ABSTRACTS BOOK
June 8-10, 2014

Radisson BLU Hotel Nice, France

MEET 2014 Course Directors
Max Amor
Patrice Bergeron
Piergiorgio Cao
Nicholas Cheshire
Eric Ducasse
Nicola Mangialardi

Scientific Committee
Hakim Benamer
Benjamin Faurie
Mario Lachat
Richard McWilliams
René Milleret
Claudio Rabbia
Sonia Ronchey
Peter Schneider
Gunnar Tepe
Isabelle Van Herzeele

Founding Directors
Max Amor
Patrice Bergeron

Honorary Directors
Luigi Inglese
Thomas Ischinger
Klaus Mathias
Dieter Raithel
COURSE DIRECTORS 2014
Max AMOR, Essey-les-Nancy, France
Patrice BERGERON, Marseille, France
Piergiorgio CAO, Rome, Italy
Nicholas CHESHIRE, London, United Kingdom
Eric DUCASSE, Bordeaux, France
Nicola MANGIALARDI, Rome, Italy

SCIENTIFIC COMMITTEE 2014
Hakim BENAMER, Aubervilliers, France
Benjamin FAURIE, Grenoble, France
Mario LACHAI, Zürich, Switzerland
Richard MCWILLIAMS, Liverpool, United Kingdom
René MILLERET, Montecelio, France
Claudio RABBIA, Torino, Italy
Sonia RONCHEY, Rome, Italy
Peter SCHNEIDER, Honolulu, USA
Gunnar TEPE, Rosenheim, Germany
Isabelle VAN HERZEELE, Gent, Belgium

FACULTY 2014
Flavio AIROLDI, Milan, Italy
Vladimir ALEXANDRESCU, Marche-En-Famenne, Belgium
Jean-Marc ALSAC, Paris, France
Max AMOR, Essey-les-Nancy, France
Takahisa AZUMA, Tokyo, Japan
Hakim BENAMER, Aubervilliers, France
Patrice BERGERON, Marseille, France
Jérôme BRUNET, Avignon, France
Clifford J. BUCKLEY, Temple, USA
Jacques BUSQUET, Saint-Cloud, France
Sante CAMILLI, Rome, Italy
Sylvain CHASIGNET, Nice, France
Laurent CHICHE, Paris, France
Phillippe COMMEAU, Ollioules, France
Gioachino COPPI, Modena, Italy
Jean-Paul DE VRIES, Nieuwegein, The Netherlands
Koen R. DELOOSE, Bourgoin-Jallieu, France
Jean-Luc GÉRARD, Créteil, France
Jean-Luc GILLET, Bourgoin-Jallieu, France
Yann GOUÉFFIC, Nantes, France

Alison W. HALLIDAY, London, United Kingdom
Olivier HARTUNG, Marseille, France
Réda HASSEN-KHODJA, Nice, France
L. Nelson HOPKINS, Suite Buffalo, USA
Emmanuel HOUARD, Paris, France
Luigi INGLESE, San Donato Milanese, Italy
Elïènè JEAN-BAPTISTE, Nice, France
Xiongjing JIANG, Beijing, China
Kiriaki KALLIGIANNI, Athens, Greece
Piotr KASPRZAK, Regensburg, Germany
Zvonimir KRAJACIC, Houston, USA
Julien LEMOINE, Essey-les-Nancy, France
Nicola MANGIALARDI, Rome, Italy
Armando MANSILHA, Porto, Portugal
Klaus MATHIASES, Hamburg, Germany
Richard McWILLIAMS, Liverpool, United Kingdom
Claude MIALHE, Monaco
René MILLERET, Pezenas, France
Piero MONTORSI, Milan, Italy
Stefan MÜLLER-HÜLSBECK, Flensburg, Germany
Furuzan NUMAN, Istanbul, Turkey
Fausto PASSARIELLO, Naples, Italy
Atul PATHAK, Toulouse, France
Michel PERRIN, Chassieu, France
Ivo PETROV, Sofia, Bulgaria
Paul PITIALLUGA, Nice, France
Bernard PRATE, Cannes, France
Thomas PROEBSTLE, Mannheim, Germany
Enrique PURAS MALLAGRAY, Madrid, Spain
Claudio RABBIA, Torino, Italy
Zoran RANCIC, Zürich, Switzerland
Donald B. REID, Wishaw, Scotland
Timothy RESCH, Malmö, Sweden
Sonia RONCHEY, Rome, Italy
Natzi SAKALIHASAN, Limassol, Belgium
Antoine SAUGUET, Toulouse, France
Peter SCHNEIDER, Honolulu, USA
Francesco SETacci, Rome, Italy
Gunnar TEPE, Rosenheim, Germany
Jörg TESSAREK, Münster, Germany
Matthew THOMPSON, London, United Kingdom
Giovanni TORSELLO, Münster, Germany
Jos VAN DEN BERG, Lugano, Switzerland
Isabelle VAN HERZEELE, Gent, Belgium
Fabio VERZINI, Perugia, Italy
David WRIGHT, London, United Kingdom
VENOUS SESSION. Tumescent less saphenous ablation
Lafoss: laser and foam

J-L. Gillet
Vascular Medicine and Phlebology, Bourgoin-Jallieu, France

Laser assisted foam sclerotherapy: the Lafoss technique
Foam sclerotherapy is an effective treatment of saphenous varicose veins. However, controversial data are present in literature for veins with a diameter of the saphenous trunk exceeding 8 to 10 mm: poor outcome is expected. The recent European Guidelines for sclerotherapy recommend limiting the injected volume of foam, with a maximum of 10mL of foam per session in routine cases.

