

VASCULAR SURGERY

VS01
PREDICTIVE MODEL OF SUCCESS FOR EVAR

J. L. ANDERSON, R. FITRIDGE, M. BOULT, M. BARNES AND G. MADDERN

ASERNIP-S, South Australia, Australia

Purpose To provide an overview of a predictive model of success that has been developed using the five-year results from the audit of endovascular aneurysm repair (EVAR).

Methodology Preoperative and operative EVAR information was collected from surgeons for procedures performed between November 1999 and May 2001. Annual follow-up has continued with a view to examining mid to long-term safety and effectiveness. Data was linked through the National Death Index to obtain accurate mortality information.

A statistician applied generalised linear models (logistic regressions) on the data to predict measures of success. Stepwise forward logistic regressions were used to select which of the preoperative patient variables were included in each success measure model. Using this analysis, an interactive Microsoft Excel program was designed to help surgeons to evaluate the predicted likelihood of success of the procedure.

Results Eight predictor variables were used to assess relationships with various measure of success. Measures included technical success, likelihood of re-interventions, graft complications, migration, conversion to open, rupture, endoleak, mortality and survival. Copies of the model (Excel spreadsheet) were circulated to members of the audit reference group and other specialist vascular surgeons for comment. Clinical feedback was used to further refine the model and improve its utility.

Conclusions The predictive model is available to vascular surgeons through the RACS website. It was developed as an aid for surgeons and patients to decide treatment options. Surgeons and patients can discuss patient's likely outcomes (e.g. complications and survival likelihood) to better inform the EVAR decision.

VS02
AORTIC CALCIFICATION: STUDIES IN PATIENTS WITH PERIPHERAL ARTERY DISEASE AND A MOUSE MODEL

J. GOLLEDGE, S. PAL, R. JAYALATH, A. VAN CAMPENHOUT, P. CLANCY AND C. RUSH

James Cook University, Queensland, Australia

Purpose Aortic calcification is associated with subsequent cardiovascular events however relatively little is understood about its pathogenesis. This presentation describes on-going work to improve measurement, diagnosis and understanding of aortic calcification.

Methodology Studies have been carried out in a cohort of patients with peripheral artery disease and within an animal model.

Results We have developed and validated a technique to accurately assess the severity of infrarenal abdominal aortic calcification using CT angiography within patients. Utilising this technique we have investigated a number of potential blood tests to assess their value in determining aortic calcification severity. Within a mouse model of aortic calcification we are investigating the role of bone marrow derived cells in calcification development.

Conclusions Further understanding of the mechanisms underlying aortic calcification may identify targets to treat calcification which are independent of those for atherosclerosis.

VS03
ABDOMINAL AORTIC ANEURYSM: INSIGHT INTO PATHOGENESIS, BIOMARKERS AND TARGETS FOR MEDICAL THERAPY

J. GOLLEDGE, P. CLANCY, B. CULLEN, C. MORAN, J. MULLER AND P. E. NORMAN

James Cook University, Queensland, Australia

Purpose Abdominal aortic aneurysm (AAA) is a common cause of mortality and at present no drug therapy is available. This presentation describes

on-going work to improve diagnosis, knowledge of the pathogenesis and identify targets for drug therapy.

Methodology A number of approaches are being utilised including:

- i) Assessment of serum and genetic markers of AAA presence and growth.
- ii) Examination of human AAA biopsies.
- iii) Investigation of a mouse model of AAA.

Results A number of potential biomarkers for AAA have been identified including osteoprotegerin and osteopontin, although at present their accuracy appears to be insufficient for clinical use. Utilising human AAA explants and a mouse model a potential pathway of slowing AAA growth has been identified. Further studies are needed to clarify the value of this approach.

Conclusions Utilising the combined approaches described in this presentation it is envisaged that important biomarkers and pathways of slowing AAA growth will be identified.

