CANADIAN SOCIETY FOR VASCULAR SURGERY

26TH ANNUAL MEETING

Quebec City, PQ

EDUCATIONAL OBJECTIVES OF THE CSVS ANNUAL MEETING OCTOBER 22-23, 2004

1 A series of scientific sessions will allow the coverage of topics germane to the practice of vascular surgery, from basic scientific research to clinical practice

2 An invited expert as guest speaker will present innovative ideas and hypotheses regarding endovascular management of abdominal aortic aneurysms, and provide historic perspective on developments in the field of vascular surgery

3 A panel discussion, emphasizing audience participation, on specific case presentations of challenging and unusual cases

4 The program will provide 12 hours of scientific or clinical presentations, stressing the opportunity for audience members to discuss and contribute opinions and evaluations. Presenters are encouraged to submit a manuscript to the Recorder to be considered for publication in the Annals of Vascular Surgery. This program is fully accredited for Merit of Certification by the Royal College of Physicians & Surgeons of Canada.

PROGRAM SUMMARY

Friday, October 22, 2004

0800 – 0815 Welcome and Opening Remarks – President, Dr. Brian Ulmer
Program Chair, Dr. Don McCarville
Secretary, Dr. Daryl Kucey

0815 – 1015 Paper Session I – Chair Dr. Don McCarville

1015 – 1045 Coffee Break and Exhibits

1045 – 1130 CSVS Lecture: Invited Speaker, Dr. James May – The Mystery of Changes in Morphology of AAA Following Endovascular Repair

1130 – 1400 Lunch and Annual Business Meeting

1400 – 1530 Paper Session II – Chair Dr. Claudio Cina

1530 – 1600 Coffee Break and Exhibits

1600 – 1700 Paper Session III - Chair Dr. Jerry Chen

Saturday, October 23, 2004

0800 – 0830 Research Forum – Chair Dr. Tom Lindsay

0830 – 0915 Paper Session IV – Chair Dr. Tom Lindsay

0915 – 1000 CSVS Lecture: Invited Speaker Dr. James May – Progress in Endovascular Therapy: The legacy of the Early Interventionalists And Future of the Endovascular Specialty

1000 – 1030 Coffee Break and Exhibits

1030 – 1100 Paper Session V - Chair Dr. Randy Guzman

1100 – 1145 Introduction to Presidential Address: Dr. Andrew Hill
Presidential Address: Dr. Brian Ulmer

1145 – 1300 Lunch

1300 – 1400 Paper Session VI – Chair Dr. Andrew Sherwood

1400 – 1430 Coffee Break and Exhibits

1430 – 1600 Panel Discussion: Case Presentations of Challenging and Unusual Cases
Panel: Dr. James May
Dr. Anthony Salvian
Dr. Brian Ulmer

CSVS 26th Annual Meeting Program

Friday October 22nd, 2004

0800 – 0815 Welcome and Opening Remarks: President, Dr. Brian Ulmer
Program Chair, Dr. Don McCarville
Secretary, Dr. Daryl S. Kucey

Paper Session I **Chair – Dr. Don McCarville**

0815 – 0825 **EXAMINATION OF THE TREND TOWARD GEOGRAPHIC CENTRALIZATION OF ANEURYSM SURGERY IN THE ENDOVASCULAR ERA** Thomas L. Forbes MD, Kirk Lawlor MD, Guy DeRose MD & Kenneth A. Harris, Division of Vascular Surgery, London Health Sciences Centre & The University of Western Ontario, London, ON

0825 – 0830 Discussion

0830 – 0840 **ENDOVASCULAR AORTIC RECONSTRUCTION: IS A NONSURGICA ENVIRONMENT SAFE?** L. Villalba MD, J. Wong MD FRCSC, G. Samis MD FRCSC, P.F. Petrasek MD FRCSC, R.D. Moore MD FRCSC. Department of Vascular Surgery, Peter Lougheed Centre, University of Calgary, Canada

0840 – 0845 Discussion

0845 – 0855 **FEASIBILITY OF ENDOVASCULAR REPAIR OF RUPTURED AAA: EARLY RESULTS IN A PROSPECTIVE SERIES** L.W. Tse, K.S. MacKenzie, D.I. Obrand, C.Z. Abraham, M.M. Corriveau, O.K. Steinmetz Division of Vascular Surgery, McGill University

0855 – 0900 Discussion

0900 – 0910 **MIDTERM FOLLOW-UP OF INFLAMMATORY AORTIC ANEURYSMS FOLLOWING ENDOVASCULAR REPAIR** Rumi Faizer, MD, Guy DeRose, MD, |Thomas Forbes, MD, Kenneth Harris, MD, Steven Millward, MD, Stuart Kribs, MD, Kirk Lawlor, MD

0910 – 0915 Discussion

0915 – 0925 **FREQUENCY AND OUTCOME OF REINTERVENTIONS AFTER ENDOVASCULAR REPAIR FOR AORTIC ANEURYSM: A PROSPECTIVE COHORT STUDY** E.L.G. Verhoeven, I.F.J. Tielliu, T.R. Prins, C.J. Zeebregts, M.G. van Andringa de Kempenaer, C.S. Cina, and J.J.A.M. van den Dungen. Departments of Surgery and Radiology, University of Groningen, The Netherlands, Department of Surgery, McMaster University, Hamilton, Canada

0925 – 0930 Discussion

0930 – 0940 **INCIDENCE, MECHANISMS, AND IMPLICATIONS OF INTERNAL ILIAC ARTERY OCCLUSION FOR ENDOVASCULAR ANEURYSM REPAIR.** R. P.N. Willoughby, J.A. Fenton, S.R. Pudupakkam, R.A. Greco, E.W.D. Roberts. Sudbury Regional Hospital, Sudbury, Ontario, Canada

0940 – 0945 Discussion

0945– 0955 **AORTIC NECK DILATION AFTER EVAR: SHOULD OVER-SIZING BE BLAMED?** Sergio M. Sampaio, M.D.; Jean M. Panneton, M.D.; Geza Mozes, M.D.; James C. Andrews, M.D.; Thomas C. Bower, M.D.; Manju Kalra, MBBS; AudreA. Noel, M.D.; Timothy M. Sullivan, M.D.; Peter Gloviczki, M.D., Division of Vascular Surgery, Mayo Clinic, Rochester, MN

0955 – 1000 Discussion

1000 – 1030 **Coffee Break and Exhibits**

1030 – 1115 **CSVS LECTURE: " THE MYSTERY OF CHANGES IN MORPHOLOGY OF AAA FOLLOWING ENDOVASCULAR REPAIR.**
Dr. James May

1115 – 1330 **Lunch and CSVS Annual Business Meeting (Members Only)**

Paper Session II Chair – Dr. Claudio Cina

1330 – 1340 **INITIAL CANADIAN EXPERIENCE WITH A FENESTRATED ENDOGRAFT FOR THE MANAGEMENT OF PERI-RENAL AORTIC ANEURYSM.** F. Brandschwei MD FRCSC, R.D. Moore MD FRCSC et al. Departments of Interventional Radiology and Vascular Surgery, Peter Lougheed Center, University of Calgary, Canada

