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Prevalence and Clinical Consequences of Carotid Artery Residual Defects Following Endarterectomy: A Prospective CT Angiography Evaluation Study

van der Kolk A.G., de Borst G.J., Jongen L.M., den Hartog A.G., Moll F.L., Mali W.P.Th.M., Hendrikse J. Eur J Vasc Endovasc Surg 2011;42:145-53.

Objectives: It is still unclear whether residual defects seen after carotid endarterectomy (CEA) have clinical consequences. We investigated prevalence of residual defects in the carotid artery and their possible impact on clinical and Duplex ultrasound (DUS) follow-up.

Materials and methods: Sixty-five patients who had undergone CEA were prospectively examined with 1–3 month postoperative computed tomographic angiography (CTA), clinical and DUS follow-up. Defects in common (CCA), external (ECA) and internal carotid artery (ICA) were scored as clamp marks, intimal step or flap, mural thrombus, kink, microdehiscence suture or residual stenosis.

Results: Fifty-eight patients (89.2%) had residual defects in CCA, ECA or ICA (143 defects). Intimal steps ($n = 39$) and residual stenosis ($n = 17$) were most noted defects. Only residual defects in ECA were significantly associated with significant higher PSV values both at short-term and long-term follow-up (1990 vs. 1400 mm s^{-1} at 1 year and 2000 vs. 1230 mm s^{-1} at 2 years, *P*-values 0.031 and 0.016).

Conclusion: Carotid artery residual defects on CTA after CEA are very common, simple fingerprints of the operative procedure, have no clear consequence. When CTA is performed clinically after CEA, knowledge of high prevalence and type of defects detected on CTA may be of importance for radiologists and clinicians.

Endovascular Repair of Aorto-iliac Artery Injuries after Lumbar-spine Surgery

Canaud L., Hireche K., Joyeux F., D'Annoville T., Berthet J.-P., Marty-Ané C., Alric P. Eur J Vasc Endovasc Surg 2011;42:168-72.

Objective: This study aims to describe the endovascular management of abdominal-aortic- or common-iliac-artery injuries after lumbar-spine surgery.

Methods: Patients treated for abdominal-aortic- or common-iliac-artery injuries after lumbar-spine surgery during a 13-year period were identified from an endovascular database, providing prospective information on techniques and outcome. The corresponding patient records and radiographic reports were analysed retrospectively.

Results: Seven patients were treated with acute ($n = 3$) or subacute ($n = 4$) injuries of the common iliac artery ($n = 6$) or abdominal aorta ($n = 1$) after lumbar-spine surgery. Vascular injuries included arterial lacerations ($n = 3$), arteriovenous fistulas ($n = 2$) and pseudo-aneurysms ($n = 2$). The mean age of the patients was 51.7 years (30–60 years), 71.4% were women. These lesions were repaired by transluminal placement of stent grafts: Passager ($n = 3$), Viabahn ($n = 1$), Wallgraft ($n = 1$), Zénith ($n = 1$) and Advanta V12 ($n = 1$). Exclusion of the injury was achieved in all cases. Mortality was nil. There were no procedure-related complications. During a median follow-up of 8.7 years (range 0.3–13 years), all stent grafts remained patent.

Conclusions: Sealing of common iliac artery or abdominal aortic lesions as a complication of lumbar-disc surgery with a stent graft is effective and is suggested as an excellent alternative to open surgery for iatrogenic great-vessel injuries, particularly in critical conditions.

Use of ViaBahn Open Revascularisation Technique for Above-knee Femoro-popliteal Anastomosis: A Technical Note

Greenberg G., Szendro G., Mayzler O., Ginzburg V., Leytzin A. Eur J Vasc Endovasc Surg 2011;42:203-6.

We describe a ViaBahn Open Revascularization TEChnique (VORTEC) application in peripheral femoro-popliteal polytetrafluoroethylene (PTFE) graft bypass in 13 patients.