Indication: The LAFOS technique is a new approach in the treatment of large (saphenous trunk > 0.8 cm) incompetent great (GVS) and small (SSV) saphenous veins.

METHOD
The Sclerolux Holmium laser Ho:HAG 2100nm is the only laser able to reduce the diameter of the vein with no damage to the endothelium, before performing foam sclerotherapy. The Holmium laser leads to an immediate and significant reduction of the vein diameter (1st step) transforming the large vessel in a smaller one that can be treated with better chance of success with a limited volume of sclerosing foam (2nd step). This technique is an in-office procedure. No tumescent anesthesia is required.

Description of the procedure (echo-guided):
1. Access vein with a short catheter (17 ñ 18G).
2. Insert optical fiber into the vein through the catheter.
3. Carefully check the position of the fiber inside the vein.
4. Perform shrinkage of the vein by delivering light energy with a pulsed Ho:HAG holmium laser (5 W max average power with max 500mJ per pulse). There is shrinkage of the collagen fibers of the media with no damage of the intima.
5. Remove the fiber from the catheter.
6. Inject a relatively small volume of sclerosing foam through the same catheter. On average: GVS: 5-6 mL of polidocanol 3% foam SSV: 2-3 mL of polidocanol 2% foam.
7. Patient can walk immediately after the procedure, wearing compression stocking.

Preliminary results (Frullini A et al. Phlébologie (French) 2013; 66: 51-54) 50 patients were enrolled in a pilot study to assess feasibility and tolerance of this new procedure. A complete occlusion was observed in all patients at one-month follow-up. No complication was reported.

Personal experience At 6 months and 1 year, the clinical results remained excellent. We observed no complication. In some patients a small recanalization (2-3 mm) was observed and was easily treated with a direct injection of sclerosing foam (closed needle technique).

CONCLUSION
The immediate reduction of the vein caliber makes possible treatment of large veins with low volume of sclerosing foam. The LAFO technique could represent a true enhance of foam sclerotherapy of very large veins, allowing better immediate occlusion rate and possibly better late outcome.
VENOUS SESSION. Preservation of saphenous trunks
Office Based Chiva

F Passariello
Centre Diagnostico Aquarius, Napoli, Italy

INTRODUCTION
The cure 1Conservatrice Hémodynamique de l’Insuffisance Veineuse en Ambulatoire (CHIVA) can be office based. The
Office Based CHIVA (OB CHIVA) is aimed at transferring CHI
VA procedures to specialists rooms. OB CHIVA is a systematic
organization of the working environment, in order to reduce to
a minimum the required resources without any change in
security1. The use of less invasive methods will be a chance
for non-surgical phlebologists to choose endovenous con
servative procedures other than ablative ones.

THE CROSSOTOMY
In contraposition to the traditional crosscotomy, CHIVA cross
cotomy is a bluntligation of the SFJ respecting all the tributary
of the arch. OB CHIVA uses instead the Riobamba Draining
Crossotomy (RDC), where Riobamba is the town in Ecuador
where the RDC was firstly performed. The RDC respects one
of the main tributary of the arch, using them as washing vessels
of the sapheno-femoral junction (SFJ). A limited treatment of
the arch is performed and tailored in length using an endo
venous procedure till the confluence or one or more draining
tributaries of the trunk. Draining vessels have the aim of pre
serving the GSV trunk. (Fig 1) 2

THE DIAGNOSTIC ALGORITHM
A simplified diagnostic algorithm allows an essential ultra
sound examination of the venous net following a schematic
and easily readable algorithm which guides the therapeutic
choices. (Fig 2) The overall diagnostic procedure generally
assumes a few minutes and requires a quick answer to three
simple questions: 1. Is the terminal valve competent/incompetent ?
2. Is the reflux confined to the GSV or deviated instead to
other tributaries? 3. Is the terminal valve competent/incom
petent ? Performing a more complex analysis of the patient venous network, the
veno-venous shunts can be detected. The SFJ RDC treat
ment interrupts only some of these shunts, though the com
prehension of this analysis requires a greater knowledge of
venous hemodynamics. A frequent follow-up is suggested in
order to determine the effects of therapy and the possible
evolution of the venous disease.

INDICATIONS AND CONTRA-INDICATIONS
The indications to the OB CHIVA procedures are the relative
contra-indications to the surgical crossotomy. Local condi
tions like extreme obesity and general conditions too (co
agulation diseases, epatopathies, cardiopathies, ...) where
office based procedures are useful also to reduce the time of
the intervention. There is no real contra-indication, though
some difficulties could be experimented treating mainly the
isolated ShIII when the devalvulation is difficult to perform,
owing to a very hypoplastic peripheral GSV trunk.

INTERVENTIONS
Actually only a limited and anecdotal experience is avail
able. 13 cases were treated. 6M, 7F, aged 47.9 +/- 15.2 yo (32-78yrs), 70.7 +/- 11.2 lbs. Clinical class was mainly C2 (C1 0,
C2 10, C3 0, C4 2, C5 0, C6 1). The height of the groin was
74.5 +/- 6.1 cm, the height of the first re-entry perforator
36.3 +/- 14.2 cm. The mid-thigh GSV calibre 7.4 +/- 3.2 mm.
The number of washing vessels 2.5 +/- 1.1. Maximum washing
calibre 3.3 +/- 1.7 mm. Number of draining vessels 1.9 +/- 0.7.
Maximum draining calibre 2.1 +/- 0.5 mm. As to procedures,
Laser was mainly used, 12 808nm power 14w LEED 140 J/cm
and 1 1470nm power 6w LEED 60 J/cm. The used pullback
speed was always 0.1 cm/s. Phlebectomies were associat
ed in 8 cases, while foam ultrasound guided sclerotherapy
(FUGS) in 5 cases. The planned strategy did not match often
the effected treatment. GSV length to be treated was 7.7
+/- 3.6 cm, while the effectively treated GSV length was 6.8
+/- 5.3 cm. This difference is due to errors in the pre-treat
ment measures, which should also take glue as a minimum
length. The difference between linear echo measures and LASER
 fibre length. The fibre generally follows the curve of the vein
and can adhere to the venous wall, also changing the side, thus
it is often not positioned in the centre of the vein.

