Abstracts

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Additional Supervised Exercise Therapy After a Percutaneous Vascular Intervention for Peripheral Arterial Disease: A Randomized Clinical Trial

Kruidenier LM, Nicola SP, Rouwet EV et al. J Vasc Interv Radiol 2011;22: 961-8.

Conclusion: Following a peripheral vascular intervention (PVI) supervised exercise training (SET) is more effective in increasing walking distance than PVI alone.

Summary: TASC II suggests supervised exercise therapy (SET) is primary treatment of intermittent claudication. However despite TASC guidelines, percutaneous interventions (PVIs) are increasingly used for treatment of intermittent claudication. Immediate technical success exceeds 90%. Many patients, however, after a PVI, and despite patency of the treated arterial segment, have persistent or recurrent symptoms. It has been suggested that SET combined with a PVI may provide better therapy than PVI alone for patients with stable intermittent claudication (Mazari FA. Ann Vasc Surg 2010;24:69-79).

The current study is a randomized prospective clinical trial evaluating the combination of a PVI of either aortoiliac disease or infra-inguinal disease in combination with supplemental SET. The combined patients were compared to those undergoing a PVI alone. Patients with PAD treated with a PVI were eligible for inclusion. Exclusion criteria were major amputation or tissue loss, or any co-morbidity preventing physical activity, insufficient knowledge of the Dutch language, no insurance for SET and prior participation in a SET program. All patients received a PVI and were then randomly assigned to either PVI alone (n = 35) or PVI plus SET (n = 35). The primary outcome parameter was absolute claudication distance. Quality of life was assessed with the SF-36 and Europol 5-D questionnaires. Most patients were treated for an aortoiliac lesion. The mean difference in absolute claudication distance at 6 months of follow up was 271.3 meters (95% CI, 64-479; $P = .011$) in favor of the addition of SET to the PVI. In patients treated with PVI alone, only one (3.7%) finished the complete treadmill test compared with 11 (32.4%) treated with PVI and SET ($P = .005$). Physical health related quality of life score was 44.1 ± 7.8 in the intervention group alone compared with 41.9 ± 9.5 in the intervention plus exercise training group, a non significant difference ($P = .34$) .

Comment: The study raises interesting questions about the role of PVIs for treatment of claudication. One may ask what is it that matters, an increase in walking distance or an increase in patient quality of life (QOL)? In this study, an increase in walking distance did not translate directly into QOL improvement for the patients. This suggests better selection methods for treatment of patients with PVIs for claudication may be needed or that perhaps the generic QOL instruments utilized here lacked sensitivity to detect meaningful QOL changes in patients likely afflicted by numerous additional co-morbidities. Different results may have been obtained with a disease specific QOL instrument.

Staged Versus Synchronous Carotid Endarterectomy and Coronary Artery Bypass Grafting: Analysis of 10-Year Nationwide Outcomes

Gopaldas RR, Chu D, Dao TK, et al. Ann Thorac Surg 2011;91:1323-9.

Conclusion: Patients undergoing staged or synchronous approaches to carotid endarterectomy (CEA) and coronary artery bypass grafting (CABG) have no significant differences with respect to mortality or neurologic complications.

Summary: Vascular and cardiac surgeons often have to determine how to appropriately time surgical procedures for concurrent carotid and coronary artery disease. In patients with co-existing carotid and coronary artery disease (CAD), where both are judged to be in need of surgical repair, there are studies favoring both synchronous and staged approaches (Naylor R et al. Eur J Vasc Endovasc Surg 2003;26:230-41, Takach TJ et al. Ann Thorac Surg 1997;64:16-22, and Hertzer NR et al. J Vasc Surg 1989;9:455-63). Vascular surgeons are concerned about potential cardiac complications in their patients undergoing CEA who also have severe coronary artery disease, but are also concerned about being " credited " for a stroke in patients undergoing a synchronous CABG and CEA when the etiology of the stroke may be related to the CABG rather than the CEA. Many institutions reserve synchronous procedures for patients with severe coronary and cerebrovascular symptoms. Some have found better outcomes in patients with asymptomatic carotid disease, than in patients with carotid symptoms supporting the use of synchronous CABG and CEA in patients with asymptomatic carotid disease (Estes JM, et al. J Vasc Surg 2001;33:1179-84). The authors sought to assess nationwide use of synchronous and staged approaches to CEA and CABG. They also evaluated differences in costs and surgical outcomes between the two operative approaches.

