Abstracts

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Effects of Intensive Medical Therapy on Microemboli and Cardiovascular Risk in Asymptomatic Carotid Stenosis


Conclusion: Less than 5% of patients with asymptomatic carotid stenosis will benefit from revascularization. Patients with asymptomatic carotid stenosis should receive intensive medical therapy and only be considered for revascularization if microemboli are demonstrated by transcranial Doppler (TCD) imaging.

Summary: The principle cardiovascular event in patients with asymptomatic carotid stenosis is myocardial infarction rather than stroke. Since 2003, only 5.6% have had stroke, death, myocardial infarction, or carotid endarterectomy for symptoms (P < .001). Declining numbers of patients with microemboli correlated with better control of plasma lipids and slower progression of carotid plaque area. Before 2003, 17.6% of patients had stroke, death, myocardial infarction, or carotid endarterectomy for symptoms. Since 2003, only 5.6% have had stroke, death, myocardial infarction, or carotid endarterectomy for symptoms (P < .001). In the first year of study before 2003, the rate of carotid plaque progression declined from 69 mm² (standard deviation, 86 mm²) to 23 mm² (standard deviation, 86 mm², P < .001) after 2003.

Comment: The tone of this article is clearly biased against intervention of any sort for high-grade asymptomatic carotid stenosis. The literature cited by the authors for stroke rates with asymptomatic carotid stenosis treated by endarterectomy or carotid stenting are on the very high end of the published ranges. Nevertheless, the authors are probably correct that modern medical management of patients with asymptomatic carotid stenosis likely itself lowers the potential benefit of intervention added to medical management.

Factors that Predict Risk of Thrombosis in Relatives of Patients with Unprovoked Venous Thromboembolism


Conclusion: Unprovoked venous thromboembolism (VTE) occurring at a young age is associated with increased risk of VTE in families of patients with VTE.

Summary: About one-quarter of all VTE is idiopathic or "unprovoked." One-third of these patients will have identified genetic predispositions to thrombosis. The factor V-Leiden and G20210A prothrombin gene mutations account for 90% of detected genetic abnormalities (Lancet 2003; 361:128-19; 25). If a genetic mutation is not identified in a patient with VTE, it is often assumed that relatives do not have increased risk of thrombosis. Such an assumption may not be true, however, because it is likely there are many causes of hereditary thrombophilia that have yet to be discovered. The authors' primary hypothesis was that the risk of VTE would be similar in families of patients who had factor V-Leiden or the factor V-Leiden gene mutation compared with relatives of patients with neither of these two abnormalities. The authors assumed that most patients with unprovoked VTE, who have negative tests for thrombophilia, do in fact have hereditary defects that have yet to be discovered and that these abnormalities would increase the risk of thrombosis in the patient's first-degree relatives.

Comment: Unprovoked venous VTE in 1916 first-degree relatives of 348 unselected patients with a first episode of unprovoked VTE was investigated. Patient characteristics and the presence of factor V-Leiden or the G20210A prothrombin gene mutation was assessed as predictors of VTE in the patient's first-degree relatives. The first-degree relatives had sustained 102 previous episodes of VTE (prevalence 5.3%). Unprovoked VTE at a young age was the strongest predictor of VTE in relatives. There was an odds ratio (OR) of 3.27 (95% confidence interval [CI], 1.68-6.38) for younger patients (patients aged <45 when VTE occurred, lowest quartile) compared with older patients (patients aged >71, highest quartile). The presence of factor V-Leiden or G20210A prothrombin gene mutation was a weak independent predictor of VTE in relatives (adjusted OR, 1.48; 95% CI, 0.94-2.33).

“Hybrid” Repair of Aneurysms of the Transverse Aortic Arch: Midterm Results


Conclusion: Hybrid repair of transverse aortic arch aneurysms at midterm follow-up is safe and effective.

Summary: A combination of endovascular and open surgical approaches to the treatment of transverse arch aneurysms has been described (Ann Thorac Surg 2008;86:1524-9; J Thorac Cardiovasc Surg 2008;136:21-8). Potential advantages of the hybrid approach include lower perioperative morbidity and mortality and single-stage treatment of some pathologies that previously required a two-stage repair. At the authors' institution between March 2005 and October 2008, 179 thoracic endograft procedures were performed, of which 28 (16%) were hybrid arch repairs. Indications included saccular aneurysm (n = 11) and fusiform aneurysm (n = 17) of the transverse arch. The aneurysm in 10 patients (36%) was secondary to aortic dissection in patients with >2 cm of proximal landing zone distal to the innominate artery. In these cases, a right-to-left carotid-carotid bypass was performed to create a proximal landing zone covering the left carotid origin. For 12 patients with mid arch aneurysms and >2 cm of proximal landing zone, a one-stage elephant trunk procedure was used to create a proximal landing zone. Procedures were staged in the group receiving an initial elephant trunk procedure but were performed at the same setting in the other two groups. The mean patient age was 64 ± 13 years. Technical success was achieved in 100%. The 30-day and in hospital death, stroke, and permanent paraplegia rates were 0%, 0%, and 3.6%, respectively. No late aortic related events have occurred at a median follow-up of 14 ± 11 months. Two type 1 endovascular leaks required a secondary endovascular intervention.