1340 – 1345 Discussion

1345 – 1355 **INITIAL EXPERIENCE WITH ENDOVASCULAR REPAIR OF THORACOABDOMINAL ANEURYSMS.** Yaron Sternbach, Thomas Lindsay, Barry Rubin, John Kachura and Ken Sniderman. Toronto General Hospital and University of Toronto

1355 – 1400 Discussion

1400 – 1410 **ENDOVASCULAR STENT GRAFT REPAIR OF TRAUMATIC RUPTURE OF THE THORACIC AORTA: THE NEW GOLD STANDARD?** Jason Faulds, Andrew B. Hill M.D., Division of Vascular Surgery, The University of Ottawa and Ottawa Hospital

1410 – 1415 Discussion

1415 – 1425 **TRAUMATIC RUPTURE OF THE THORACIC AORTA: A PLEA FOR DIFINITIVE AND SAFE OPERATION.** Alain g. Verdant, M.D., FRCS(C) Cardiovascular and Thoracic Surgeon, Hopital du Sacre-Coeur, Montreal Qc, Canada

1425 – 1430 Discussion

1430 – 1440 **SINGLE INSTITUTION EXPERIENCE WITH AORTIC ENDOGRAFT EXPLANTATION.** J.F. Blair, L. Bruneau, N. Beaudoin, S. Elkouri, G Soulez, E. Thrrasse

1440 – 1445 Discussion

1445- 1515 **Coffee Break and Exhibits**

Paper Session III Chair – Dr. Jerry Chen

1515 – 1525 **DOES THE COMBINED RISK OF STROKE, MYOCARDIAL INFARCTION, DEATH FOLLOWING CAROTID ENDARTERECTOMY JUSTIFY THE PURSUIT OF CAROTID ARTERY ANGIOPLASTY: A REGIONAL STUDY.** Prasad Jetty, M.D.; Charles Agbi, M.D.; Andrew B. Hill, M.D., Divisions of Vascular Surgery and Neurosurgery, The Ottawa Hospital and the University of Ottawa, Ottawa, Canada

1525 – 1530 Discussion

1530 – 1540 **REDO CAROTID OPERATION: A 14 YEAR EXPERIENCE.** Benoit Cartier, M.D, Center hospitalier regional du Suroit, Valleyfield, Qc

1540 – 1545 Discussion

1545 – 1555 **ENDOVASCULAR TREATMENT OF POPLITEAL ARTERY ANEURYSMS: A PROSPECTIVE COHORT STUDY.** I.F. J. Tielliu, E.L. G. Verhoeven, C.S. Cina, T.R. Prins, C.J. Zeebregts, M.G. van Andringa de Kempenaer, and J.J.A. M. van den Dungen. Department s of Surgery and Radiology, University Hospital Groningen, The Netherlands, Department of Surgery, McMaster University, Hamilton, Canada

1555 – 1600 Discussion

1600 – 1610 **DISTAL BYPASS TO THE FOOT: 10 YEARS EXPERIENCE IN PRIVATE PRACTICE.** Michel Legault, M.D., FRCSC, FACS; Nicolas Aubree, M.D., FRCSC, CSPQ, Division of Vascular Surgery, CHRDL, Joliette, Quebec

1610 – 1615 Discussion

SATURDAY OCTOBER 23, 2004

0800 – 0845 **Research Forum: Chair – Dr. Thomas Lindsay**

Paper Session IV Chair – Dr. Thomas Lindsay

0845 – 0855 **THE ROLE OF MAST CELLS IN CARDIAC CONTRACTILE DYSFUNCTION FOLLOWING HEMORRHAGIC SHOCK AND RESUSCITATION.** D.J. Santone, R. Shahani, A.D. Romaschin, B.B. Rubin, and T.F. Lindsay, Division of Vascular Surgery, Toronto General Hospital and the Department of Laboratory Medicine and Pathobiology, University of Toronto

0855 – 0900 Discussion

0900 – 0910 **ORAL COMPLEMENT ANTAGONISM REDUCES THE PULMONARY AND INTERSTITIAL INJURY IN A MODEL OF RUPTURED ABDOMINAL AORTIC ANEURYSM.** Steve Gryn, Denis Harkin, Barry Rubin, and Thomas Lindsay, Division of Vascular Surgery Toronto General Hospital and University of Toronto

0910 – 915 Discussion

0915 – 1000 **CSVS LECTURE: " PROGRESS IN ENDOVASCULAR THERAPY: THE LEGACY OF THE EARLY INTERVENTIONALISTS AND FUTURE OF THE ENDOVASCULAR SPECIALTY" Dr. James May**

1000 – 1030 **Coffee break and Exhibits**

Paper Session V Chair - Dr. Daryl Kucey

1030 – 1040 **ENDOVENOUS LASER ALLOWS OFFICE-BASED MANAGEMENT OF SAPHENOUS INCOMPETENCE.** David Szalay, M.D., Daryl Kucey, M.D., Alan Lossing, M.D. Department of Vascular Surgery, University of Toronto

1040 – 1045 Discussion

1045 – 1055 **PRESERVATION OF SEXUAL FUNCTION IN MALES FOLLOWING OPEN REPAIR OF ABDOMINAL AORTIC ANEURYSMS.** A. G. Lossing and M.A. Burnett, St. Michael's Hospital, University of Toronto, Toronto, Ontario

1055 – 1100 Discussion

1100 – 1110 **POSTOPERATIVE DELERIUM FOLLOWING OPEN REPAIR OF ABDOMINAL AORTIC ANEURYSM (AAA).** J. Tanner, R. Guzman, B. Campbell, A. Benoit, Departments of Anesthesia, Psychiatry and Surgery, St. Boniface General Hospital, Winnipeg, Manitoba

1110 – 1115 Discussion

1115 – 1125 **VENOVENOSTOMY FOR OUTFLOW OBSTRUCTION IN PATIENTS WITH UPPER EXTREMITY HEMODIALYSIS AV FISTULA.** Dhafer m. Kamal, Jerry C. Chen, Vancouver General Hospital, University of British Columbia, Vancouver, B.C.

1125 – 1130 Discussion

1130 – 1215 **Presidential Address: Dr. Brian Ulmer**

1215 – 1330 **Lunch**

1330 – 1530 **Panel Discussion**
'Difficulties Mastered are Opportunities Won' or 'Everybody has his day and some days last longer than others' *
A selection of cases from the members of the CSVS posing particular difficulty or requiring shrewd judgement
Panel Members: Dr. Brian Ulmer, Dr. Anthony Salvian, Dr. James May
Presenter: Dr. Don McCarville

EXAMINATION OF THE TREND TOWARDS GEOGRAPHIC CENTRALIZATON OF ANEURYSM SURGERY DURING THE ENDOVASCULAR ERA

Thomas L. Forbes MD, D. Kirk Lawlor MD, Guy DeRose MD & Kenneth A. Harris MD
Division of Vascular Surgery, London Health Sciences Centre & The University of Western Ontario, London, ON