VS04
RISK/BENEFIT ASSESSMENT FOR ELECTIVE ABDOMINAL AORTIC ANEURYSM SURGERY

J. A. ROAKE

University of Otago, Otago, New Zealand

Purpose Prediction of individual survival benefit from elective surgery for infrarenal abdominal aortic aneurysm (AAA) is dependent upon a complex interplay between several independent but inter-related variables. A computerised evidence-based predictive model was developed to assist clinical decisions on indications for, and timing of, AAA surgery.

Methodology A systematic review of the literature was conducted to identify independent variables that determine survival of patients with AAA. A complex Markov-type predictive model was developed with the following outputs: Predicted risk of rupture, operative mortality, life expectancy after AAA surgery, survival with/without surgery, survival curve crossover and breakeven points and number needed to treat.

Results Independent determinants of survival identified included predictors of a) AAA rupture (Initial diameter; Annual growth rate; Sex; Mean BP; Smoking status), b) Operative mortality (Surgical unit average mortality; Age; Sex; Cardiac, renal and pulmonary co-morbidity), c) Life expectancy (Median life expectancy at baseline; average annual mortality secondary to co-morbidity; adjustment for smoking, CHF or ischaemic ECG, Renal failure, COPD), and d) Post-repair AAA-related mortality. A sensitivity analysis demonstrated that the outputs were most sensitive to changes in AAA rupture rate and operative mortality.

Conclusions This predictive model has the potential to assist in management of patients with AAA. While the outputs require validation as objective measures of the potential to benefit from surgery, the interpretation of their relative importance will always remain a matter for subjective judgement dependent upon individual circumstances and preferences.

VS05
LAPAROSCOPIC ENDOVASCULAR AORTOBIFEMORAL BYPASS

S. J. JANSEN, M. M. D. LAWRENCE-BROWN, D. E. HARTLEY, W. DUCKE, T. RESCH AND J. B. SEMMENS

Sir Charles Gairdner Hospital, Western Australia, Australia

Purpose Patients with iliac stenosis or occlusion may currently be denied endovascular solutions to aneurysmal or occlusive disease. We have previously described a method for laparoscopic delivery of a transperitoneal endovascular conduit avoiding the need for a muscle-cutting incision. We now describe a laparoscopic technique for endovascular placement of a partially stented aortobifemoral (ABF) bypass which may be used for proximal endovascular manipulation e.g. in the thoracic aorta, and thereafter retained as a bypass.

Methodology Ethical approval was obtained to use a fresh frozen cadaver. The left common iliac artery, distal aorta and proximal right common iliac artery were dissected laparoscopically. Wire access of the distal aorta was obtained using a hollow needle. A partially stented graft was then deployed under fluoroscopy into the distal aorta. One limb was clamped intra-corporeally while the other was delivered through a port to enable endovascular access and manipulation. The limbs were then tunneled retroperitoneally and anastomosed to the femoral arteries in the conventional manner retaining the stent graft as a permanent bypass.

Results Introduction and deployment were successful.

Conclusion This novel hybrid approach combines laparoscopic and endovascular techniques to place an ABF bypass without the need for abdominal incision and is therefore a minimally invasive solution to pelvic occlusive disease. It is worthy of consideration as many vascular surgeons will have the requisite skills.

- 1 A Laparoscopic access Technique for Endovascular procedures: Surgeon Training in an animal model. SJ Fearn, K Burke, D Hartley, J Semmens, Lawrence-Brown J Endovascular Therapy 2006;13:350–56.

VS06 THE OTAGO VARICOSE VEINS CONDITION-SPECIFIC QUESTIONNAIRE FOR ASSESSMENT OF QUALITY OF LIFE FOLLOWING SURGERY OR SCLEROTHERAPY

T. Y. T. CHEN, J. MACFARLANE, M. G. LANDMANN AND A. M. VAN RIJ

Surgery Department, University of Otago, Dunedin, New Zealand

Purpose The Otago Varicose Veins Condition-Specific Questionnaire (OCSQ) is a validated quality of life (QOL) tool for use in the pre-treatment setting. This follow-on study investigates how the OCSQ reflects changes in QOL following treatment, and how these changes relate to clinical and vascular laboratory outcomes.