Comment: In expert hands, total arch replacement with traditional techniques frequently requires deep hypothermic circulatory arrest, often a two-stage procedure, and has the attendant elevated risk of stroke rates approaching 15% (Ann Thorac Surg 2007;83 [suppl]:S815-8). Comparatively, the current results with hybrid procedures seem improved. The approach has several potential technical advantages. Cardiopulmonary bypass is generally not needed, and simultaneous treatment of arch and descending thoracic lesions, which previously required a two-stage repair with elephant trunk procedures, can be performed sooner, given the smaller magnitude of the endovascular component. The authors note that using existing Dacron grafts for proximal landing zones may be problematic. Type 1 endoleak for such
Major Bleeding, Mortality, and Efficacy of Fondaparinux in Venous Thromboembolism Prevention Trials


They suggest oversizing the endograft 20% by the presence of an endograft. They suggest oversizing the endograft 20% and a proximal landing zone with at least 4 cm of overlap when the graft is landed in Dacron.

Conclusion: Major bleeding in hospitalized patients participating in venous thromboembolism (VTE) prevention trials is a strong predictor of mortality.

Summary: Emerging evidence suggests bleeding is a strong predictor of death in patients with acute arterial thrombosis receiving antithrombotic therapy (Eur Heart J 2007;28:1193-204; Neurology 2008;71:650-5). It is, however, unknown whether a similar association exists between bleeding and death in patients with VTE. The authors used a fondaparinux VTE prevention database to examine the association between major bleeding and death, with adjustments for other patient characteristics. Analysis of the fondaparinux database was provided by GlaxoSmithKline. The database consisted of all phase 3 randomized controlled trials comparing fondaparinux (2.5 mg once daily) with low-molecular-weight heparin or placebo for prevention of VTE. The trials included 13,085 patients undergoing hip replacement surgery, major knee surgery, or elective abdominal surgery, and an additional 2,815 patients. Major bleeding was defined as intracranial, intracranial, intrapacral, or any bleeding that involved a critical organ or led to reoperation, or overt bleeding with a bleeding index (calculated as the number of packed red blood cells or whole blood transfusions plus pre-bleeding hemoglobin concentration minus post bleeding hemoglobin concentration) > 2. The primary outcome variable was death in ≤30 days.

Patients who developed major bleeding were older, more likely to be male, had a lower body mass index and lower creatinine clearance, and were more likely to be receiving fondaparinux. At 30 days, the risk of death was sevenfold higher among patients with a major bleeding event (8 accesses 1.7% adjusted hazard ratio [HR], 6.96; 95% confidence interval [CI], 4.6-10.5). However, fondaparinux was associated with a decreased mortality rate in the patients experiencing major bleeding (6.8% vs. 11.4%; HR, 0.58; 95% CI, 0.27-1.23).

Comment: This article has three findings of particular interest. First, lower body weight, male sex, and renal dysfunction are predictors of major bleeding in patients enrolled in VTE prevention trials. Second, major bleeding in patients enrolled in these trials is associated with a sevenfold increased mortality rate at 30 days. Finally, fondaparinux, although associated with an increased risk of bleeding, appeared to be associated with a decreased risk of death with major bleeding compared with major bleeding associated with other antithrombotic agents. The data are consistent with previous studies showing an association between major bleeding and death in patients treated with antithrombotic agents for acute coronary syndromes and ischemic stroke. Only 6% of the deaths in this analysis were directly attributed to the bleeding episode. The precise reasons for increased death in patients with major bleeding while being treated with anticoagulation agents remain to be determined.

Open Abdominal Aortic Aneurysm Repair in the Endovascular Era: Effect of Clamp Site on Outcomes


Conclusion: Suprarenal cross clamping during open abdominal aortic aneurysm (AAA) repair is associated with increased rates of complications but similar mortality rates and need for nursing home placement as open abdominal aortic aneurysm (AAA) repair with infrarenal clamping.

Summary: Currently, the most frequent anatomic restriction for use of the endovascular aneurysm repair (EVAR) is an inadequate infrarenal neck to achieve proximal fixation. Although performed “under the table” in some centers in only a few centers in the United States is fenestrated endografting currently performed with actual investigational device exemptions (IDEs). Therefore, AAAs with an inadequate proximal fixation zone still need open AAA repair in most centers. This is a study of contemporary series of open AAA repairs in patients who were not considered suitable candidates for EVAR.