Background: In Canada endovascular (EV) aneurysm repair has not been widely disseminated but has remained limited to large volume vascular surgery units. Since the development of the endovascular program at our hospital we have experienced a growth in our aneurysm practice and the area of referral. The purpose of this study was to compare the geographic referral area of our aneurysm practice between 1997 (prior to the introduction of EV) and 2003 (EV and open surgery). **Methods:** Our prospective database was reviewed to identify patients who underwent elective open aneurysm repair in 1997 and 2003 and those who underwent endovascular repair in 2003. Each patient's county of residence was identified allowing for grouping of patients into one of four geographic regions (I-IV) increasingly more distant from our hospital. Proportions were compared with the chi-square test. **Results:** In 1997, 105 patients underwent open abdominal aortic aneurysm repair with the majority of patients originating from the two regions in closest proximity to our hospital (I–34%, II–46%, III–18%, IV-2%). This contrasts with the 2003 EV group (n=63) which had a higher proportion of patients referred from greater distances (I-13%, II-27%, III-27%, IV-33%), (p<0.001). The 2003 open group (n=165) did not differ statistically with respect to region of origin (I-18%, II-41%, III-21%, IV-19%) when compared to their 2003 EV counterparts (p=0.075) but did have a higher proportion of patients from the more distant regions when compared to the 1997 open group (p<0.001). **Conclusions:** During the last five years we have experienced a doubling of our elective aneurysm case volumes as well as a trend for patients to be referred from greater distances for both endovascular and open aneurysm repair. This study's data suggests a trend in Canada towards increased centralization of aneurysm care in centres providing both endovascular and open surgical alternatives.

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ENDOVASCULAR AORTIC RECONSTRUCTION: IS A NON-SURGICAL ENVIRONMENT SAFE?

L. Villalba MD, J Wong MD FRCSC, G Samis MD FRCSC, P.F. Petrasek MD FRCSC, R.D. Moore MD FRCSC. ***Department of Vascular Surgery, Peter Lougheed Center, University of Calgary, Canada.***

PURPOSE: It has been well documented that interventional radiologists, cardiologists and vascular surgeons are capable of performing endovascular procedures successfully. As this technology continues to evolve, and case complexity increases, sub-optimal anatomy may be encountered, or intra-op technical problems can occur. Endovascular management is not always suitable or feasible. The incidence of surgical adjunctive techniques has been analyzed in order to determine safety and rationale of the surgical suite vs. a non- surgical suite environment for the primary placement of endovascular grafts.

METHODS: From May 1999 to March 2004, 285 primary aortic endovascular procedures were performed at our institution and entered prospectively in a vascular database: (75) thoracic, and(210) abdominal. Adjunctive techniques to enable stent deployment or solve intra-op difficulties are described.

RESULTS: 19(25%) open adjunctive procedures were recorded for the thoracic population and 101(30%) for the abdominal cohort. For access or stent manipulation: 8 patients required trans-abdominal conduits, 6 had iliac conduits, and 2 patients required a flank incision to guide stent access. For arterial dissection or rupture at the time of closure: 14 patch angioplasties, 10 endarterectomies/repair femoral dissection, 3 suture repairs and 2 ilio-femoral bypasses were performed. For limb ischemia: 6 embolectomies, 4 thrombectomies, 3 profundoplasties , and 2 femoral-popliteal bypasses were documented. Regarding stent deployment site: 5 carotid –subclavian bypasses were performed prior to thoracic stenting in cases of short or poor quality neck to allow for adequate zone 2 deployment. 6 patients required complex aortic arch reconstruction including aorto-inominate bypass n=1, axillary-axillary bypass n=2, aorto-carotid bypass n=1, replacement of aortic root with elephant trunk n=1, and carotid-carotid bypass n=1 to allow for zone 1 or zone 0 deployment. One internal-external iliac transposition was used to maintain pelvic flow in a case of bilateral internal iliac occlusion. 3 patients had surgical iliac ligation. 37 patients with planned AUI devices, and 3 patients who had conversion from a bifurcated to an AUI device required fem-fem crossover. There were 3 cases of untreatable type 1 endoleak that required aortic cerclage, and 2 patients were converted to open repair (0.7%). Persistant endoleak rate at time of reporting is 3% (type 2), late rupture rate 0.7% and accrued endovascular re-intervention rate for endoleak is 15%.

CONCLUSION: Endovascular treatment of aortic conditions is expanding . However, sub-optimal anatomy or intra-op critical events can jeopardize endovascular repair. Successful endografting requires not only endovascular expertise but also a well-developed surgical environment in order to increase applicability and decrease risk.

Feasibility of Endovascular Repair of Ruptured AAA: Early Results in a Prospective Series

Tse LW, MacKenzie KS, Obrand DI, Abraham CZ, Corriveau MM, Steinmetz OK.
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Purpose: To determine the feasibility of endovascular repair (EVAR) of ruptured abdominal aortic aneurysms (RAAA) and compare their outcomes to open repair (OR) in a prospective fashion at a single institution.

Methods: In July 2003 we implemented a policy in which all patients presenting with a RAAA were considered for treatment with EVAR. Patients too unstable to undergo CT scan were assessed with intraoperative angiography for suitability of aortic anatomy for EVAR. Only patients in which aneurysm rupture was confirmed by CT scan or laparotomy were included in the study. All procedures were initiated in the operating room under local anesthesia. A Talent aortouniliac endograft was deployed in all patients with suitable anatomy. Conventional OR was performed in the remaining patients. Details of each patient's presentation, medical history, aortic anatomy, anesthesia, operative procedure, and postoperative course were recorded. Follow-up at 3 months included CT scan, and assessment of clinical status, AAA exclusion, adverse events, and death.

Results: During the 9-month period, 13 patients presented with a RAAA. Seven patients underwent EVAR, of which 4 were performed entirely under local anesthetic. Six patients had OR because 2 had unsuitable proximal neck anatomy for EVAR, 1 had unsuitable iliac anatomy, in 2 no EVAR capable surgeon was available, and 1 patient was too unstable for transfer to an operating room equipped for EVAR. Mean intraoperative blood transfusion was 607cc for EVAR and 1088cc for OR ($p=0.26$). There was no significant difference in the mean operative time, ICU stay, or overall length of stay. The endoleak rate for EVAR was 43%(1 type I, 2 type II). Reintervention rate was 29% for EVAR and 17% for OR. Major adverse event rates were 57% for EVAR compared with 85% for OR ($p=0.56$). The overall mortality rates for EVAR and OR were 29% and 50%, respectively ($p=0.59$).

Conclusions: At our institution, endovascular repair was feasible in at least 50% of patients presenting with ruptured AAA. Preliminary review of outcomes suggests that despite endoleaks and a greater need for reintervention in EVAR, the major adverse event rate and mortality rate are lower for EVAR. Further study will be required to determine if these trends are statistically significant, and there is a need to evaluate long-term outcomes.

Midterm Follow-up of Inflammatory Abdominal Aortic Aneurysms Following Endovascular Repair

Rumi Faizer, MD, Guy DeRose, MD, Thomas Forbes, MD, Kenneth Harris, Steven Millward, MD, Stuart Kribs, MD, Kirk Lawlor, MD.

Division of Vascular Surgery, London Health Sciences Centre, University of Western Ontario, London, Ontario.