Methodology Patients with varicose veins undergoing pre-treatment assessment at the Otago Vascular Laboratory were recruited. The OCSQ was administered at the time of assessment and at 1, 3, 6, and 12 months post-treatment. A follow-up laboratory assessment was performed at 12 months. Pre and post-treatment QOL at each time point were compared. The relationships between QOL, patient demographics and laboratory measures were examined.

Results Of the 218 patients, the average pre-treatment QOL score was $26.3\% \pm 17.3$ (a higher score indicates a poorer QOL), and following treatment the scores improved at all time points ($p < 0.05$). The effect sizes were moderate to large, and the greatest QOL was seen at 3 months ($11.3\% \pm 12.5$). There was an association between longer prior disease duration and poorer QOL at 3 months ($r = 0.31, p < 0.01$), and between older age and poorer QOL at 12 months ($r = 0.31, p < 0.01$). Patients having treatment for recurrent disease showed lower levels of QOL than those with primary disease. Apart from the Venous Clinical Severity Score, no laboratory measure correlated with QOL.

Conclusions The OCSQ is a useful tool in evaluating QOL following treatment for varicose veins. Changes in QOL are not well reflected in laboratory measures. Age, prior disease duration, and recurrent disease seem to limit the improvement in QOL following treatment.

VS07 PRIORITY SCORING OF UNMET NEED FOR PATIENTS WITH VARICOSE VEINS

E. HORROCKS, D. R. LEWIS AND J. A. ROAKE

Dept of Vascular Surgery, Christchurch Hospital, Canterbury, New Zealand

Purpose Surgery for symptomatic varicose veins (vv's) has been shown to be clinically and cost effective but few varicose vein operations are performed at Christchurch Hospital, New Zealand. A scoring system has been designed by NZ Vascular Surgeons and The Ministry of Health to grade priority of patients with vv's. The aim of this study was to assess how many patients, recently removed from the hospital waiting list, score highly enough to still warrant surgery.

Methods A cohort of 77 patients, returned to GP care, was identified and scored according to their clinical records. The scoring system assessed the following six areas applying a weighted score to each domain: Extent of disease; Severity of disease; Disability; Surgery (simple or complex); Contraindications to surgery and ASA Score.

Results The median (range) age was 58 (28–81) years with a M : F ratio of 2 : 1. The mean score was 72% (range 31–96%). 66 patients (86%) achieved high enough priority scores to still need surgery.

Conclusion Of the 77 patients recently removed from the varicose vein waiting list the vast majority still need surgery in the public system. These patients should not have been removed from the waiting list, rather additional funding is needed so that vascular surgeons can address this unmet need.

VS08 3D MODELS OF BLOOD FLOW IN THE CEREBRAL-VASCULATURE

T. DAVID, S. MOORE AND J. FINK

University of Canterbury, Canterbury, New Zealand

The Circle of Willis (CoW) is a ring-like arterial structure located in the base of the brain, responsible for the distribution of oxygenated blood throughout the cerebral mass. Among the general population, approximately 50% have a complete CoW, where among a multitude of possible anatomical variations, vessels absent from the CoW are common. Certain conditions such as a build up of atherosclerotic plaque on the arterial wall can result in ischaemic damage and stroke-like symptoms. A 3D computer model has been developed based on the results of MRA scans of 3 patients cerebral-vasculature including a numerical algorithm to simulate the body's autoregulation mechanism. The intention of the present study was to investigate different anatomical states, including different vessels missing from the circle whilst occluding the main afferent arteries such as the Internal Carotid and Vertebral Arteries.