FOLLOW UP
IMMEDIATE FOLLOW-UP
The immediate follow-up (1-3 days) is available in all cases and
shows good clinical results in the 100% (13/13) of cases, while
washing and draining were satisfying in 92% (12/13) of cases.
Reflex was absent in 0/13 (0%) of cases, but complete incompetence
in only 8% (1/13) of cases. Reflex was ascribed to an insufficient administered energy in 2 cases,
while in 1 case it was a very light reflex due to the mild incom
petence of an arch tributary, used as a washing vessel. One
additional case (14 cases in total) was treated with a FUGS
RDC of the shorter saphenous vein (GSV) with good clinical
and hemodynamic (closure) immediate result.

LONG TERM FOLLOW-UP
Though only an anecdotal experience is at the moment available,
the procedures provide some useful suggestions. Only 4 patients, including the FUGS SSV treatment had a long
term observation. In all examined cases (4/4 100%) clinical
conditions were functionally satisfying, while only 2/4 com
plained about aesthetic results. One of them complained for
matting after FUGS at 1y. 3y and 4y, while the other one for
residual tributary varicosities with aesthetic impairment at
5y. No change at 1y was recorded in the case of complete re
canalization at 3d, but in an unexplainable way clinical condi
tions markedly improved from C6 to C5 at 1y (complete
healing of 2 ulcers and ankle circumference decrease of 1
cm). As already remarked, since the beginning, it appeared
clear that due to technical problems the administered LASER
energy was insufficient. The SSV FUGS case had also a symp
omaic pelvic shunt which was not treated at all. After 1y,3y
and 4y she still complained for the persistence of the pelvic
symptoms, while only a partial refluxing re-canalization was
detected by Doppler at 4y with no important hemodynamic
impairment. The last case is a GSV Riobamba LASER draining
channel (RiDLC) planned to be performed washing vessels and
observed with a follow-up at 5y, showing the

complete closure of the GSV arch below a small 3rd tributary.
The closure can be described in X-Paste terminology by the
0,001107 decimal code3. The 2nd tributary however is lightly
incompetent and jumps the GSV closure. Transmitting below a
low intensity reflux and feeding only some atherothromb
us veins in the leg, as it was already reported before. GSV is
still totally occluded for 9.5 cm and a partial closure is present
distally for a total of 15 cm, GSV being therefore patent for a
great part of its length. Apart from the peripheral light reflux
jump, this case represents then a good example of long term
closure.

DISCUSSION
Though data are very fragmentary and incomplete, some
preliminary conclusions can be drawn. Re-canalization is of
course an undesirable surgical result. However a light re
canalization in LASER and FUGS is not considered absolutely a
failure, especially when the patient is not concerned. With this idea in mind and limiting this remark to re-canali
zation, OB CHIVA endovenous procedures should be com
pared to corresponding ablative ones and not to surgical
methods. Data are not sufficient for a reliable analysis, but
it could be concluded that the greater the number of the washing vessels, the greater the probability of having a
jumping and refluxing parallel channel. As the strategy isn’t
still well known, it could be useful to reduce the procedure
to a planned minimum, delaying phlebectomies and FUGS
to a second moment. The evolution of the intervention can
exhibit unexplainable improvements, which could otherwise
be masked associating several procedures. In procedure re
ports the preference should be given to measured param
eters instead of the computed ones, as these could be un
reliable depending on unregistered variations of procedure
details. The pattern of the working environment should be
modified as much as possible in order to increase our knowledge of the GSV/SSV
stump evolution. In the same way, X-PASTE can describe also
the distal behavioural. Finally, it could be interesting to record the length of the patient GSV, i.e. not involved in the saph
enous closure, in order to measure the re-usability of the trunk
for any useful future use.

THE OB CHIVA PROTOCOL
A clinical protocol was designed in order to simplify diagnos
tic and therapeutic procedures. An OB CHIVA register is ac
ually available to gather cases performed by other groups
and, apart of privacy protected data, it is freely accessible
to everyone on a specialized website 5.

CONCLUSIONS
Though the OB CHIVA experience is at the moment prelimi
nary and anecdotal, OB CHIVA seems a promising strategy
and a simplified organization of CHIVA therapy in a more friendly
environment.
VENOUS SESSION. Preservation of saphenous trunks
External Valvuloplasty

S. Camilli, D. Camilli
Private Practice, Roma, Italy

INTRODUCTION
The strategy for the treatment of varicose veins (VVs) of the lower limbs is mainly based on the ablation of the greater saphenous vein (GSV) by stripping or intravenous thermal ablative techniques. Recent RCTs show that any ablative technique involves a remarkable varicose recurrences at 5 years [1-3]. Some other RCTs considered the conservative strategy (CHIVA) vs. the ablative ones: at more than 5 years follow-up, the CHIVA series showed results of about 50% better than ablative in terms of relapsing veins [1-3]. Since a weak point of the CHIVA strategy is the sapheno-femoral junction (SFJ) ligation/disconnection, a technique that allows the SFJ viability should further reduce the VVs recurrence after GSV sparing procedures. The report shows the technique and results of the SFJ stretching valvuloplasty (SV) combined with GSV sparing procedures.