The role of endovascular therapy in the management of inflammatory aneurysms of the abdominal aorta is controversial. Review of our endovascular program database has identified 6 patients who have undergone treatment for pre-operatively diagnosed inflammatory abdominal aortic aneurysms. Patient charts, pre-operative investigations and post-operative CT scans(as per surveillance protocol) were reviewed. Outcomes measured were primary success of the procedure, variation in CT scan defined peri-aneurysmal fibrosis, change in aneurysm size, development of endoleak, requirement for re-intervention, aneurysm rupture, death, and progression or resolution of symptoms,. At a mean follow up of 24.8 months(4-56months), endovascular repair has been successful in all six patients. All patients demonstrated CT reduction of perianeurysmal fibrosis with a mean of 47% absolute reduction(range 33% -69%). All patients had aneurysm sac shrinkage with a mean of 26%(range 11%-55%). There were no aneurysm ruptures or deaths, and no patient has had persistent endoleak. Of the 3 patients who presented with abdominal or back pain, all are now symptom free. One patient who presented with bilateral ureteral obstruction continues to have moderate unilateral hydroureter post ureteric stent removal. One patient required re-intervention for limb thrombosis of a bifurcated graft after X months. In our center, endovascular treatment of the inflammatory abdominal aortic aneurysm is safe and effective and is the treatment of choice in the anatomically suitable patient.

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FREQUENCY AND OUTCOME OF REINTERVENTIONS AFTER ENDOVASCULAR REPAIR FOR ABDOMINAL AORTIC ANEURYSM: A PROSPECTIVE COHORT STUDY.

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Purpose: To describe the long term results of endovascular abdominal aortic aneurysm repair (EVAR), and to report the frequency, type, and outcomes of reinterventions.

Methods: Between September 1996 and December 2003, 308 patients were treated with EVAR and data were collected prospectively. Five devices were used: Vanguard (n=68), Talent (n=52), Excluder (n=56), Zenith (n=120), and Quantum (n=12). Two patients were excluded (one primary conversion, and one post-operative death), leaving 306 patients, none lost to follow up. Follow up required a CT scan before discharge. During the first period of the study a CT scan was done at each interval visit. Subsequently, the strategy was modified to use duplex ultrasound and abdominal X-ray, with CT scan used only if necessary.

Results: Follow-up was 36±22 months. Secondary interventions were required in 47 patients (15%): 31 (66%) elective and 16 (34%) emergent. In the latter group, 14 required surgery for prosthetic limb occlusion, and two for symptomatic aneurysms. In 32 patients, the primary reintervention was successful; in 15 patients an additional 13 secondary reinterventions, and 4 tertiary reinterventions were required. A total of 72 adjunctive manoeuvres were performed in 64 surgeries done for complications and adverse events: 49 endovascular (68%) and 23 open (32%). The success of endovascular reinterventions was 80%: proximal cuff extensions (100%), bridging stent-grafts (80%), limb extensions (79%), embolisations for type II endoleak (66%), and recanalizations of limb occlusion (56%). The success of open reinterventions was 96%: cross-over bypasses (100%), non-conversion laparotomies (80%), and open conversions (100%). There was no mortality.

Conclusion: EVAR can spare major surgery in over 80% of individuals with aortic aneurysms, and it is associated with a relatively low burden of repeated surgeries to the remaining patients. Our follow up is simple and effective. Reinterventions are associated with high success rate.

Incidence, Mechanisms, and Implications of Internal Iliac Artery Occlusion for Endovascular Aneurysm Repair. RPN Willoughby, JA Fenton, SR Pudupakkam, RA Greco, EWD Roberts. Sudbury Regional Hospital, Sudbury, Ontario, Canada.

Purpose: To review the incidence of intentional and unintentional IIA occlusion in patients undergoing EVAR, patient outcomes, and strategies to reduce IIA occlusion in a single tertiary-care center.

Method: All patients undergoing abdominal aortic or iliac artery EVAR between June 2000 – March 2004 (n = 79) were retrospectively reviewed. Patients undergoing intentional IIA coil embolization and patients experiencing unintentional IIA occlusion were evaluated for indication for IIA coil embolization, mechanisms of unintentional IIA occlusion, and outcomes including buttock claudication, sacral decubitus ulcer, buttock necrosis, ischemic colitis, and colonic necrosis.

Results: Forty-five IIA in 37 patients (46.6%) became occluded. Occlusions were determined to be patient-related in 36 IIA, device-related in 4 IIA, and surgeon-related in 5 IIA. Twenty-nine patients (78.4%) received intentional IIA coil embolization (4 bilateral). Nine patients (24.3%) experienced unintentional intraoperative IIA occlusion related to the stent-graft (n = 5) or occluder device (n = 4). Three patients (8.1%) developed IIA occlusion postoperatively secondary to arterial thrombosis. Ten patients (27.0%) were rendered with bilateral IIA occlusion (6 intentional and 4 unintentional). Functional outcomes are available for 35 patients (94.6%); 2 patients died perioperatively unrelated to IIA occlusion. Eighteen patients (51.4%) experience non-disabling buttock claudication. Three patients (8.6%) developed more serious complications. One patient with intentional left IIA occlusion developed ischemic colitis. One patient with intentional bilateral IIA coil embolization developed a sacral decubitus

Aortic Neck Dilatation After EVAR: Should Over-sizing be Blamed?

Sergio M. Sampaio, M.D.; Jean M. Panneton, M.D.; Geza Mozes, M.D.; James C. Andrews, M.D.; Thomas Bower, M.D.; Manju Kalra, MBBS; Audra A . Noel, M.D.; Timothy M. Sullivan, M.D.; Peter Gloviczki, M.D., Division of Vascular Surgery, Mayo Clinic, Rochester, MN

Abstract Neck dilatation may lead to loss of proximal sealing after Endovascular Abdominal Aortic Aneury Repair (EVAR). This study aims at evaluating the incidence, risk factors, and clinical consequences of post-EVAR n dilatation, in patients treated with two endografts

Methods We included all patients submitted to EVAR, with AneuRx^{TM} (n=112) and Ancure^{TMb} (n=32) devi Preoperative aortic neck characteristics [diameter, calcification and thrombus load (thickness, perimeter coverage, cr sectional area occupancy)] were evaluated at mid-neck level, and device oversize % was calculated. Aortic neck diam was measured at the same level on all postoperative CT scans.

Results The probability of a neck dilating ≥10% relative to preoperative diameter, was similar in AneuRx (69.5%) Ancure-treated patients (68.0%), at 1.5 years (P=0.44). Necks in AneuRx-treated patients had higher probabilitie dilating ≥ 15% relatively to preoperative diameter than Ancure-treated patients (45.5% vs 18.7% at 1.5 years, P=0.0 but the probability of such % of dilation relatively to first postoperative diameter was not different between both gro (12.4% vs 9.1% at 1.5 years, P=0.082). None of the preoperative neck characteristics was associated with neck dilata probability, or with mean neck dilatation % at 1st postoperative CT scan, at 1 year, or at 1.5 years post-EVAR. Oversiz correlated with neck dilatation % at 1st postoperative CT scan, relatively to preoperative diameter, both in Ane (correlation coefficient 0.469, P<0.0001) and in Ancure (correlation coefficient 0.464, P<0.011) groups, but did correlate with neck dilation % at 1 or 1.5 years, relative to 1st postoperative CT scan, in either group. Patients with without caudad device migration (≥ 5mm) had similar mean neck dilatation % at 1.5 years, relative to preopera diameter, but migrators had higher mean dilatation % at 1.5 years, relative to 1st postoperative neck diameter (11.4% 5.6, P=0.012).