Results show that variations in inflow characteristics causes peripheral resistances to change in order to maintain sufficient blood flow to the brain tissue. This indicates that 'pressure' is the more physiologically correct boundary condition as opposed to the specification of an inlet 'velocity profile'.

VS09 MEDICAL MANAGEMENT OF EXTRACRANIAL VASCULAR DISEASE

J. N. FINK

Christchurch School of Medicine, Canterbury, New Zealand

Medical treatment is indicated for all patients with symptomatic or high-risk asymptomatic extracranial vascular disease, whether or not a vascular intervention is planned or has been performed. Recent evidence mandates an aggressive approach to management of traditional vascular risk factors, frequently involving use of several medications concurrently such as angiotensin converting enzyme inhibitors, diuretics and statins. These treatments should be considered for all patients, including those with blood-pressure and/or cholesterol measurements within what might be considered the "normal" range. However, treatment decisions should be tailored to individual patient circumstances. Vascular anatomical considerations must be taken into account, particularly the presence of severe bilateral internal carotid artery stenoses or occlusion. Combination antiplatelet therapy with aspirin plus dipyridamole is generally indicated for secondary prevention of cerebrovascular disease, whilst clopidogrel is used following stent placement. Advances in medical management of extracranial vascular disease which reduce the overall risk of cerebrovascular events have been introduced subsequent to some of the pivotal carotid surgery trials. Possible implications for surgical treatment decision-making will be addressed.

VS10 CAROTID ENDARTERECTOMY WITH EARLY ICA CONTROL: AN MRI STUDY

B. M. BOURKE, M. LANNAN AND S. KHOURY

Central Coast Area Health, New South Wales, Australia

Introduction Diffusion-weighted magnetic resonance imaging (DWI) is a powerful tool to detect early cerebral ischaemia and can detect new post-operative but clinically silent lesions before CT and conventional MR. Studies to date have used 1.5 T magnets and concerned CEA patients under general anaesthesia. This study concerns CEA patients under local anaesthesia using a 3T scanner.

Patients and Methods Between 23/6/06 and 11/1/07, 40 consecutive CEAs were performed. All procedures were performed in awake patients with selective early control of the ICA beyond the plaque. All patients received Dextran 40 and all received a vein patch. DWI was performed 1–2 days post-operatively and within 1 week post-operatively.

Results Three required a shunt. There were no deaths, no strokes, no TIAs and no cranial nerve dysfunction. Thirty-five of forty were discharged after 1 post-operative night. Four remained longer for non-related reasons and 1 for swallowing difficulty resolving after 36 hours. In 8 patients MR was contra-indicated or not possible, and a further 2 refused the post-operative study because of claustrophobia. One patient was found to have a cerebral tumour. In 5 patients new silent lesions were detected. Lesions were singular in 4 and double in 1 patient. Four of the 6 lesions were ipsilateral and 2 contralateral.

Conclusions This is the first reported such study using 3 T and CEA patients under local anaesthesia. The significance of the findings will be discussed. Because it is rapid and non-invasive, DWI should be the new gold standard of quality control for carotid interventions, particularly in trials comparing modes of management.

VS11 OPERATIVE APPROACH FOR THORACIC OUTLET SYNDROME

J. H. ROBERTS-THOMSON AND P. M. LAMONT

Mersey Hospital, Tasmania, Australia

Purpose Thoracic Outlet Syndrome has been described for nearly 200 years. Its development is interesting and will be presented. A limited series from our institution is presented with emphasis on vascular complications of this problem.

Methodology A Pub. Med engine search over the last 30 years using the titles thoracic outlet syndrome and first rib resection was done. 106 articles were studied. Our 6 cases of vascular ramifications of thoracic outlet syndrome are presented.

Results Only 1 randomised trial comparing different approaches has been reported so management has been controversial. Incidence of subclavian and axillary vein thrombosis has increased. We have found the axillary approach for this condition of Paget Schroetter syndrome difficult and access made easier by using an infraclavicular or combined with a supra clavicular approach.