MATERIAL AND METHOD
A cumulative personal experience of 45 operations of SFJ stretching valvuloplasty (SV) is presented. In case of incompetent SFJ with US-visible valve and floating cusps, an oval shaped external support (OSES) was placed around the valve to be repaired and was sutured to the apex of the opposite inter-commissural walls. In so doing it stretches the inter-commissural diameter and consequently reduces the lossing of the valve cusps and finally it restores the SFJ competence thus regaining the valve function [4].

42 SV operations have been performed using OSES device (SV-OSES) for primary VVs (pVVs) and 3 operations for secondary VVs (sVVs). In all cases the incompetence tributaries were also treated by hemodynamic selective disconnection (CHIVA strategy) or stab ablation (Muller technique) or US-guided foam sclerotherapy.

RESULTS
At 5 years follow-up on 21 out of 42 cases with pVVs, the Duplex scanning showed the SFJ full competence in 16, while moderate reflux in 3 and failure in 2 cases were shown. 12 pts had a repeated foam sclerosis or VVs stab avulsion. On the 3 cases with sVVs, all resulted in a regained SFJ competence at 20th, 16th and 3rd month follow-up, respectively. None of 24 cases had GSV ablation until now; all patients declared a QoL improvement and CEAP class lowering.

CONCLUSIONS
The SV-OSES operation is a GSV sparing technique in primary and secondary VVs. The strategy combining SFJ valvuloplasty with GSVs trunk preservation procedures promises to slow down and to decrease the recurrencies, both in pVVs and sVVs, and finally to give better results than ablative ones at late FU. A wider and multicentre clinical experience on SV-OSES is needed and a more conservative culture in VVs treatment is suggested.

References

VENOUS SESSION. Preservation of saphenous trunks
External Valvuloplasty

S. Camilli, D. Camilli
Private Practice, Roma, Italy

INTRODUCTION
The strategy for the treatment of varicose veins (VVs) of the lower limbs is mainly based on the ablation of the greater saphenous vein (GSV) by stripping or intravenous thermal ablative techniques. Recent RCTs show that any ablative technique involves a remarkable varicose recurrences at 5 years [1-3]. Some other RCTs considered the conservative strategy (CHIVA) vs. the ablative ones: at more than 5 years follow-up, the CHIVA series showed results of about 50% better than ablative in terms of relapsing veins [1-3]. Since a weak point of the CHIVA strategy is the sapheno-femoral junction (SFJ) ligation/disconnection, a technique that allows the SFJ viability should further reduce the VVs recurrence after GSV sparing procedures. The report shows the technique and results of the SFJ stretching valvuloplasty (SV) combined with GSV sparing procedures.

MATERIAL AND METHOD
A cumulative personal experience of 45 operations of SFJ stretching valvuloplasty (SV) is presented. In case of incompetent SFJ with US-visible valve and floating cusps, an oval shaped external support (OSES) was placed around the valve to be repaired and was sutured to the apex of the opposite inter-commissural walls. In so doing it stretches the inter-commissural diameter and consequently reduces the lossing of the valve cusps and finally it restores the SFJ competence thus regaining the valve function [4].

42 SV operations have been performed using OSES device (SV-OSES) for primary VVs (pVVs) and 3 operations for secondary VVs (sVVs). In all cases the incompetence tributaries were also treated by hemodynamic selective disconnection (CHIVA strategy) or stab ablation (Muller technique) or US-guided foam sclerotherapy.

RESULTS
At 5 years follow-up on 21 out of 42 cases with pVVs, the Duplex scanning showed the SFJ full competence in 16, while moderate reflux in 3 and failure in 2 cases were shown. 12 pts had a repeated foam sclerosis or VVs stab avulsion. On the 3 cases with sVVs, all resulted in a regained SFJ competence at 20th, 16th and 3rd month follow-up, respectively. None of 24 cases had GSV ablation until now; all patients declared a QoL improvement and CEAP class lowering.

CONCLUSIONS
The SV-OSES operation is a GSV sparing technique in primary and secondary VVs. The strategy combining SFJ valvuloplasty with GSVs trunk preservation procedures promises to slow down and to decrease the recurrencies, both in pVVs and sVVs, and finally to give better results than ablative ones at late FU. A wider and multicentre clinical experience on SV-OSES is needed and a more conservative culture in VVs treatment is suggested.

References
VENOUS SESSION. New trends
Iliac vein’s stenting in pelvic congestion syndromes

O. Hartung
Service de Chirurgie Vasculaire, CHU Nord, Marseille, France

Pelvic congestion syndrome (PCS) is mainly due to reflux into ovarian veins or branches of the internal iliac veins. Ilio-cava obstrucive disease can also cause PCS and we herein report our experience with stenting in women presenting PCS.

MATERIAL AND METHODS
All patients admitted in our department for the treatment of chronic obstructive lesions of the iliac veins had clinical examination looking for PCS symptoms. Duplex-scan and CT or MRV were performed in all patients. In case of suspected nutcracker syndrome (NCS) or left ovarian vein (LOV) incom, a phlebography was performed with evaluation of the reno-caval gradient. The procedure was performed through percutaneous approach under local anesthesia plus sedation to deploy self-expanding stents.

RESULT
83 patients were suffering from PCS but 14 which had an associated NCS were excluded. 69 women (median age 42 years) were included in the study. All were suffering from PCS. Lower limbs symptoms were present in 59 cases. The etiology of the obstructive lesion was primary in 59 cases and secondary in 10 cases. 15 patients had associated LOV reflux. Technical success rate was 100%. Left ovarian vein embolization was performed during the same procedure in 15 cases. No periprocedural complications occurred and the median length of stay was 1 day (range 1-4). Median follow-up was 32 months (range 1-150). 3 restenosis occurred at 2, 4 and 8 months; one was treated by in-stent balloon angioplasty and 2 by additional stenting. Primary and assisted primary patency rates were respectively 96% and 100% at 5 and 10 years. Three patients needed subsequent embolization that improved them. All patients but 5 were significantly improved (31 were asymptomatic regarding PCS).

