duration was 0.99 years. As shown in the Table, in patients with type I arch TCAR was associated with lower odds of postoperative and 1-year death. In patients with type II or III arch, TCAR was associated with lower odds of postoperative and 1-year death and postoperative stroke, but not 1-year ipsilateral stroke.

CONCLUSIONS: The advantage of TCAR over TFCAS in stroke reduction is mainly seen in difficult arch anatomy. However, the benefit in reducing mortality is seen in all arch types.

Incidence of Immediate and Late Complications after Inferior Vena Cava Filter Insertion

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INTRODUCTION: Literature supporting the efficacy of IVC filters is limited and controversial. Here we evaluate the predictors and rates of complications after IVC filter insertion in a national database.

METHODS: The Vascular Quality Initiative registry was retrospectively reviewed (2013 to present). Immediate complications were defined as venous injury requiring treatment, placement complication (failure to open, deployed >20 mm from site, embolized to heart), angulation >20 degrees, or access complications. Late complications were defined as migration, angulation >15 degrees, fracture, caval/iliac thrombosis, filter thrombus, fragment embolization, or vein perforation. Chi-square, multivariate logistic regression, Cox hazard regression, and survival analysis were performed.

RESULTS: There were 14,784 patients with mean follow-up of 0.9 years included; 1.8% and 3.1% developed immediate and late complications, respectively. Angulation (1.2%) was the most common immediate complication and filter thrombosis (1.6%) was the most common late complication. Logistic regression analysis revealed that renal vein visualization was associated with a 50% (adjusted odds ratio 0.50; 95% CI, 0.27 to 0.92; p = 0.027) reduction in odds of immediate complications, and female sex and abnormal anatomy were associated with a 41% (adjusted odds ratio 1.41; 95% CI, 1.08 to 1.85; p = 0.013) and 3.4-fold (adjusted...