Conclusions As this condition is uncommon most centres will have only limited experience. A combined endovascular and surgical decompression yields best results.

VS12P USE OF THE SUPERFICIAL FEMORAL POPLITEAL VEIN AS A CONDUIT IN SELECTED VASCULAR SCENARIOS

C. GILLESPIE AND B. JAUFFRET

Gisborne Hospital, Gisborne, New Zealand

In 1986 Schulman et al first reported the use of the superficial femoral popliteal vein (SFPV) as a conduit for femoral-popliteal arterial bypass. Since then it has been well reported as an alternative conduit in various scenarios, predominantly in the reconstruction of a neo-aortoiliac system for infected prosthetic aortic grafts.

It is a large calibre vessel, 8–12 mm in diameter, with good handling properties, a high graft patency rate, and a thick wall rendering it resistant to infection. Aneurysmal change occurs rarely after long-term follow-up. Anatomic studies show that on average lengths of 40–50 cm in men and 30–40 cm in women can be harvested on each side with minimal symptomatic venous consequences. Less than one third of patients after SFPV harvest develop oedema despite significant venous outflow obstruction on plethysmography. These characteristics make it an excellent conduit for both venous and arterial bypass in selected vascular cases.

We present a series of 3 patients in whom the SFPV was used as a conduit. The first was an iliofemoral bypass for an isolated traumatic iliac artery dissection in a 35 year old man. The second was a complex 4th redo for a failed femoral-popliteal bypass operation. The third was a portal vein reconstruction during a pancreaticoduodenectomy for a pancreatic tumour encasing the portal and superior mesenteric veins. In all 3 cases the grafts have remained patent during follow-up, with only one patient developing symptomatic oedema.

This case series illustrates the wide spectrum of applications for this safe and effective conduit. Used until now mostly as a rescue conduit after the failure of synthetic grafts, should SFPV be considered as the first choice for younger patients?

VS13P THE IMPACT OF THE ESCHAR TRIAL ON CLINICAL PRACTICE

A. M. WARWICK, C. THOMAS AND P. D. DODD

Sheffield Vascular Institute, Sheffield, United Kingdom

The ESCHAR trial, published June 2004, showed that patients with venous ulceration who had superficial or mixed superficial and segmental deep venous reflux had a decreased likelihood of recurrent ulceration if they were treated with superficial venous surgery. This prompted us, firstly, to review our service to see if we were following this level one evidence; secondly to estimate how many of our patients could benefit from adopting this practice.

Method Retrospective audit of all patients attending a nurse-led ulcer clinic for a 6 month period between June and December 2004.

Results 163 patients attended during the audit period. Data were retrieved for 146. Of these only 54 (37%) had purely venous ulceration on clinical assessment, of whom 31 had a venous duplex scan. 21 patients had superficial only, or mixed superficial and deep reflux; 8 had no reflux; 2 had deep reflux only. Of these 21 patients who could potentially be suitable for superficial venous surgery, 1 had deep venous occlusion, 4 patients refused surgery, 4 were considered unsuitable for surgery on medical grounds, 7 were not assessed for surgery, only 3 patients were awaiting superficial venous surgery.

Conclusion Despite the publication of evidence supporting superficial venous surgery in selected patients only 3/146 (2%) patients attending our clinic were listed for venous surgery. However 7/21 (33%) were not assessed for treatment. This study demonstrates the inertia in adopting "best evidence" into clinical practice. Even so the numbers of leg-ulcer patients likely to benefit from surgery appears surprisingly small.

VS14P EXTERNAL STENTING FOR VARICOSE VEIN – WHY DESTROY WHAT YOU CAN REPAIR?