CONCLUSION
Pelvic congestion syndrome is rarely due to ilio-cava obstrucive disease. It can be treated by venous stenting safely and with good clinical results.
Thoracic branch stent grafts complications
Hybrid repair

C. Ferrer
Vascular Surgery, San Camillo Forlanini Hospital, Rome, Italy

Open repair of thoracoabdominal aortic aneurysms is associated with significant morbidity and mortality. The need for a hybrid approach is based on the reduced operative stress approaching only the abdominal cavity, which may reduce complications and improve outcome. Hybrid approach allows, by surgical visceral debranching, the distal fixation for endovascular stent graft. When thoracic endovascular aneurysm repair became available in 2005, there was much enthusiasm for this hybrid technique in order to extend the repair also for high risk patients with TAAA. Even if hybrid approach to TAAA may be advantageous in selected population of patients who are considered at high risk for open TAAA repair, most series report similar perioperative morbidity and mortality if compared to open series. Furthermore, with the continuous improvement of branched and fenestrated stent graft technology, the hybrid approach might be considered outdated. In addition, the safety, effectiveness, and long-term performance cannot yet be established, and lifelong follow-up must be taken into account to assess the ongoing patency of the grafts.

References

Thoracic branch stent grafts complications
Fenestrated devices (custom and homemade)

T. Azuma
Tokyo Women’s Medical University, Tokyo, Japan

OBJECTIVE
Short- and mid-term data regarding the use of pre-curved, fenestrated endografts have shown that the devices are both safe and effective in carefully selected patients. The first generation of the product was limited to patients with proximal landing zones of more than 20 mm. The next generation of these endografts has been refined to enable treatment of patients with shorter proximal seal zones (<20 mm), using smaller fenestrations and a greater diversity of skeletons. We reviewed the clinical studies involving the next-generation product and analysed the morphological characteristics of aortic arch aneurysms that were successfully treated.

METHODS
Next-generation endografts were used to treat 393 patients with aortic arch aneurysms, at 35 medical institutions during 2010 and 2011. There were 371 (94%) patients with sealing zones <20 mm, and 244 (62%) patients with sealing zones <15 mm. The proximal sealing length was 20±35 mm (14.2 ± 5.1 mm).

RESULTS
Technical success was achieved in 390 patients (99.2%). Of the treated patient population, 6 patients died, 7 experienced strokes, and 17 were subsequently identified to have type I endoleaks. In cases with proximal landing zones <15 mm, the aneurysm was more likely to develop an endoleak. The proximal sealing zones (11 ± 12 mm vs. 9 ± 13 mm) were not significantly associated with the development of endoleaks, but the proximal aortic diameters were (34.0 ± 13.3 mm vs. 36.6 ± 6.3 mm; P < 0.01), in the univariate analysis. In the discriminant analysis, the maximum length of the aneurysm was the only factor that was predictive of type I endoleaks (73 ± 55 mm vs. 97 ± 59 mm; P < 0.001).

CONCLUSION
The next generation of pre-curved, fenestrated endografts show promise as devices for aortic arch aneurysms with less than a 15-mm proximal sealing zone. These devices have a significant advantage in cases where the landing zone has a short neck. However, more refinement is necessary to prevent type I endoleaks, so that these devices can be used with aortic vessels with large proximal diameters and large aneurysms.
New developments in carotid stenting
Taped Live CAS with Direct Carotid Approach using Silk Road Flow Reversal

N. Hopkins
Suite Buffalo, USA

CASE REPORTS AND VIDEOS WITH MCQ
73-year old male with multiple comorbidities: CAD, CABG, DM II. Work up for syncope revealed asymptomatic 85% right ICA stenosis. Poor candidate for CEA due an endomorphic body habitus and a lesion that extends well up into C2 and Poor candidate for transfemoral CAS due to tortuous access with Type II aortic arch and CCA tortuosity. The Direct Carotid (Silk Road) approach with flow reversal employs a small surgical exposure of the Common Carotid Artery above the clavicle, insertion of short sheath and flow arrest and reversal through a filter into the femoral vein during stent placement.
New developments in carotid stenting
CAS 2014: Where are we for asymptomatic patients?

A. Halliday
University of Oxford, Oxford, United Kingdom

ACST-2 is one of the largest trials ever conducted to compare carotid artery stenting (CAS) with carotid endarterectomy (CEA). By April 2014 over 1,450 patients had been recruited from 100 mostly European centres. Patients with severe asymptomatic carotid stenosis requiring revascularization are entered into ACST-2 when CEA & CAS are both possible, but where there is uncertainty as to which is procedure is more appropriate. In April 2014, verified data was available on 1,330 randomised patients (912 men, 418 women) whose median age was 72 years (SD +/- 8.1). 31% patients were diabetic, most (96%) had ipsilateral stenosis of 70-99% (median 80%) with a contralateral stenosis of 50-99% in 30% patients and contralateral occlusion in 8%. Patients were on appropriate medical treatment at randomisation and at 1-month follow-up (86% anti-hypertensive, 84% lipid lowering, 96% anti-thrombotic) though, as expected patients having CAS were more likely to take dual anti-platelet therapy for at least a month after the procedure. The mean time from randomisation until procedure was 24 days and patients had a mean follow-up of 1.6 person years. At follow-up, 2% patients had crossed over to the non-allocated procedure. Annual yearly follow-ups show that patients continue to take good medical treatment with detailed recording of numbers and types of medication. At the Trials Data Monitoring Committee Meeting in April 2014, blinded combined interim results for 30-day mortality and major morbidity were reported. For 1,045 patients undergoing intervention with at least 1 month follow-up and Rankin Scoring at 6 months for any stroke, the overall serious cardiovascular event rate of peri-procedural (within 30 days) disabling stroke, fatal myocardial infarction and death was 1.0%. This compares favourably with results from ACST-1, with a peri-operative risk of 1.7%. ACST-2 plans to recruit several thousand patients, with follow-up for a minimum of 5 years, enabling us to determine any important differences between the procedures and, for some subgroups, information on those who may particularly benefit from one procedure or the other.