The nationwide inpatient sample data base from 1988 to 2007 was utilized for this study. The authors identified 6153 patients who underwent CEA before or after CABG during the same hospital admission, but not on the same day (Staged). There were 16,639 patients who underwent both procedures on the same day (Synchronous). Independent effects of operative strategy on mortality, neurologic and overall complications, and hospital charges were determined with hierarchic multivariable regression analysis. The mean age of the patients was 69.5 ± 9.0 years. The Charlson-Deyo score (4.6 ± 1.5) was similar for both groups. Neurologic complications 3.5% versus 3.9% and mortality 4.2 % versus 4.5% were similar between groups ($P > .7$ for both). Staged patients had higher morbidity (48.4% versus 49.6%; OR, 1.8; 95%CI, 1.5 to 2.2; $P < .001$). Staged patients also had more cardiac (OR, 1.5; 95%CI, 1.4 to 1.7; $P < .001$), wound (OR, 2.1; 95% CI, 1.8 to 2.4; $P < .001$), respiratory (OR, 1.2; 95% CI, 1.1 to 1.3; $P = .001$), and renal complications (OR, 1.2; 95% CI, 1.03 to 1.3; $P < .001$). On-pump CABG increased stroke rates in synchronous patients (OR, 1.6; 95% CI, 1.3 to 1.9; $P < .001$). Hospital charges were higher in the staged patients by $23,323 ($P < .001$).

Comment: There continues to be no definitive answer to the question of what to do with patients requiring both CEA and CABG in close proximity to each other. This study seems to favor simultaneous procedures. Hospital chargers where higher with staged procedures and neurologic complications and mortality were not different. However, the exact severity of the carotid or coronary disease is unknown in these patients. We do not know what proportion of patients underwent a so called "staged procedure" to treat a complication of the initial procedure. Patients who underwent separate, but temporarily close admissions, for CABG and CEA are not identified, but could, in effect, have undergone staged procedures. Finally, in about ½ the patients data on dates of admission, operation or discharge were missing, thus preventing classifying operations as synchronous or staged. The best that one can conclude from this article is that it does not discredit the practice of simultaneous CEA and CABG. However, it is also not strong evidence toward the performance of synchronous procedures.

Clincial and Technical Outcomes From a Randomized Clinical Trial of Endovenous Laser Ablation Compared With Conventional Surgery for Great Saphenous Varicose Veins

Carradice D, Mekako AI, Mazari FA, et al. Br J Surg 2011;98:117-23.

Conclusion: In the short term endovascular laser ablation (EVLA) has lower rates of clinical recurrence than conventional surgery in treatment of great saphenous vein (GSV) varicose veins.

Summary: Conventional surgical treatment of superficial venous incompetence has high recurrence rates; up to 30% at one year, 40% at two years and 66% beyond 10 years (Campbell WB et al. Ann R Coll Surg Engl 2003;85:52-7, and Van Rij AM et al. J Vasc Surg 2003;38:935-43). Requests for intervention following recurrence are less common than recurrence of varicosities. About 15 to 20% of varicose vein procedures are performed for recurrence (Gibbs PJ et al. Eur J Vasc Endovasc Surg 1999;18:494-8). This paper reports relative rates of clinical recurrence and patterns of treatment failure of patients enrolled in a non-blinded, randomized trial of endovenous laser ablation (EVLA) versus conventional surgery in treatment of GSV varicose veins. There were 280 patients randomized equally using sealed opaque envelopes to two parallel groups, EVLA or conventional surgery. To be included in the trial, patients had to have symptomatic disease secondary to primary unilateral isolated saphenofemoral junction incompetence leading to GSV reflux. Outcomes analyzed were technical success, recurrent veins on clinical examination, patterns of reflux on duplex ultrasound examination, and effect of recurrence on quality of life as assessed by the Aberdeen Varicose Vein Questionnaire (AVVQ). Assessments were performed at 1, 6, 12 and 52 weeks.

Technical success was better with EVLA than conventional surgery (99.3 vs 92.4%; $P = .005$). Inability to strip the above knee GSV was the main cause of surgical failure. Clinical recurrence at 1 year was lower after EVLA (4% vs 20.4 %; $P < .001$). It is estimated that 6.3 patients would need to be treated with EVLA rather than surgery to avoid one recurrence at one year (95% CI, 4.0 to 12.5). Of the 23 surgical recurrences, 12 were related to incompetent below the knee GSVs and 10 were ascribed to neovascular-iztion. There were 5 recurrences following EVLA with two related to neoreflux and groin tributaries and one to recanalization. Worse AVVQ scores correlated with clinical recurrence ($P < .001$).

Comment: One can question the widely practiced principal of only stripping the GSV to the knee as the largest number of recurrences in the