M. W. ASHRAFI AND P. M. LAMONT

NWRH Mersey Campus, Tasmania, Australia

Purpose To assess the outcome of EVS on Varicose Veins in a rural community over a period of four years: 53 patients had external stenting.

To verify 'Rod Lane's ten year results on 'venocuff'.

Methodology Patients with varicose veins with SFR (sapheno femoral reflux) have been treated with Venocuff or Gortacuff in a Tasmanian hospital over the last 4 years. 53 patients with 61 legs out of 191 patients have been taken into consideration. Both groups have been selected on the basis of preoperative U/S. Some of them needed additional multiple stab treatment for leg varicosities and ligation of incompetent perforators. 6 out of 47 patients have been male.

An area of 3–4 cm of terminal LSV exposed, tributaries ligated gortex tube sutured as a cuff around the vein or venocuff fitted. All patients are scanned with ultrasound to identify the incompetent cusps.

Results

- External stenting of varicose veins has encouraging outcomes in selected cases.
- Preoperative assessment is easy with US, but there is a learning curve.
- It can be done in smaller hospitals and it has minimum complication.
- No explantation.
- No significant clinical recurrence.
- Improvement in all cases.

Conclusion

- External Stenting is an effective treatment for primary Varicose Veins.
- It conserves LSV for future use.
- It is a lone voice against a cacophony of obliteration using intravenous laser and sclerotherapy.

VS15P THERAPEUTIC EMBOLISATION IN THE TREATMENT OF RECURRENT HAEMARTHROSIS FOLLOWING KNEE ARTHROPLASTY

M. T. LAW AND D. N. McCLURE

Geelong Hospital, Victoria, Australia

Recurrent spontaneous haemarthrosis after knee arthroplasty occurs in less than 1% of cases, commonly thought to be result of impingement of hypertrophic vascular synovium or fat pads, exacerbated by anticoagulation or antiplatelet agents. Traditional managements include conservative management with rest and ice initially, followed by open or arthroscopic washout and synovectomy if bleeding recurs or fail to settle. We present 3 cases of recurrent haemarthrosis following knee arthroplasties which were successfully treated with angiography and coil embolisation. Injuries to one of the genicular arteries were identified as the cause in all three cases with one manifesting in formation of a traumatic arteriovenous malformation. All cases were associated with resolution of symptoms with no recurrence (follow-up period 6 months – 5 years, median of 2 years). We discuss the possibility that direct injury to genicular arteries and the development of subsequent complications including arteriovenous malformation and false aneurysm as more likely aetiology of recurrent bleeding.

VS16P OUTCOMES OF ARTERIOVENOUS FISTULA FOR VASCULAR ACCESS

N. BANERJEE, A. HILL AND R. BOURCHIER

Auckland City Hospital, Auckland, New Zealand

Introduction Vascular access for chronic haemodialysis persists as a surgical challenge. The development of the radiocephalic arterio venous fistula in 1966 by Brescia was a milestone in vascular access surgery. There has been a move away from the use of prosthetic due to the associated complications.

A decision was made at this institution to use autologous vein in all cases recognising the consequence of using marginal veins.

Aim To determine the Outcomes of all Radiocephalic, Brachiocephalic and Transposition arterio venous fistulae.

Method A retrospective study by review of the case notes was carried out in March 2006.

All renal access procedures performed between 6/03 and 6/05 were reviewed.

In the new native fistulas formed during this time, the following end points were sought: Primary, secondary and functional patency at 24 hrs, 6 weeks, 6 months and 1 year.

Results Life table analysis of the patency outcomes showed that Percentage primary patency rates for Radiocephalic and Brachiocephalic fistulae were 71% and 74% at 1 year respectively. Subgroup analysis of females, diabetics and those with BMI > 30 showed diabetics composed >40% of patients and patients with BMI >30 was 29%. Of these two subgroups primary patency rates were comparable to the whole group.

Conclusion The population studied was different to those in other parts of the world. Favourable

Primary patency rates were obtained for this challenging group of patients.

