Effect of long saphenous vein stripping on deep venous reflux

MacKenzie RK, Allan L, Ruckley CV, et al. Eur J Vasc Endovasc Surg 2004;28:104-7.

Conclusion: Stripping of the greater saphenous vein (GSV) abolishes deep venous reflux in a significant proportion of limbs. Continued GSV insufficiency may be associated with development of new deep venous reflux.

Summary: The authors examined the effect of GSV stripping on known deep venous reflux and development of new deep venous reflux. The study included 62 consecutive patients who underwent saphenofemoral junction disconnection, multiple stab avulsions of varicosities, and who may or may not have undergone successful stripping of the GSV to the knee. Duplex ultrasound scanning was performed to detect venous reflux preoperatively and at a median of 24 months postoperatively. Completely stripped limbs were defined as those in which complete stripping of the GSV to the knee was confirmed on postoperative duplex scans. Duplex scanning–Detected reflux time greater than 0.5 seconds was considered abnormal.

Preoperatively, 42% of limbs had deep venous reflux. Follow-up postoperative duplex scans indicated that the GSV had been completely stripped in only 38% of limbs. In patients with preoperative deep venous reflux, complete stripping was associated with a significant reduction in the prevalence of superficial femoral vein reflux ($P < .001$) and popliteal vein reflux ($P < .016$). In patients without preoperative deep venous reflux, incomplete stripping of the GSV was associated at follow-up with development of superficial femoral vein reflux ($P < .031$) and popliteal vein reflux ($P < .008$).

Comment: The authors; data suggest that successful stripping of a refluxing GSV may improve reflux in the femoral and popliteal veins. Incomplete stripping may lead to development of new deep venous reflux in the femoral and popliteal veins. This study affirms the growing realization that deep venous reflux may derive from the presence of superficial venous reflux. The results suggest that patients with a combination of deep and superficial venous reflux may benefit from stripping of the refluxing GSV and, in fact, may be harmed by leaving a refluxing GSV in situ.

Aspirin plus clopidogrel compared with clopidogrel alone after recent ischemic stroke or transient ischemic attack in patients at high risk patients (MATCH): Randomized double-blind placebo-controlled trial

Hans-Christoph D, Bogousslavsky J, Brass LM, and the MATCH Investigators. Lancet 2004;364:331-7.

Conclusion: The combination of aspirin and clopidogrel in patients with recent ischemic stroke or transient ischemic attack (TIA) is associated with a nonsignificant difference in reducing major vascular events, compared with clopidogrel alone. The risk for life-threatening or major bleeding is, however, increased with the addition of aspirin to clopidogrel in this patient group.

Summary: The CAPRIE study (Lancet 1996;348:1329-39) demonstrated that clopidogrel is superior to aspirin in reducing cardiovascular end points in patients with previous manifestations of atheroembolic disease. The clopidogrel benefit was amplified in some subgroups of patients at high risk. In this study the authors sought to assess whether the combination of aspirin plus clopidogrel may have greater benefit than clopidogrel alone for prevention of vascular events in patients with recent ischemic stroke or TIA.

This randomized double-blind placebo-controlled trial compared aspirin, 75 mg/d, with placebo in 7599 patients at high-risk who were already receiving clopidogrel, 75 mg/d, and who had had a recent ischemic stroke or TIA and at least 1 additional vascular risk factor. Treatment and follow-up was 18 months. The primary end point was the composite end point of ischemic stroke, myocardial infarction, vascular death, or hospitalization with acute ischemia (TIA, angina, worsening peripheral arterial disease). The data were analyzed on an intent-to-treat basis, with the log-rank test and Cox proportional hazards model.

The primary end point was reached in 596 patients (15.7%) receiving aspirin plus clopidogrel compared with 636 patients (16.7%) receiving clopidogrel alone (relative risk reduction 6.4%, 95% confidence interval, −4.6 to 16.3; absolute risk reduction 1%, 95% CI −0.6 to 2.7). Life-threatening bleeding was higher in the group receiving aspirin plus clopidogrel versus clopidogrel alone: 3.6% versus 1.3% (absolute risk increase 1.3%, 95% CI 0.6-1.9). Major bleeding was also increased in the group receiving aspirin plus clopidogrel, but there were no differences in mortality compared with group receiving clopidogrel alone.