Conclusion Two phenomena may occur: an immediately post-implant dilatation, correlated with the percentag oversize, more likely to reach values ≥ 15% with a self-expandable device than with a balloon-expandable graf subsequent dilatation, relative to first postoperative diameter, equally probable with either type of device, non-correl with over-sizing, associated with caudad device migration. We did not find any adverse role for the degree of device/n oversize.

Initial Canadian experience with a fenestrated endograft for the management of peri-renal aortic aneurysm.

F. Brandschwei MD FRCPC, R.D. Moore MD FRCSC, et al. ***Departments of Interventional Radiology and Vascular Surgery, Peter Lougheed Center, University of Calgary, Canada.***

The anatomic limitations imposed by aortic neck length and quality continue to result in the rejection of patients otherwise suitable for endovascular repair. We report on the technical success and short term follow-up of the first Canadian implants of the commercially developed Cook fenestrated endograft for the management of peri-renal aortic aneurysm.

Between January and April 2004, 1 female and 4 male patients (mean age 75 years) were treated with fenestrated endovascular grafts for peri-renal aortic aneurysm (mean sac size 56mm, mean neck diameter 26mm, mean neck length 4.8mm). Pre-op co-morbidities included COPD n=5, hypertension n=4, active CAD n=4, DM n=2, renal failure n=3, and severe PVD n=1. One patient had a prior infra-renal tube graft AAA repair with supra-graft aneurysm, and one patient had previous exclusion of most of the descending thoracic aorta with a thoracic endostent. A hostile abdomen due to prior retroperitoneal irradiation was present in one patient. Indications for fenestrated endograft repair included short neck n=5 , aortic thrombus at neck n=3, and severe neck angulation >50degrees n=1. Pre-op imaging included DSA aortography and 16-slice multiplanar CT angiography with 3-D reconstruction in all patients. Aneurysm exclusion was performed under general anesthesia using a DSA C-arm in the operating theatre with a mean operating time of 208 minutes (140-240), a mean contrast load of 224 ml, and a mean fluoroscopy time of 65 minutes. A total of 15 visceral arteries were incorporated during reconstruction including 10 renal arteries, 4 SMA, and one celiac artery. The one female patient required a left iliac conduit for access due to an inability to pass the device. Technical success at discharge was 100% with no branch artery occlusions, no renal failure (creatinine rise > 40umol/L), and full sac exclusion. One patient had a type 2 endoleak that had resolved on discharge CT. Mean length of stay was 4 days excluding one patient who developed post-op pneumonia and required a prolonged stay of 14 days. Other post-op complications included post-discharge MI and CHF n=1. No deaths were observed. At mean CT and clinical follow-up of 60 days, no endoleaks, graft migration, or branch vessel complications have been identified.

Fenestrated endovascular repair of complex peri-renal aneurysms can be safely completed using commercially available devices, and will expand the indications for endovascular AAA repair, including patients with previously inadequate necks, and supra-graft aneurysms unsuitable for open repair. Other potential uses include the salvage of previously placed infra-renal endografts with type 1 endoleaks. Larger series with long-term follow-up are required to recommend widespread application.

Aneurysms involving the thoracic aorta remain formidable challenges in patient care. Alth experience with surgical reconstruction has become more widespread, operative repair ren complex, morbid procedure requiring prolonged hospitalization and recovery. The emerge endovascular technologies has altered the spectrum of aortic intervention. We present our elective experience in endovascular thoracoabdominal aneurysm repair in a selected high- group of patients. Over a 24 month period, 15 patients underwent endovascular exclusion thoracoabdominal aneurysm. Their mean age was 63years (26-79) and the mean aneurysm diameter was 65.8 mm (range 50-85). Mean follow up was 19 months. All had been deem poor risks for conventional aortic repair due severe pulmonary dysfunction (n= 5), severe coronary disease (n=7), or previous aortic surgery (n=4). All aneurysms were successfully excluded. Deliberate coverage of the left subclavian artery was necessary in 3 patients. Immediate perioperative complications included 1 femoral artery thrombosis and 1 iliac ru requiring immediate repair. Late complications included 1 patient with an iliac dissection blue toe syndrome requiring iliac stenting and toe amputation. The average post-operative hospital stay was 3.8 days (range 1-8). During the follow-up period, one patient required r intervention for a Type II endoleaks and ultimately underwent surgical removal of the end for hemoptysis due to an apparent aortobronchial fistula. No perioperative neurologic ever were identified. There was 1 death in follow-up unrelated to aortic pathology. Endovascu repair of thoracoabdominal aneurysms presents a viable alternative to conventional surgic repair. This can be performed with reduced morbidity and lengths of stay compared to ope repair. This early experience in patient with diverse thoracoabdominal pathology, demons the dramatic advantages of endovascular repair.

Endovascular stent graft repair of traumatic rupture of the thoracic aorta: the new gold standard? Jason Faulds, Andrew B Hill MD. Division of Vascular Surgery, The University of Ottawa and Ottawa Hospital.

Introduction: Multiple small clinical series have reported the use of endovascular stent graft repair (EVAR) for traumatic rupture of the thoracic aorta. To date, no data synthesis has been reported.
Objective: To determine if EVAR should be considered as first line therapy.
Methods: Individual patients from a small local clinical experience were pooled with individual data reported from patients in the published literature.
Data Sources: Local patients and a Medline review. Search terms included stents, wounds, injuries and thoracic aorta. Hand searching references of relevant articles identified additional case reports.
Study Selection: Forty-five publications (151 patients) were selected from 72 articles based on predetermined inclusion criteria. All local patients (4) were included.
Data extraction: Only EVAR repair of acute blunt traumatic injury of the thoracic aorta was included. Acute repair was defined as surgical intervention within 30 days of injury (n= 144). Delayed repair was defined to include repairs between 30 days and 1-year post injury (n == 11). Interventions following a delay greater then 1 year were not included in the study. Two reviewers independently extracted data.
Results: 155 patients were repaired with EVAR for blunt traumatic aortic rupture. Objective documentation of injuries included injury severity scores (ISS) (mean = 41, n = 16), Glasgow Coma Scale (GCS) (mean = 10, n = 14) and ASA (mean = 3, n = 23). There were 2 deaths (1.3%) attributed to EVAR (1 Type 1 endoleak, 1 CVA). Ten additional patients died from associated injuries and co-morbidities for a total mortality rate of 7.7% (survival 92.3%). The paraplegia rate was 0. There were no conversions to open repair. Other complications: neurological (1.3%), pulmonary (4.6%), vascular (0.7%), cardiac arrhythmia (0.7%). Three patients required surgery for arm ischemia (2%). There was 1 delayed aorto-esophageal fistula (0.7%). Thirteen incidents of endoleak were recorded (8.6%). All but two were successfully treated with endovascular therapy.
Conclusions: Reporting standards and objective documentation of associated injuries require improvement in publications of EVAR for traumatic tear of the thoracic aorta. The morbidity and mortality of EVAR compares very favorably to open. EVAR should be available and considered as a primary treatment option at centers that manage traumatic tears of the thoracic aorta.

ımatic rupture of the thoracic aorta: A plea for a definitive and safe operation.