VS17P 'PINCH SKIN GRAFTING – THE FORGOTTEN AID IN WOUND HEALING' – TEN YEAR EXPERIENCE IN A RURAL HOSPITAL

P. M. LAMONT AND M. W. ASHRAFI

NWRH, Tasmania, Australia

Purpose To assess the efficacy of 'Pinch Grafting' on chronic ulcers, many which are vascular in origin (Arterial or Venous). Retrospectively and prospectively our experience will be presented.

Methodology Over the last ten years chronic leg ulcers (15 cases a year) have been grafted in North West Regional Hospital, Mersey Campus, Tasmania. Age of these patients extends from 56 to 91 with a median age of 79. Most of these cases are grafted as outpatients and some of them done in wards, while the patient is admitted for other comorbid problems.

Pinch grafts are done invariably with local anaesthetic. Pricking the anesthetized area (donor area) with a 22 needle a disc of 2–3 mm skin is tented and sliced by a no 20 blade, keeping tangential to skin surface. Discs are placed on the floor of prepared ulcers 4–5 mm apart. Many cases remain ambulant.

Results 95% of the grafts take on 1st attempt and another 3% on the second attempt. No patient had any limitation for their comorbid problems. It was very easy to do: most junior staff of the team can do the procedure successfully.

Conclusion Pinch skin grafts have been used for many of these patients with encouraging results. Pinch Grafting is a cost effective tool for healing chronic ulcers.

1. Factors influencing wound healing are multiple.
2. No particular dressing material is outstanding.
3. Pinch graft for chronic ulcers is a very practical and effective treatment.
4. Patient acceptance is high.
5. Very cost effective.
6. Can be given to GPs to use it as a primary care tool.

VS18P IS ENDOVASCULAR REPAIR OF RUPTURED ABDOMINAL AORTIC ANEURYSMS CHANGING THE SELECTION CRITERIA FOR INTERVENTION? – A 5 YEAR RETROSPECTIVE AUDIT IN A SMALL TEACHING HOSPITAL

V. K. ARVAPALLI, S. WALKER AND T. BEASLEY

Royal Hobart Hospital, Tasmania, Australia

Purpose Endovascular repair (EVR) of ruptured abdominal aortic aneurysms (RAAA) holds great promise in the treatment of this usually fatal condition. We aim to demonstrate how the impact of EVR of RAAA has started to alter our practise.

Methodology A retrospective review of all patients presenting with RAA to a small tertiary referral teaching hospital.

Results Between January 2001 and September 2006, 76 patients presented with RAAA. One refused surgery and 26 were treated palliatively, all but one died. Forty four underwent conventional open repair (OR) of RAAA (32 men, mean age 68.3 years) and 5 had EVR (4 men, mean age 78.5 years). All patients who underwent EVR would previously have been declined OR due to medical co-morbidities. The mean annual 30 day mortality for OR was 57% but this has fallen from 70% in 2002 to 25% in 2006. The 30 day mortality for EVR of RAAA was 0%. Mean hospital stay following OR was 20.4 days and following EVR was 17.5 days but mean ICU length of stay was unchanged at 10 days.

Conclusion Despite recent improvements in survival following OR of RAAA, our initial experience of EVR suggests that we can still do better. Should we be offering this new technology to patients we would previously have declined OR?

VS19P PATTERN OF PERIPHERAL ARTERIAL DISEASE IN CRITICAL LOWER LIMB ISCHEMIA

C. HAN, M. WESTCOTT AND W. MORRISON

St. Vincent's Hospital Melbourne, Victoria, Australia

Purpose This study aims to investigate the pattern of peripheral arterial disease in critical lower limb ischemia.

Methodology 76 patients, without previous lower limb vascular surgery, presented to St. Vincent's Hospital Melbourne with critical lower limb ischemia, manifesting either as rest pain, ischemic ulcers or gangrene over a 1 year period. Digital subtraction angiograms of lower limbs arteries were analyzed to understand the pattern of arterial atherosclerotic disease.