New developments in carotid stenting
Asymptomatic carotid stenoses should be treated

C. Buckley
Baylor Scott & White Health Care and Central Texas Veterans Health Care System, Temple, United States

Should asymptomatic carotid stenosis be treated? The answer, from a conservative vascular surgeon, is “yes”. The real questions should be: what are the indications for treatment; when do you treat; and what treatment methods are available—best medical therapy, endarterectomy or angioplasty and stent.

Current practice management for carotid stenosis is based on 30+ year old clinical trials comparing available medical management to carotid endarterectomy (CEA). Two of the more widely quoted trials are NACET—a randomized trial from 1981 – 1994 looking at symptomatic (70%-99%) carotid stenosis and ACAS – 1983 – 2003 - enrolling subjects in a randomized asymptomatic (50%-99%) trial. Historically, medical management for carotid disease included risk factor modification plus aspirin; no statin or current antiplatelet therapies and no modern agents for managing comorbidities. Results of this form of therapy showed a 3% per year prevention benefit from CEA and a 0.5% stroke / death risk at 30 days in the symptomatic group. In the asymptomatic group, there was a 0.5% - 1% per year benefit from CEA and a 3.5% stroke / death risk at 30 days. In today’s practice, medical management of co-morbidities and risk factors has dramatically improved with the incidence of stroke progressively declining to 0.5% per year. In the CREST Trial, CEA outcomes improved the stroke and/or death rate to 4.7% in the symptomatic group and 2.7% or less in the asymptomatic group. Carotid stenting (CAS) outcomes showed the stroke and/or death rate in the symptomatic group as 6.4% and 4.5% in the asymptomatic group. There is no benefit or level I or II evidence to support screening risk stratified populations with Duplex Carotid Imaging. The best overall therapy, in patients with asymptomatic carotid disease, is aggressive medical management with statins, antiplatelet agents, and optimal risk factor control and treatment of comorbidities.
New developments in carotid stenting
Case reports and videos with MCQ
A safe cervical access for CAS using US guidance and closing device

P. Bergeron
Marseille, France

PURPOSE
To describe a safe approach for direct percutaneous carotid access for carotid angioplasty and stenting (CAS) in order to reduce the risk of stroke from debris embolization that can occur during catheter manipulation in the aortic arch during femoral access.

TECHNIQUE
An ultrasound-guided, direct micropuncture of the common carotid artery (CCA) is performed for CAS and followed by the use of a closing device to avoid bleeding complications.

CONCLUSION
This approach has a low rate of neurologic and access site complications. Our experience suggests that, with percutaneous direct carotid access, the indications for CAS could be expanded to include difficult anatomies and high-risk patients, and certain emergent situations that warrant easy and rapid access to the common carotid artery.

EVAR challenges: follow-up, endoleaks and complications
Debate
If you don’t have an effective follow-up program, don’t do EVAR

M. Thompson
St Georges, London, United Kingdom

EVAR is associated with a specific range of late endograft-related complications. Surveillance is considered mandatory because if these complications are not identified and managed appropriately, aneurysm reperfusion can result in late rupture and mortality.

A significant minority of patients require re-intervention after EVAR. All patients should continue to undergo surveillance after EVAR but that the frequency of surveillance should be greatest in those predicted to be at highest risk of endograft complications.

The need for surveillance after EVAR is determined by the incidence of endograft complications, which has been previously summarized in a systematic review of the literature. The re-intervention rate at 5 years was demonstrated to be 18.5 percent.

The study also demonstrated that the requirement for secondary interventions after EVAR continued through the lifetime of the graft.

Combined re-intervention-free survival estimates were found to demonstrate a linear progression with 89.9 percent, 86.9 percent and 81.5 percent of grafts requiring no secondary intervention at two, three and five years respectively. Overall, almost one in five patients will require re-intervention within five years of EVAR, highlighting the essential role of surveillance in some form.

The risk of developing endograft complications after EVAR may not be homogenous, and evidence suggests that individual patients may have predictably greater or lesser risk of long-term endograft failure. The ability to characterize a subgroup of patients at high risk of endograft complications might allow surveillance to be targeted. Evidence has increasingly suggested that endograft complications are related to aortic morphology rather than physiology or comorbidity.

To conclude, there is no system at present which allows stratification of patients that require no surveillance, which therefore remains mandatory.
Endovascular repair of abdominal aortic aneurysm (EVAR) has shown significant advantages if compared with open repair (CR), especially in perioperative period, but specific complications such as endoleak and migration, may negatively affect the long-term durability of endovascular approach. Aortic neck dilatation (AND) was identified in published literature as a predictor of migration, type I endoleak and reintervention. The continuous dilatation of the infrarenal aortic segments is observed in healthy people as consequence of ageing, as well as in surveilled population with small AAA or in patients undergoing CR or EVAR for AAA. Several authors investigated proximal neck modifications after abdominal aortic intervention. What we learned from literature is that AND is common after CR and EVAR with an incidence rate from 19% to 43% and 13% to 59% respectively. On the other hand, the heterogeneity of studies about AND in terms of numbers of patients, duration of follow-up and neck measurement, makes data interpretation difficult. Several hypotheses have been advanced regarding the pathogenesis of AND after EVAR as well as the presence of any predicting factors. The structural reaction of the aortic wall to the stentgraft is unclear, and the role of oversizing or suprarenal fixation in AND pathogenesis has never been confirmed. All these data support the hypothesis that continuous AND is rather a perpetuation of the aneurysmal disease process than related to specific interactions of different types of stentgraft with the aortic wall.