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ective : Comparison between two methods of circulatory support and their consequences on survival and spinal

l preservation.

hods: 165 traumatic ruptures of the aortic isthmus (111 acute and 54 chronic) were repaired with a Dacron graft

position. Among patients with a chronic rupture discovered between 3 months and 46 years after the accident

dian: 10 years), 2 were repaired emergently either for a sudden rupture or an acute tracheobronchial

pression). Among 111 patients with an acute rupture, 90% had associated cerebral, abdominal or orthopedic

ons. In 7 of them (6.3%), a transaortic gradient varying from 52 to 80 mmHg (mean: 63 mmHg) was disclosed

5 were found paraplegic and anuric preoperatively. In 4 patients, preoperative chest tube drainage varied from

0 to 16 000 ml (mean: 9 500 ml) and necessitated an emergency thoracotomy.

ılts: Hemodynamic data obtained were as follows with statistical significance at P value < 0.05. Shunt flow:

3 ± 576 ml/min (median 3000). Pump flow: 3727 ± 578 ml/min (median 3700) (P < 0.001). Mean proximal

olic pressure (shunt 152 ± 30 mmHg). Pump 111 ± 20 mmHg (P < 0.001). Mean distal pressure (shunt: 64 ± 22

Hg). Pump: 81 ± 19 mmHg (P = 0.01). Survival rate in acute cases was 94.5% (105/111) and 100% in chronic

s (54/54). Among 160 patients with an intact spinal cord preoperatively, only one patient (0.6%) developed

plegia postoperatively due to an unfunctional Gott shunt, equivalent to no perfusion. No renal failure occurred.

clusion: Open repair of traumatic rupture of the thoracic aorta is a very safe operation, giving excellent long-

ı results. The use of a perfusion method is mandatory for organ protection and is life-saving for patients

enting with either an acute aortic hemorrhage or obstruction. The left atrio-aortic bypass with a BioMedicus

ıp is physiologically superior and technically more versatile than the passive Gott shunt.

Single institution experience with Aortic endograft explantation

Blair jf Bruneau l, Beaudoin n Elkouri S, Soulez g, Thérasse E

Purpose : review the clinical and anatomical factors in a cohort of patients requirering endograft explantation

Methods : Since 1997 , 103 patients with aortic aneurismal disease were treated with Talent endografts . During late follow –up, six (6) patients underwent graft explantation. The indications for graft removal were : rupture (2) , aorto-enteric fistula (1) , aneurism expansion (3) . The average follow-up before graft explantation was 30 months, range 12 – 60 m . Among patients treated with Talent grafts , one graft was a open web design , all other grafts were implanted with a supra-renal bare stent . Five (5) patients were treated for endoleaks in the late post-op period . The type of treated endoleak was Type one in two patients , type 3 in three patients , residual or new endoleaks were present at last follow –up in four of six patients . At explantation proximal neck dilatation was noted in four (4) patients ,this was associated with proximal graft migration in two patients and type one endoleak in four pts .Supra-renal clamping was needed in five cases , supraceliac clamping in one . Adjunctive axillo-femoral bypass was used in two patients . Complete graft removal was possible in all patients no graft incorporation was noted at surgery . Continuity was re-established by aorto-iliac bypass in three patients , axillo-femoral bypass in one and aortic tube graft in two pts. Operative mortality was 2 of 3 pts in an urgent setting and no mortality in elective (aneurismal growth) pts . Analysis of explanted graft showed proximal stent detachment in one case, fabric rupture in one, and suture hole bleeding in one

In conclusion , the majority of our patients safely treated by aortic endografting .Late graft failures were usually secondary to aortic neck dilatation leading to type one endoleak ,and rapid aortic aneurism expansion, . With good pre-op preparation graft removal can be performed safely in the elective setting . Life long follow-up of patients is still required following aortic endografting , aggressive treatment of significant aneurismal growth is recommended .

Does the combined risk of stroke, myocardial infarction, and death following carotid endarterectomy justify the pursuit of carotid artery angioplasty: a regional study?

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Introduction: the composite rate of stroke, death and myocardial infarction following carotid endarterectomy has been used as an argument to pursue carotid artery angioplasty.

Primary Objective: to determine if the composite outcome of perioperative stroke, death and myocardial infarction following carotid endarterectomy justifies the pursuit of carotid artery angioplasty.

Setting: a regional tertiary referral center.

Patients: all patients in a geographic region undergoing carotid endarterectomy were included to approximate a population study.

Primary Outcome: any stroke, death or myocardial infarction following carotid endarterectomy.

Results: All patients in a defined geographic region over a 10-year period were included in the study (n = 1329). The overall 30-day perioperative composite outcome for stroke, death and myocardial infarction was 5.0%. The 30-day perioperative composite outcome was 5.6% for symptomatic carotid stenosis (n = 1,103) and 2.2% for asymptomatic carotid stenosis (n= 226). The range of composite outcome by surgeon ranged from 0 to 33%. The composite outcome was significantly related to preoperative symptomatic stenosis (OR = 2.7, p=0.03), history of preoperative congestive heart failure (OR = 39.5, p = 0.0) and the intraoperative use of a shunt (OR = 3, p=0.0). The relation between surgical service and the type of anaesthesia used was not significant when stratified by preoperative symptoms.

Conclusion: the composite outcome of perioperative myocardial infarction, stroke or death following carotid endarterectomy in this regional population based study does not appear to justify enthusiasm for the use of carotid angioplasty. Even with the addition of myocardial infarction to the traditional perioperative outcome of stroke and death the outcomes for patients with symptomatic and asymptomatic carotid stenosis remained well within recommended standards for stroke and death alone following carotid endarterectomy. Potential exists to improve these outcomes even further with continued audit of individual surgeon outcomes.

Redo carotid operation : An 14 - year experience.

Purpose: The recent emergence of carotid stenting in the management of carotid disease challenge the role of surgery, particularly for recurrent carotid stenosis. This study was undertaken to determine the safety and durability of redo carotid operation (RCO) in a community hospital.

Methods: A retrospective review of 628 carotid endarterectomies performed by the author between July 1, 1990 and March 31, 2004, identified 25 patients who underwent 26 RCOs (4.2%) .There were 17 males(68%) and 8 females, with a mean age of 65.8 years(range,51-86 years).The mean interval from the primary carotid surgery to RCO was 75.1 months (range, 1-248 months).Operative indications were severe asymptomatic stenosis in 12 cases(46%),transient ischemic attacks(TIA) in 7(27%), amaurosis fugax in 2(8%),stroke in 4(15%) and false aneurysm in 1(4%);22 (85%)patch angioplasties were performed ,8 with vein,12 with synthetic material and 2 with biologic material. Interposition grafts were required in 4(15%),3 with synthetic material,1 with vein. One patient was excluded of the study (RCO for stroke in evolution). Complete follow-up was available in 18 patients(75%) and averaged 56 months(range,1-156 months);incomplete follow-up in 6 ,averaged 38 months(range,2-81 months).84% of patients underwent follow-up duplex scanning.

Results: There were no operative deaths and one operative stroke (4%), 3 transient cranial nerve deficits (12%),5 lacerations of the internal jugular vein(20%). Late contralateral stroke occurred in one patient, no late ipsilateral stroke. Actuarial stroke-free survival and overall survival at 5 years were 95% and 81.5%.Actuarial survival for freedom from recurrent stenosis of > 80% were 87.7% at 5 years.