Results The superficial femoral artery was occluded in 37 of 76 patients, in this group of patients the popliteal artery was reformed from collaterals in all but 5 patients. 42 patients had a single artery run off below the knee. The peroneal artery was only remaining patent artery in 61%, the anterior tibial in 29% and the posterior tibial in 10% of patients.

Conclusion The peroneal artery is frequently the last remaining patent artery below the knee in patients with critical limb ischemia. This may have implications for surgeons in artery selection for lower limb vascular bypass surgery.

VS20P
TRENDS IN EMBOLECTOMY OF THE EXTREMITIES:
A POPULATION-BASED STUDY

P. NORMAN, S. PONOSH, R. BROADHURST AND J. SEMMENS

Fremantle Hospital, Western Australia, Australia

Objective To assess community-wide temporal trends in the rates of embolectomy of the extremities over the period 1992–2003.

Design Population-based study.

Methods The Western Australian Linked Data System was used to identify cases of extremity embolectomy with a combination of diagnosis (upper or lower limb embolus) and procedure (embolectomy and revascularization) codes. Trends in age-specific and age-standardised rates were assessed over the period 1992–2003. Data regarding warfarin prescriptions was acquired from a separate Commonwealth Government database for the period 2000–2005.

Results 1005 patients aged 30 years were admitted for an embolectomy of the extremity during the study period. The age specific rate of embolectomy increased with age from 0.78 per 100,000 in the 30–49 year old group to 46.1 per 100 000 for those aged over 80 years and over. There was a significant downward trend between 1992 and 2003 (Cuzik's trend test $p = 0.015$). This pattern was seen for all age groups. Prescriptions for warfarin increased by 50.4% over the period 2000–5.

Conclusions The rates of embolectomy of the extremity appear to be falling. Although the cause for this trend is not known, one possible explanation is increasing prescription of warfarin.

VS21P
'ANGIOPLASTY AND AMPUTATION': FIFTY PERCENT
REDUCTION OF LOWER LIMB AMPUTATION FOLLOWING
INTRODUCTION OF ANGIOPLASTY IN A RURAL HOSPITAL
OVER A TEN YEAR PERIOD

M. W. ASHRAFI, P. M. LAMONT AND R. DE LOS SANTOS

NWRH, Tasmania, Australia

Purpose To assess the benefit of primary angioplasty in acute and chronic PVD in a rural hospital in regards to limb Salvage, types of bypass & diabetes.

Methodology Over 521 lower limb angioplasties have been done at NWRH Mersey campus' a small hospital catering for a population of 100 000 people, from January 1996 to Jan 2006. Personal audit, hospital records and theatre coding used to generate the data. Candidates for angioplasty, bypass surgery and amputation selected & consented first for angioplasty on the basis of their symptoms & ABI. First 5 years of this study showed 180 angioplasties and 37 major amputations, 13 Aorto-ileo-femoral and 107 Femoral bypasses but second 5 years shows 226 angioplasties and 21 amputations, 3 Aorto-ileo-femoral and 49 Femoral bypasses respectively.

We do angioplasty for all the patients with significant lower limb ischaemia and symptomatic diabetic foot. Balloon angioplasty is our preferred option. People with poor renal reserve had angioplasty under ultrasound. Angioplasty definitely reduces grief and depression of limb loss in patients.

Results

- Angioplasty has significantly reduced the bypass rate by 60%.
- There is proof of tangible benefit in regards to ulcer healing of diabetic feet.
- We agree with other big series on this matter to say 'Angioplasty reduces the rate of major amputation' at least by 41%.

Conclusions

- Angioplasty has a clear role in the management of Acute and Chronic lower limb peripheral vascular disease and may ultimately see bypass surgery as a relic of the past.