References

EVAR challenges: follow-up, endoleaks and complications
Enlargement of the proximal neck

C. Ferrer
Vascular Surgery, San Camillo Forlanini Hospital, Rome, Italy
EVAR challenges: follow-up, endoleaks and complications
Infected stent-grafts
Conservative, endovascular relining or conversion

L. Chiche, J. Gaudric, C. Jouhannet, T. Khalife, C. Goulffer, E. Koskas
CHU Pitié-Salpêtrière, Paris, France

As the indications and use of EVAR expand, the number of patients presenting with an infected stent-graft increases. Although rare, this potentially devastating complication may be under-recognized. Stent-graft infection should be suspected in patients who present with clinical signs of acute or chronic infection or with radiological signs such as fluid or aeric collection surrounding the stent-graft. Sac expansion without evidence of endoleak is also possible.

The management of aortic stent-graft infection depends on the patient’s clinical status, the presence of sepsis, the patient’s comorbidities and the microorganisms involved. Theoretically, eradication of infection implies complete explanta-

tion of the prosthetic graft and in situ or extra-anatomic revascularization. Endovascular relining might only be used as a bridge therapy in case of life-threatening aortoiliac rupture. Poor-risk patients, who probably represent up to 60% of cases, might benefit from conservative treatment, which variably associates systemic or local antibiotherapy sometimes combined with percutaneous or surgical drainage of infected collections and tissues. Indications, technical modalities and specific outcomes of these three options will be discussed based on the author’s experience and on literature findings.
**BTK and CLI: how to succeed?**

Developing concepts

What do we really know about pedal angiosomes? When is the collateral circulation adequate to heal the foot through indirect revascularization and how do we know when we have done enough?

**V.A. Alexandrescu**

Princess Paola Hospital, Marche-en-Famenne, Belgium

Since its first anatomical description made by Taylor in 1987, 1 the Angiosome model gradually acquired new therapeutic perspectives in several surgical disciplines. For contemporary revascularization techniques, this theory adds new insights in evaluating and restoring arterial blood flow in specific «wound-oriented» areas. 2-7 The main six angiosomes of the lower leg were previously detailed and will not be listed in this synopsis. Recent clinical observation in CLI refines Pedial Angiosomes utilization by studying both, their morphological and physiological implications in revascularization and wound recovery, in a dynamic perspective. 8

From a structural point of view, the inferior limb arteries were divided in several ranks of macro- and microcirculatory sequences. 2, 3 In this categorization, the main angiosomes arteries and their appended large collaterals (around 1mm diameter including the foot arches and the metatarsal perforators) could be assimilated into the same rank (the 3rd), separately from the medium-sized and small collaterals (0.5 mm, the 4th level) and apart from the arterioles (the 5th) and the capillaries (the 6th stage), respectively. 2, 3

From a physiological perspective, the same 3D Angiosomes (gathering the skin and underlying tissue) are subject to several flow redistribution phases. These stages can be designated as initial (minutes), early (hours) and refracted (days to weeks) steps of collateral reperfusion. 4, 5, 6, 9 How can we evaluate the genuine capacities of each collateral pattern as to effectively assist indirect revascularization? What threshold of perfusion could be recognized as to predict correct wound healing? Our interventional group shares the presumption that, only a group of complementary exams may appropriately explore the whole of the macro and the microcirculatory collateral perfusion in a dynamic evaluation. 4, 5 Considering the perioperative evaluation (the early redistribution period): a) The macrocirculation assessment: By using «on table» angiography (that allows maximal spatial resolution and detection of > 500 micrometers-diameter collaterals), coupled to the «Indocyanine green» angiography (ICGA), useful information on each wound-related «large to small» collateral patterns could be acquired. 3, 10 b) Concerning the microcirculation: Real time skin perfusion pressure (SPP). 11, 12, 13, 14, 15 coupled to the tissue oxygen saturation (StO2) and/or the postoperative transcutaneous oxygen pressure (TcpO2), may complete skin perfusion evaluation around the ischemic ulcer.

Focusing the delayed reperfusion period (the arteriogenesi and angiogenesis processes in specific angiosomes), the utilization of (99m) Tc Scintigraphy, the PET and the SPECT scan assessment were equally described. 16

In conclusion, despite soaring technologies conceived for tissue perfusion evaluation, no method alone has proven so far enough reliability as to predict regular tissue healing following indirect revascularization.

**References**

BTK and CLI: how to succeed?
New tools
Bifurcated BTK stents: when and how to do it

G. Coppi, R. Stilingardi, A.Lauricella
Department of Vascular Surgery, Nuovo Ospedale Civile Sant’Agostino - Estense Baggiovara, University of Modena and Reggio Emilia, Italy

The results associated with percutaneous transluminal angioplasty (PTA) of the tibial arteries have by now matured. PTA/stenting is beginning to obtain consensus in selected cases. However, in ostial lesions of the popliteal and fibro-peroneal bifurcations the use of PTA with or without stenting risk to jeopardise at least one of the treated arterial zones while the concept of angiosome tells us that at least in the extended lesions of feet the recovery could by improved by a recanalisation of two vessels.