Conclusions: RCO can be performed safely with excellent protection from stroke and long-term durability. The outcomes of primary carotid endarterectomy and RCO are comparable: stroke 1/25(4%) vs 17/602(2.8%), death 0/25 vs 6/602(1%), TIA 0/25 vs 10/602(1.7%), combined mortality-stroke 4% vs 3.8%. The same surgical indications should therefore be applied for RCO.

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ENDOVASCULAR TREATMENT OF POPLITEAL ARTERY ANEURYSMS: A PROSPECTIVE COHORT STUDY.

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Purpose: To report the results of a prospective cohort study of popliteal artery aneurysms (PAA) treated with endovascular techniques at a tertiary academic vascular centre.

Methods: Selection criteria included PAA >21 mm; presence of a landing zone in the proximal and distal popliteal artery; absence of aneurismal or stenotic inflow disease; and at least one good vessel run off. All patients underwent angiography, and on admission, duplex ultrasound scanning (DUS) to select size and length of the stent-graft. Access to the ipsilateral femoral artery was achieved with an open technique. Self-expanding ePTFE nitinol-supported stent-grafts (1 to 4 per patient) were used. Follow up included DUS, plain x-rays of the knee and ankle/brachial index at discharge, after six weeks, and every six months thereafter. All patients received chronic anticoagulation or antiplatelet therapy. The study was approved by the institutional ethic review board, and all patients provided informed consent.

Results: From June 1998 to April 2004, 55 PAA were repaired in 37 patients, age 68 ± 8 y, 89% male. The diameter was 29 ± 6 mm. All were atherosclerotic and treated electively, except 5 which were treated emergently (1 ruptured pseudoaneurysm and 4 acute ischaemia). The tibial run-off was 1 vessel in 4%, 2 in 27%, and 3 in 69% of aneurysms, respectively. All repairs were technically successful. At a mean follow up of 30 months (1- 69), 12 grafts occluded (22%): thrombolysis was used in 6 (4 successful, 1 underwent thrombectomy, and 1 was managed conservatively), thrombectomy in 2 (1 successful, 1 failed), and conservative management in 4. No patient required amputations or bypasses. Primary and secondary patency rate were 74% and 81%, respectively. By univariate analysis, treatment with clopidogrel was the only significant variable associated with greater patency (n=15, patency 100%) (P=0.02), while run-off, number and length of endoprostheses, type of surgery (elective vs. urgent), and ilio-femoral inflow, were not.

Conclusions: Endovascular repair of popliteal artery aneurysms is feasible. The patency appears lower than for open repair. To better understand the role of this minimally invasive technique, further studies are necessary to define the ideal indications, anatomic and prosthetic graft limitations, and the role of anticoagulant and antiplatelet treatment.

DISTAL BYPASS TO THE FOOT :

10 YEARS EXPERIENCE IN PRIVATE PRACTICE

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summary : This is a retrospective chart review from january 1994 to january 2004 regarding distal bypass to the foot for ischemic rest pain and/or tissue loss. The aims of the study were to look at the type of reconstruction, the morbidity/mortality of the procedure, the limb-salvage rate at 4 and 12 months and finally, the return to a normal life style.

Method and results: 91 procedures were done in 85 patients. The source of inflow was the bk popliteal artery in 63% of cases and the target vessel was, most of the time, the dorsalis pedis (44%). Most of the reconstructions were done with inverted GSV. The perioperative morbidity/mortality were 12% and 15% respectively. The limb-salvage rate at 4 months was 82%, being essentially the same at 1 year. All patients who had a successful bypass and preserve their limb did return home with a normal life style.

Conclusion: Distal bypass to the foot for ischemic rest pain and/or tissue loss is a technically demanding operation, but still gives very good functional results with a low amputation rate (18% at 4 months). This study compares favourably with other large North American studies. By using an aggressive approach with distal bypass, we can lower the amputation rate and therefore, the admission rate to a nursing home.

Hemorrhagic shock (HS) is associated with significant myocardial dysfunction after resuscitation. Our lab has demonstrated a causative role for TNF in this dysfunction. The source of TNF has been elusive however cardiac mast cells granules contain pre formed TNF. We hypothesize that stabilizing mast cells, preventing the release of cardiodepressant cytokines, may improve cardiac function in a model of hemorrhagic shock and resuscitation (HS/R). Animals were randomized into 1 of 4 groups. Group 1 was the sham-operated controls. Group 2 and 3 received either disodium cromoglycate (5mg/kg, iv) or ketotifen fumarate (1mg/mL, iv) selective connective tissue mast cell stabilizers, 15 minutes prior to the onset of shock. Group 4 rats received saline at the same time point. Rats under anesthesia he shocked to a MAP of 40mmHg and maintained for 60 minutes. Animals were then resuscitated with their shed blood and lactated ringer's solution to a MAP of 100-120mmHg, maintained for 120 minutes. Following 120 minutes of resuscitation the hearts were excised and function was assessed on a Langendorff apparatus. Separate groups were required for biochemical analysis. Both drug treated groups showed a significant improvement in cardiac function for all measured variables, including peak systolic pressure, +dP/dt and -dP/dt. Elevation in serum beta-hexosaminidase (a mast cell granule product) levels and histology verified mast cell stabilization in the drug treated groups. This data suggests that HS/R results in mast cell degranulation. Stabilization of mast cells significantly improved cardiac contractile function and reduced markers of mast cell degranulation. Thus mast cell degranulation during HS/R may have an important and unrecognized role in decreaseing the ssystemic injury induced by HS/R.

ple organ dysfunction syndrome commonly results after the repair of a ruptured abdomina
ysm due to an inflammatory response. This study sought to further analyze the role of the
lement cascade in linking an ischemia-reperfusion event with systemic inflammatory resp
ome. We investigated the effects of an orally administered complement factor C5a recept
onist (AcF-[OPdChaWR]) in a rat model involving hemorrhagic shock followed by aortic
)ing to simulate the rupture and repair of an abdominal aortic aneurysm. Animals were div
ham or shock and clamp groups, with shock and clamp animals undergoing 1 hour of
rrhagic shock at a mean arterial pressure of 50 mm Hg, followed by 45 minutes of
mesenteric aortic clamping, and 2 hours of resuscitated reperfusion. These animals were g
mized treatment of either C5a receptor antagonist (10 mg/kg) or 0.9% saline solution by o
;e, prior to the start of the protocol. Vascular permeability to ^{125}I was measured in the inte
ıngs, and mRNA expression of the pro-inflammatory cytokine TNF-α was measured. C5a
tor antagonist-treated animals were hemodynamically more stable, and required less fluid
ain their blood pressure (68.4 ± 6.9 mL versus 87.7 ± 4.1 mL; $P < 0.03$). Intestinal albumi
educed from 255 ± 58 to 107 ± 30 mg/g dry intestine with the C5a receptor antagonist. Th
tor antagonist reduced lung permeability index from 0.13 ± 0.02 to 0.063 ± 0.015. TNF-α
A expression was significantly reduced in both intestinal and pulmonary tissue after C5a r
onist treatment (from 0.95 ± 0.12 to 0.45 ± 0.12 in intestine; $P=0.03$, from 1.25 ± 0.20 to 0
n lung; $P<0.05$). These data demonstrate that AcF-[OPdChaWR] is orally absorbed, and r
verity of injury in this model of ruptured abdominal aortic aneurysm. This suggests the
tance of C5a receptor-mediated events, and underlines the potential for developing new
)eutic agents to reduce the mortality following ruptured abdominal aortic aneurysm involv
lement cascade.

