

15 during the second 5 years. When comparing the second 5-year period with the first 5-year period, patients were younger ($P = .066$), reported a significantly shorter length of preoperative symptoms (35.4 vs 52.1 months, $P < .01$), prior narcotic use decreased from 31.5% to 23.8% ($P < .05$), and a history of prior surgical intervention on the ipsilateral side (head, neck, shoulder) increased from 30.1% to 51.9% ($P < .01$). Use of lidocaine blocks as a diagnostic tool (57% to 35.4%, $P = .06$) and Botox blocks as a therapeutic tool (29.1% to 12.7%, $P < .01$) decreased in the second 5 years with similar positive results. Improved or fully resolved symptoms after FRRS increased from 89% in the first 5 years to 92.8% in the second 5 years. Average length of follow-up over the 10-year period was 13.4 months.

Conclusions: (1) Excellent results were seen in this largest surgical series reported for NTOS. (2) Younger patients with shorter duration of symptoms with less narcotic use led to even better FRRS results in the second 5 years of surgical intervention. (3) An established vascular practice for referrals for NTOS resulted in an increased number of appropriate patients for surgical intervention, requiring less lidocaine and/or botox injections preoperatively.

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S6: SVS Plenary Session VI

SS25

Participation in the Vascular Quality Initiative (VQI) Is Associated With Improved Perioperative Medication Use and Longer Patient Survival

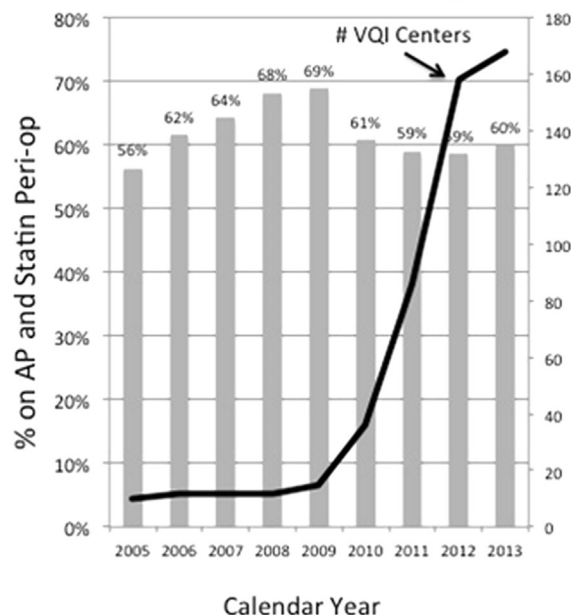
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Objectives: Medical management (MM) with antiplatelet and statin therapy is recommended for most patients undergoing vascular surgery. We tested the association of Vascular Quality Initiative (VQI) participation and perioperative MM use over time and the effect of optimal MM on patient survival.

Methods: We studied VQI patients treated with MM preoperatively and at discharge from 2005 to 2013, including all elective carotid endarterectomy (CEA)/carotid artery stenting (CAS; $n = 19,428$), supra/infringuinal bypass ($n = 8,462$), peripheral vascular interventions ($n = 15,525$), and open/endovascular abdominal aortic aneurysm repair ($n = 9,530$). We examined trends of MM use

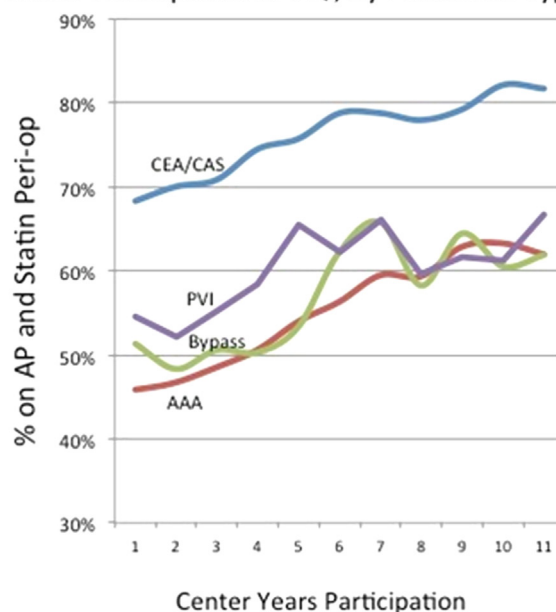
over time, as well as the effect of duration of VQI participation on MM use. Multivariable analyses were performed to identify factors associated with MM use and 2-year survival.

Medical Management and Number of Centers Over Time in VQI



VQI Centers: 10 12 12 12 15 36 86 158 168

Medical Management by Number of Years of Center Participation in VQI, by Procedure Type



VQI Centers: 174 142 80 34 15 13 12 12 11 9 7

Fig.

