

Selected Abstracts from the July Issue of the European Journal of Vascular and Endovascular Surgery

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Variation in Clinical Practice in Carotid Surgery in Nine Countries 2005–2010. Lessons from VASCUNET and Recommendations for the Future of National Clinical Audit

Vikatmaa P., Mitchell D., Jensen L.P., Beiles B., Björck M., Halbakken E., Lees T., Menyhei G., Palombo D., Troëng T., Wigger P., Venermo M. *Eur J Vasc Endovasc Surg* 2012;44:11-7.

Objectives: The aim of the study was to analyse variation in carotid surgical practice, results and effectiveness in nine countries.

Patients and Methods: A total of 48,185 carotid endarterectomies (CEAs) and 4602 carotid artery stenting (CAS) procedures were included in the comparison. A theoretical effectiveness of CEA provision for each country was estimated.

Results: 92.6% of the CEAs were performed according to the inclusion criteria based on the current European recommendations and had a theoretical benefit for the patient. The indication for surgery was symptomatic stenosis in 60.1% and this proportion varied between 31.4% in Italy and 100% in Denmark. The overall combined stroke and death rate in symptomatic patients was 2.3%. This varied between rates of 0.9% in Italy and 3.8% in Norway. The overall combined stroke and death rate in asymptomatic patients was 0.9%. It was lowest in Italy at 0.5%, and highest in Sweden at 2.7%. We estimated that the stroke prevention rate per 1000 CEAs varied from 72.9 in Italy to 130.8 in Denmark.

Conclusions: There is significant variation in clinical practice across the participating countries. The theoretical stroke prevention potential of CEA seems to vary between participating countries due to differences in the inclusion criteria.

ADSORB: A Study on the Efficacy of Endovascular Grafting in Uncomplicated Acute Dissection of the Descending Aorta

Brunkwall J., Lammer J., Verhoeven E., Taylor P. *Eur J Vasc Endovasc Surg* 2012;44:31-6.

Acute dissection of the descending thoracic aorta carries a 30-day mortality of around 10% with best medical treatment (BMT). In addition, about 25% will develop an aneurysm during the following 4–5 years.

This is the first ever randomised trial on acute dissections comparing BMT with BMT and stent grafting of the proximal tear in patients having an uncomplicated acute dissection of the descending aorta. The commonly used temporal definition of acute dissection being within 14 days of onset of symptoms is applied.

A total of 61 patients will be randomised and followed at regular intervals (1, 3, 6, 12, 18, 24, 30 and 36 months) after acute dissection. Thrombosis of the false lumen, aortic enlargement and rupture are the primary end points.

The study will examine whether aortic remodelling occurs after stent grafting in acute type B dissections, and its effect on aneurysm formation, rupture and re-intervention.

Treatment of Post-implantation Aneurysm Growth by Laparoscopic Sac Fenestration: Long-term Results

Voûte M.T., Bastos Gonçalves F.M., Hendriks J.M., Metz R., van Sambeek M.R.H.M., Muhs B.E., Verhagen H.J.M. *Eur J Vasc Endovasc Surg* 2012;44:40-4.

Objectives: Sac growth after endovascular aneurysm repair (EVAR) is an important finding, which may influence prognosis. In case of a type II endoleak or endotension, clipping of side branches and subsequent sac fenestration has been presented as a therapeutic alternative. The long-term clinical efficacy of this procedure is unknown.

Methods: The study included eight patients who underwent laparoscopic aortic collateral clipping and sac fenestration for enlarging aneurysms following EVAR. Secondary interventions and clinical outcome were retrieved from hospital records. Sac behaviour was evaluated measuring volumes on periodical computed tomography angiography (CTA) imaging using dedicated software.