Walking Performance and Health-related Quality of Life after Surgical or Endovascular Invasive versus Non-invasive Treatment for Intermittent Claudication – A Prospective Randomised Trial

Nordanstig J., Gelin J., Hensäter M., Taft C., Österberg K., Jivegård L. Eur J Vasc Endovasc Surg 2011;42:221-8.

Objectives: Despite limited scientific evidence for the effectiveness of invasive treatment for intermittent claudication (IC), revascularisation procedures for IC are increasingly often performed in Sweden. This randomised controlled trial compares the outcome after 2 years of primary invasive (INV) versus primary non-invasive (NON) treatment strategies in unselected IC patients.

Materials/Methods: Based on arterial duplex and clinical examination, IC patients were randomised to INV (endovascular and/or surgical, $n = 100$) or NON ($n = 101$). NON patients could request invasive treatment if they deteriorated during follow-up. Primary outcome was maximal walking performance (MWP) on graded treadmill test at 2 years and secondary outcomes included health-related quality of life (HRQL), assessed with Short Form (36) Health Survey (SF-36).

Results: MWP was not significantly ($p = 0.104$) improved in the INV versus the NON group. Two SF-36 physical subscales, Bodily Pain ($p < 0.01$) and Role Physical ($p < 0.05$) improved significantly more in the INV versus the NON group. There were 7% crossovers against the study protocol in the INV group.

Conclusions: Although invasive treatment did not show any significant advantage regarding MWP, the HRQL improvements associated with invasive treatment tentatively suggest secondary benefits of this regimen. On the other hand, a primary non-invasive treatment strategy seems to be accepted by most IC patients.

Influence of Use of a Vascular Closure Device on Incidence and Surgical Management of Access Site Complications after Percutaneous Interventions

Klocker J., Gratl A., Chemelli A., Moes N., Goebel G., Fraedrich G. Eur J Vasc Endovasc Surg 2011;42:231-6.

Aim: The study aimed to evaluate vascular access site complications (ASCs) after percutaneous interventions (PIs) in our institution for changes in annual incidence and surgical management after increased usage of a vascular closure device (VCD; in all cases: Angioseal™).

Material and Methods: All patients who underwent repair of arterial pseudo-aneurysms or access site stenosis/occlusion leading to leg ischaemia (LI) or new-onset disabling claudication (CI) after PIs between 2001 and 2008 were included. Annual rates of procedures and methods of repair of ASC were evaluated.

Results: After a total of 58 453 PIs, 352 patients (0.6%) were operated on for: pseudo-aneurysms ($n = 300$; 0.51%); and local stenosis/occlusion leading to LI/CI ($n = 52$; 0.09%). Numbers increased significantly with more widespread VCD use: group A (2001–2004: 2860 VCDs; 28 284 PIs; 10.1%): $n = 132$ (0.47%); and group B (2005–2008: 11,660 VCDs; 30,169 PIs; 38.6%): $n = 220$ (0.73%) ($p < 0.001$). In contrast to similar rates of pseudo-aneurysms (group A: $n = 124$; 0.44%; group B: $n = 176$; 0.58%; not significant), a significant increase of operations for local stenoses/occlusions was seen with widespread VCD use: $n = 8$ versus $n = 44$ ($p < 0.001$).

Conclusions: In the era of VCDs, complications are rare. However, use of these devices is not without complications, and may require complex reconstructions.

In Vivo Biological Effects of Foam Sclerotherapy

Hamel-Desnos C.M., Desnos P.R., Ferre B., Le Querrec A. Eur J Vasc Endovasc Surg 2011;42:239-46.

Objectives: This study aims to assess by biological markers the *in vivo* consequences of foam sclerotherapy (FS) of saphenous veins. The secondary objective of this randomised controlled trial (RCT) is to compare results of two randomised groups: with or without post-treatment compression.

Patients and methods: Forty patients with incompetent great or small saphenous veins underwent ultrasound-guided FS. Randomisation was conducted immediately after sclerotherapy to two parallel groups, one (CG) with compression stockings and the other (WCG) without compression.