Endovenous Laser Allows Office-Based Management of Saphenous Incompetence.

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Background: Varicose veins resulting from saphenous vein incompetence are very common. Limited operating room time or resources may make it difficult for many Canadian surgeons to accommodate those patients who require or request treatment. However recent innovations in the management of varicose veins offer the potential for intervention outside the hospital setting.

Objective: To evaluate the effectiveness, practicality and potential role of endovenous laser ablation of the saphenous vein in establishing office-based solutions for varicose vein treatment.

Method: Patients with large varicose veins and clinical evidence of long, short or accessory saphenous vein incompetence were selected for study. Pre-treatment duplex documented the presence of saphenous trunk reflux, and recorded the maximal diameter of the incompetent vein. The extremities were photographed pre and post-treatment. All patients underwent ultrasound guided laser ablation of the identified incompetent saphenous vein under local anaesthetic only using the Diomed EVLT™ system. Patients were evaluated at 1, 4 and 8 weeks post treatment with clinical exam, venous duplex and photography.

Results: 100 consecutive EVLT procedures in 82 patients performed between March 2003 and February 2004 were reviewed. 66 were female, 16 male with mean age of 51.2 years (range 28 to 67). 89 long saphenous, 7short saphenous, and 4 accessory saphenous veins with a mean pre-treatment maximal diameter of 12.2mm (range 7 – 19mm) were treated in an office procedure room under local anaesthetic only. All patients were ambulatory immediately post treatment and all resumed regular daily activities within 48 hours. No major complications were noted. Clinically evident superficial thrombophlebitis involving the main saphenous trunk or large tributaries was noted after 12 procedures, while 3 patients reported symptoms of neuralgia lasting between 3 and 8 weeks. 6 procedures were considered treatment failures, defined as persistence of large varicosities due to failure to ablate the target vein (2 procedures) or failure to recognize and treat a second incompetent saphenous trunk in the extremity (4 procedures).

Conclusion: Our initial experience suggests that endovenous laser can be used to successfully treat saphenous vein incompetence in an office setting. This technique may benefit both patients and surgeons by providing an alternative to traditional hospital - based surgical management.

Preservation of Sexual Function in Males following Open Repair of Abdominal Aortic Aneurysms

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A retrospective review was conducted of 38 male patients with normal pre-operative sexual function who underwent open repair of their aneurysm to determine incidence of sexual dysfunction. Patients received straight (n=27), bifurcated (n=9) or endoluminal (n=2) grafts.

At the 3 month period, sexual dysfunction was noted in 55.6% of the bifurcated versus 25.6% in the straight graft group. Retrograde ejaculation and erectile dysfunction were the commonest complaints.

We report early results of a technique developed to preserve sexual function in males. Our current approach includes the following to preserve sympathetic fibre function.

1. Right-sided retroperitoneal dissection of the AAA 2. NO left common iliac dissection 3. Balloon occlusion left/right iliac artery 4. Mattress suturing of distal anastomosis 5. No "T'ing" over left common iliac artery.

Ten males have undergone AAA repair using the above surgical technique. Eight received straight tube grafts and 2 received bifurcated tube grafts. At 1 month, 4 reported no change in function, 5 were not sexually active and 1 reported a change in function. At 3 months post-operatively, 6 maintained pre-operative function, 1 reported a change and 3 have not engaged in activity. The 10 patients have been sent the IIEF questionnaire to collect further data on their sexual function pre and post operatively. **Conclusion**: Sexual dysfunction in open repair of AAA's is very high. We report a technique with early results to maintain sexual function in males with open repair of AAA's.

Postoperative Delirium Following Open Repair of Abdominal Aortic Aneurysm (AAA)

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Objectives

Post operative delirium is a frequent and often disturbing accompaniment of major vascular surgery, difficult to predict and of uncertain long-term consequences to the patient's quality of life. The objective of this study has been: 1) to correlate demo-graphi comorbidities and drug regimens in patients undergoing elective open repair of abdominal aortic aneurysm with the occurrence an severity of postoperative delirium,

2) to correlate the occurrence and severity of postoperative delirium with subsequent intellectual ability.

Methods

Informed consent was obtained on 102 patients to enter a prospective uncontrolled longitudinal study of intellectual function by standard psychological tests taken before surgery, in the early postoperative period before discharge and at intervals of up to a yea postoperatively. No other difference in preoperative, intra-operative or postoperative management was instituted either in consenti or non-consenting patients undergoing open AAA repair. Multifactorial and unifactorial statistical analyses have been performed the data obtained.

Preliminary Results (on 46 patients)

The overall incidence of delirium was 35%. The major statistically significant factor associated with delirium was advanced age: mean age with delirium was 73 years, and without delirium was 69 years. Other associations of some interest were as follows: 1) t use of vasoactive medications was higher in patients without delirium (90%) than in patients with delirium (44%). 2) the use of psychometric medications was lower in patients without delirium (17%) than in patients with delirium (63%). No association to delirium was found with 1) the occurrence, severity or number of peri-operative complications, 2) the use of alcohol. Although the was no overall intellectual deterioration following delirium, affected patients invariably scored worse on a battery of four tests of cognitive function than non-affected patients at three months following surgery.

Conclusions

Age continues to be major predictor of postoperative delirium. Vasoactive medications may protect against delirium, and the use psychometric drugs may precipitate it. Also, intellectual deterioration appears more likely in the intermediate term, that is, three months after open AAA repair, with a history of post-operative delirium. In obtaining informed consent for open repair in the elde patient, it is appropriate to consider that delirium and subsequent intellectual loss are common with this operation.

Venovenostomy for Outflow Obstruction in Patients with Upper Extremity Hemodialysis AV Fistula

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Introduction: Venous outflow obstruction is a common problem in patients with upper extremity hemodialysis access. The upper extremity has two venous outflow tracts: the cephalic and the basilic vein. Occasionally outflow obstruction can develop in one vein while sparing the other. Surgical revision to divert blood flow into the patent vein should restore unobstructed flow but the result of this type of procedure is not well known**.** The purpose of this paper is to describe our experience with outflow venovenostomy to salvage dysfunctional upper extremity AV fistula threatened by venous outflow obstruction in hemodialysis dependent patients.

Methods: Between Sept 1999 to Jan 2004, all patients who underwent hemodialysis fistula procedures at our institution were identified by surgeons' billing records. Review of the operative records was done to find patients with outflow venovenostomies. Data regarding patient demographics and co morbidities, the indications and complications of the intervention, and fistula function and patency were gathered from patient charts, and dialysis records.

Results: A total of 9 patients underwent the proposed procedure in our institution between September 1999 and January 2004. Five females and 4 males mean age was 66 years (range 32-86). Mean follow up was 14.3 months (range = 2-31). Three patients required further procedures to maintain access patency. Post procedural primary patency was 75% at 3 month and 60% at 6 months. Assisted patency was 100% for the entire follow-up period as none of the fistula went on to thrombose. No fistula was lost to follow-up.

Conclusion: Outflow venovenostomy is a viable surgical option for selective patients with failing AV fistula due to venous outflow obstruction.