Results: Follow-up had a median length of 6.6 (range 0.6–8.6) years. During this time, only three patients successfully achieved durable aneurysm shrinkage ($n = 2$) or stability ($n = 1$). The remaining patients suffered persistent ($n = 2$) or recurrent sac growth ($n = 3$), all regarded as failure of fenestration. A total of six additional interventions were performed, comprising open conversion ($n = 2$), relining ($n = 1$) and implantation of iliac extensions ($n = 3$). All additional interventions were successful at arresting further sac growth during the remainder of follow-up.

Conclusions: Despite being a less invasive alternative to conversion and open repair, the long-term outcome of sac fenestration is unpredictable and additional major procedures were often necessary to arrest sac growth.

The Impact of Decreasing Abdominal Aortic Aneurysm Prevalence on a Local Aneurysm Screening Programme

Darwood R.J., Brooks M.J. *Eur J Vasc Endovasc Surg* 2012;44:45-50.

Objectives: The NHS Abdominal Aortic Aneurysm Screening Programme (NAAASP), based on the Multicentre Aneurysm Screening Study (MASS) trial (2002), is being introduced across the UK. Recent studies have demonstrated a decline in prevalence of abdominal aortic aneurysm (AAA). The aim of this study was to examine the effect of this on screening workload.

Methods: A model was developed to predict screening and surgical workload for a screening centre (Bristol – population 1,123,203). Workload was compared using data from MASS with data from the “Early Implementers” (EI) of NAAASP.

Results: Modelling for 2011/2012 using EI data predicted significantly fewer men diagnosed with an AAA compared to MASS data [84 (EI) versus 198 (MASS) $p < 0.0001$] and fewer referrals to a vascular surgeon for AAA repair [10 (EI) versus 30 (MASS) $p = 0.0002$]. This difference became more marked with time (2015/16: 90 (EI) versus 212 (MASS) men diagnosed with an AAA ($p < 0.0001$) and 29 (EI) versus 71 (MASS) referred to a vascular surgeon ($p < 0.0001$)). From 2015/16 there was also a significant reduction in the predicted number of ultrasound scans.

Conclusions: Modelling screening activity based on contemporary epidemiological data demonstrates a significant reduction in workload compared to MASS data. This has implications for workforce planning, the introduction of new screening centres and the future of NAAASP.

Risk Stratification Scores in Elective Open Abdominal Aortic Aneurysm Repair: Are They Suitable for Preoperative Decision Making?

Bryce G.J., Payne C.J., Gibson S.C., Kingsmore D.B., Byrne D.S., Delles C. *Eur J Vasc Endovasc Surg* 2012;44:55-61.

Objectives: Risk indices help quantify the risk of cardiovascular events and death prior to making decisions about prophylactic AAA repair. This paper aims to study the predictive capabilities of 5 validated indices.

Design and methods: A prospective observational multi-centre cohort study from August 2005 to September 2007 in Glasgow recruited 106 consecutive patients undergoing elective open AAA repair. The Glasgow Aneurysm Score (GAS), Vascular physiology only Physiological and Operative Severity Score for enUmeration of Mortality (V(p)-POSSUM), Vascular Biochemical and Haematological Outcome Model (VBHOM), Revised Cardiac Risk Index (RCRI) and Preoperative Risk Score of the Estimation of Physiological Ability and Surgical Stress Score (PRS of E-PASS) were calculated. Indices were compared using receiver operating characteristic (ROC) analysis and area under the curve (AUC) estimates. End points were all-cause mortality, Major Adverse Cardiac Events (MACE) and cardiac death.

Results: GAS, VBHOM and RCRI did not predict outcome. V(p)-POSSUM predicted MACE (AUC = 0.681), cardiac death (AUC = 0.762) and all-cause mortality (AUC = 0.780), as did E-PASS (AUC = 0.682, 0.821, 0.703 for MACE, cardiac death and all-cause mortality respectively).

Conclusion: Whilst V(p)-POSSUM and E-PASS predicted outcome, the less complex RCRI and GAS performed poorly which questions the utility of decision making based on these surgical risk indices.