Comment: The CAPRIE study established that clopidogrel is more effective than aspirin in reducing cardiovascular end points in patients with vascular disease. This study highlights the old axiom that the enemy of good may be better. Results do not support the use of clopidogrel plus aspirin in patients with a recent TIA or stroke. At this time clopidogrel alone appears to be optimal antiplatelet therapy in these patients.

Temporal gene expression after prosthetic arterial grafting

Willis DJ, Kalish JA, Li C, et al. J Surg Res 2004;120:27-36.

Conclusion: Specific upregulation of genes and specific downregulation of genes occurs in associated with prosthetic grafting in an animal model.

Summary: Smooth muscle cell proliferation and matrix production associated with intimal hyperplasia is well known. The study evaluated potential upregulation and downregulation of genes after prosthetic arterial grafting, which by inference may influence intimal hyperplasia. The authors specifically targeted gene expression at the distal anastomosis of prosthetic arterial grafts, with micro-ray analysis.

Expandable polytetrafluoroethylene (ePTFE) carotid interposition grafts (n = 12) were implanted into mongrel dogs. Fragments from the distal anastomosis were harvested at 7, 14, 30, or 60 days. The contralateral carotid artery served as control. RNA was isolated from anastomotic tissue and from the paired control arteries. Samples were probed with oligonucleotide micro-rays consisting of approximately 10,000 human genes.

A total of 49 genes were found to be upregulated, and 37 genes were found to be downregulated at various points. Some genes were upregulated at all time intervals, and included collagen type $1_{\alpha 1}$ and type $1_{\alpha 2}$, 80 K-L protein (myristoylated alanine-rich protein C kinase substrate), and osteopontin. Eight genes consistently downregulated. These included smoothelin and tropomyosin.

Comment: There is no consensus regarding the most appropriate method for analyzing gene expression with micro arrays. Studies such as this are basically "shotgun approaches" that seek to identify gene expression associated with a biologic process. They do, however, provide a useful starting point, and likely will ultimately lead to further studies specifically linking gene expression with biologic function.

Fondaparinux or enoxaparin for initial treatment of symptomatic deep venous thrombosis: Randomized trial

Buller HR, Davidson BL, Decousus H, and the Matisse Investigators. Ann Intern Med 2004;140:867-73.

Conclusion: Once-daily subcutaneous fondaparinux is as effective and safe as twice-daily body weight–adjusted enoxaparin for initial treatment of symptomatic deep venous thrombosis (DVT).

Summary: This randomized, double-blind study was conducted in 154 centers worldwide, with 2205 patients with acute symptomatic DVT. The goal was to establish whether fondaparinux had similar efficacy and safety as enoxaparin in treatment of acute DVT. Patients were randomized to received fondaparinux, 7.5mg (5.0 mg in patients weighing > 50 kg and 10.0 mg in patients weighing > 100 kg) subcutaneously once daily, or enoxaparin, 1 mg/kg of body weight, subcutaneously twice daily for at least 5 days, until vitamin K antagonists induced an international normalized ratio greater than 2.0. The primary efficacy outcome was the 3-month incidence of symptomatic recurrent venous thromboembolism (VTE). Safety outcomes were major bleeding during initial treatment, and death. All outcomes were adjudicated with blinded assessment by an independent committee.

Of 1098 patients randomly assigned to receive fondaparinux, 43 patients (3.9%) had a recurrent VTE event, compared with recurrent VTE events in 45 patients (4.1%) of 1107 patients randomly assigned to receive enoxaparin (absolute difference, −0.15 percentage point; 95% confidence interval, −1.8 to +1.5 percentage points). Major bleeding occurred in 1.1% of patients receiving fondaparinux and 1.2% of patients receiving enoxaparin. Mortality rates were 3.8% and 3.0%, respectively.

Comment: Fondaparinux is a synthetic selective inhibitor of factor Xa. This study indicates the noninferiority of fondaparinux compared with enoxaparin for treatment of acute DVT. It adds to the growing evidence that inhibitors of activated factor Xa are safe, effective and easy to use antithrombotic agents.