Results: MM across VQI centers improved from 56% in 2005 to 69% in 2009, and declined when many new centers joined VQI in 2010 (Fig). Longer center participation in VQI was associated with improved MM across all procedure types (Fig, B). After multivariable adjustment, centers in VQI >2 years were 40% more likely to have patients on MM (odds ratio, 1.4, 95% confidence interval [CI], 1.4-1.5; $P < .01$). Use of MM was associated with improved 2 year survival (92% vs 86%; HR for death, 0.6; 95% CI, 0.5-0.7; $P < .01$), as was treatment at centers in VQI >2 years (HR, 0.86; 95% CI, 0.8-0.9; $P < .01$).

Conclusions: These data demonstrate that optimal MM is associated with improved survival after a number of vascular procedures. Importantly, VQI participation improves the use of MM, demonstrating that involvement in an organized quality effort can greatly impact patient outcomes.

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VS6

Transvenous Embolization of High-Flow Arteriovenous Malformations With a Dominant Outflow Vein

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Objectives: To assess outcomes of retrograde embolization of arteriovenous malformations (AVM) with a dominant outflow vein (DOV).

Methods: We retrospectively reviewed patients with high flow AVMs who were noted to have a DOV and subsequently underwent transvenous embolization. Three cases have been selected for video demonstration.

Results: From Nov 2010 to Sep 2013 11 patients (three male [27%]) underwent transvenous embolization of high flow AVMs with a DOV. Mean age was 42.2 years (range, 16.4-65.8 years). The AVM was located on an extremity in six patients (55%) and in the pelvis in five (45%). The indication for the procedure was pain in 10 patients (91%) and swelling in two (18%). Transvenous embolization was performed with coils in eight patients (73%) and with coils and the Amplatzer Vascular Plug (St. Jude Medical, St. Paul, Minn) in three (27%). Concurrent use of direct stick embolization of the AVM nidus was used in four patients (36%), and transcatheter arterial embolization in seven (63%). Angiographic success was seen in all patients. Five patients (45%) required further procedures for residual symptoms.

Conclusions: AVMs with a DOV can be successfully treated by a transvenous approach. The use of direct stick embolization of the nidus and transcatheter arterial embolization may assist in reducing flow.

Technical description: Patient 1: We demonstrate the use of retrograde transvenous embolization of an upper extremity AVM, fed by branches from the proximal ulnar, radial and common interosseous arteries. Coil embolization of the vein was performed, followed by direct stick embolization of the AVM nidus using nBCA adhesive. Patient 2: An AVM involving shunting from the profunda artery to a

dysplastic draining vein was treated with coil embolization of the vein, and transcatheter embolization of the profunda branches using nBCA adhesive. Patient 3: A pelvic AVM was treated using an Amplatzer Vascular Plug, coil embolization of the outflow vein, and transcatheter arterial embolization of the arterial branches.

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SS26

Civilian/Military Collaboration in the Management of Military Vascular Trauma: A 10-year Report of the SVS Volunteer Program

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Objectives: A longstanding spirit of camaraderie has existed between civilian and military surgeons in the US. Volunteers from the Society for Vascular Surgery (SVS) assisted active duty military surgeons in filling a critical need for vascular surgery support in the evacuation of injured U.S. soldiers. The objective of this study is to provide an assessment of this program, including characterization of workload and perspectives of participating surgeons.

Methods: An online survey instrument (SurveyMonkey), consisting of 34 questions, was developed and administered to participants (2003-2012) in the program. The survey consisted of multiple choice and open-ended questions.

Results: The response rate was 59% (68 of 115), with 84% indicating they had no prior military experience. The majority of respondents (76%) served one tour, whereas 24% served multiple tours. The majority (65%) indicated satisfaction in their operative workload, performing two to five operations per week, whereas 17% performed six to 10. Seventeen participated in clinical research during the rotation, 70% of which resulted in scientific presentation or publication, or both. Over half participated in drafting new Clinical Practice Guidelines for care of patients with vascular injuries. Of respondents, 90% (n = 61) were satisfied or very satisfied with the experience and indicated interest in continuing a civilian-military collaboration. Most volunteers found great value in participating first hand with cutting-edge telemedicine and integration of combat casualty care over a broad evacuation system involving three continents.

Conclusions: Over a 10-year period of time civilian vascular surgeons have provided critical open and endovascular care to injured U.S. soldiers. SVS volunteers were clinically and academically active and found value in collaborating with their military colleagues to provide an extremely high level of combat casualty care. This unique collaboration carries on historical traditions of our surgical heritage and is an extremely valuable care model for future use.