Patients were derived from those undergoing open repair during the endovascular era. Consecutive unruptured open aneurysm repairs from March 1, 2000, through July 31, 2007, were reviewed. There were 185 patients who underwent 103 infrarenal and 82 suprarenal cross-clamp repairs. The location of any complication was 37% with infrarenal and 61% for suprarenal cross-clamp repairs (P = .001). The 30-day mortality was 2.9% for AAA repair with an infrarenal cross clamp and 6.1% for AAA repair with a suprarenal cross clamp (P = .18). Complications that occurred most frequently in the suprarenal cross-clamp group were postoperative renal insufficiency and pulmonary complications. Suprarenal cross clamps were also associated with greater intraoperative blood loss, operative duration, and use of adjunctive renal or vascular grafts. Intensive care units and hospital lengths of stay were also longer in the suprarenal cross-clamp group. Patients undergoing suprarenal cross clamp had a 25.6% rate of temporary nursing home placement vs 17.5% in those patients treated with an infrarenal cross clamp (P = .14).

Comment: At some point it is almost inevitable that open AAA surgery will, to the most part, be relegated to the dustbin of the surgical history, but until this happens will depend on a slew of regulatory, engineering, technical, and cost considerations. In the interim, some AAAs will still need to be repaired with open techniques. The data indicate what is well known: Open repair is associated with significant morbidity, but mortality. Complications and deaths in endovascular repairs of AAA are, at the same time, becoming more infrequent and more complex. With the limited training available in these complex repairs in many vascular surgical residencies, it may not be appropriate for most finishing vascular surgical trainees to perform open AAA repair right out of residency without junior colleague supervision. On the other hand, it is also very likely not to be appropriate for older vascular surgeons to perform fenestrated endografts without junior colleague supervision!

Quality of Life in Patients with Idiopathic Subclavian Vein Thrombosis


Conclusion: Patients with idiopathic subclavian vein thrombosis treated without surgical or catheter based intervention have good overall quality of life; deal well with their physical limitations.

Summary: Late clinical manifestations of axillosubclavian vein thrombosis can be persistent swelling and the presence of prominent veins on the chest wall (Thromb Res 2003;110:342-346). The authors sought to determine how quality of life was affected after idiopathic subclavian vein thrombosis using the Short Form (SF)-36 survey and the Disabilities of the Arm, Shoulder and Hand (DASH) outcome questionnaire. The DASH, which was introduced in 1994 by the American Academy of Orthopedic surgeons, is a self-administered questionnaire of 20 questions designed to measure upper extremity disability and symptoms. It appears to be a highly sensitive and specific descriptor of underlying cause (J Hand Therapy 2001;14:128-46). The intent was to assess thrombosis-related disability of the upper extremity and general quality of life in patients who had had axillosubclavian vein thrombosis. The DASH and SF-36 both use 100-point scales. In DASH, 0 represents uncompromised function and 100 is maximum limitation; whereas in the SF-36, 0 is the lowest rating quality of life and 100 indicates the best imaginable quality of life.

The patients had been treated with anticoagulation alone or systemic thrombolysis, followed by anticoagulation. They did not appear to be treated with catheter-directed thrombolysis or surgical decompression of the thoracic outlet. Mean follow up was 120 ± 80 months. Right-sided subclavian vein thrombosis occurred in 22 patients (60%) and left-sided subclavian vein thrombosis occurred in 14 (40%). Anticoagulant therapy was used for <12 months after initial presentation in 92% and for >12 months in 8%. At follow-up, arm swelling was present in 43% of patients, venous ectasias in 54%, pain at rest in 16%, and pain with exercise in 22%. Despite these findings, mean DASH and SF-36 scores were good, with a mean DASH score of 10.7 ± 12 and mean SF-36 physical component summary and mental component summary of 52 ± 9.8 and 46 ± 9.5, respectively.

Comment: These data provide long-term information on symptoms and signs after conservatively managed idiopathic axillosubclavian vein thrombosis and the effects of these signs and symptoms on patient-perceived function and quality of life. Advocates of invasive management of subclavian vein thrombosis will point to the high prevalence of late symptoms and signs related to the subclavian vein thrombosis. Those favoring more conservative management will note, despite the presence of arm swelling and symptoms, the patients actually had little functional impairment and a very reasonable quality of life. In either case, the data suggest it may be difficult to demonstrate significant patient-perceived improvement with surgical therapy over medical management alone in patients with axillosubclavian vein thrombosis.

The General Prognosis of Patients with Peripheral Arterial Disease Differ According to the Disease Localization


Conclusion: Independent of risk factors and other comorbidities, in patients with peripheral arterial disease (PAD), there is a poorer overall general prognosis in patients with proximal (aortoiliac) disease compared with disease affecting more distal vessels. Distal PAD is associated with more adverse outcomes with respect to the limb itself. The general belief, with little direct evidence, is also that more