On the other hand, like at the level of coronary arteries the possible evolution of atherosclerosis in the long term in one vessel can by compensate with the maintenance of sufficient perfusion of the second vessel. For this purpose we have used the bifurcated stent Nile Croco (Minvasys, Genevilliers, France) proposed first for the coronary arteries. The advantage is the easy use and the tapered shape of the balloon of the send branch and the possibility to place the first stent and after the adjunctive stents in the distal vessel only if needed. The approach can be obtained with a 4 F. introducer and 0.14 double guide wire without real risk of troublesome problems.

We have treated with Nile Croco 23 cases from 2006 to 2009 obtained satisfactory results and the succes was confirmed in the subsequent period.

And to day this is the usual procedure in case of lesions at the artery biforication of below the knee arteries.

Choosing covered stents
History of covered stents for small and medium size vessels

L. Inglese
San Donato Milanese, Italy

The practice of coronary and peripheral interventions has been plagued by risk of vessel rupture requiring in most cases an urgent surgical repair. With the advent of bare metal stents the risk was persisting. Moreover with BMS the presence of discrete aneurysm lesions and the protrusion through stents struts of soft plaque or thrombus could not be overcome. To address all of these problems, homemade attempts in resuing a vessel rupture, either iatrogenic or post traumatic were conducted sewing a PTFE or Dacron tissue on a BMS (Palmaz Stent). In the early 90’ a Swedish Company, Jomed from Helsingfors developed for coronary and peripheral use a sandwich covered stent: the Jomed stent graft that after deployment and histological studies in pigs was first implanted in 1992 in a saphenous vein graft aneurysm. In the same years an 8 mm stent graft was implanted in an ICA for a soft plaque critical stenosis. Control at 8 yrs. showed persistent good patency. All these stent grafts were balloon expandable covered stents. At the same time Gore (Flagstaff, USA) developed a self-expanding stent for medium size vessels with a nitinol skeleton embedded in a PTFE fabric called Hemoban. Release of the stent was obtained by a pull off mechanism with automatic self-expansion, thanks to the nitinol frame. In the beginning some caused problems, overcome later in the amelioration of the product.
Choosing covered stents
World clinical experience with TriVascular a Ovation system

Z.R Krajcer
Texas Heart Institute, Houston, United States

The Ovation Prime system is FDA-approved to treat the widest range of anatomies with an innovative, less invasive, clinically proven solution for endovascular abdominal aortic aneurysm repair (EVAR). At 14F, the ultra-low profile system enables smooth access to the aneurysm. Low permeability PTFE enables effective aneurysm exclusion and device patency. Staged deployment of suprarenal stent allows simple and precise placement. Polymer-filled sealing ring creates a custom seal and protects the aortic neck. Conformable, kink resistant iliac limbs are designed to reduce risk of occlusion. The Ovation Global Pivotal Study was carried on in Chile, Germany, and USA in 161 patients (pts). The technical success, freedom from rupture, freedom from open repair, freedom from type I/II endoleak, freedom from migration and freedom from iliac limb occlusion was 100% at 2 years of follow-up. Freedom from aneurysm enlargement at one year was 99.1%. As of July 31, 2013, almost 2,000 patients had been treated with the Ovation and Ovation Prime worldwide with similar results as reported in the pivotal trial and post-market registry. Technical success was 99.6%. Freedom from type I/II endoleak, freedom from rupture, freedom from open repair, freedom from type I/II endoleak, and freedom from migration was 100% at 2 years of follow-up. Freedom from aneurysm enlargement was 96%. The 3-year results from the EU cohort in 30 pts revealed that freedom from rupture, freedom from open repair, freedom from type I/II endoleak, and freedom from migration was 100%. Freedom from aneurysm enlargement was reported to be 86%. A multicenter, prospective, post-market study of the Ovation and Ovation Prime is also available in 501 pts enrolled at 30 sites across Europe. Technical success was 99.6%. Freedom from rupture and conversion to open surgery was 100%. Freedom from type I/II endoleak, freedom from migration and freedom from iliac limb occlusion was 100% at 2 years of follow-up. Freedom from aneurysm enlargement of one year was 99.1%. As of July 31, 2013, about 2000 patients have been treated with the Ovation and Ovation Prime worldwide. Successful recanalisation of TASC C and D lesions exceeds 80%. In addition, the use of new techniques and devices such as retrograde approach and re-entry catheters improves the technical success rates following failed initial procedure. According to some authors, failure of endovascular repair does not preclude the possibility of infrarenal bypass. Thus, the use of primary stenting to treat femoropopliteal occlusive lesions has shown the most promising outcomes. However, primary stenting for longer femoropopliteal lesions is controversial because of the high risk of stent fracture. Newer generations of longer nitinol self-expanding stents could allow endovascular treatment of longer femoropopliteal lesions thanks to their resistance to compression and fracture in this tortuous physical environment. In few studies, primary stenting of TASC C and D lesions appears to be safe and efficient given the high-sustained clinical improvement and the low rate of ISR. Endovascular treatment of such long and severe lesions exposes to high rate of stent fractures, which should not be a concern given their low clinical impact. Early narrow clinical and duplex scan follow-up of long stents is mandatory to detect potential thrombosis and ISR events. Primary stenting of TASC C and D lesions needs ongoing surveillance and longer follow-up, given the high rate of CLI.

CTO management
Long stenting for CTO management

Y. Gouëffic
Department of vascular surgery, institut du thorax, CHU de Nantes, Nantes, France

Recent advances in endovascular techniques have led to widespread applicability of endovascular repair for more severe femoropopliteal lesions. Even though lesions are more distal and longer, the technical success does not seem to be altered. Successful recanalisation of TASC C and D lesions exceeds 80%. In addition, the use of new techniques and devices such as retrograde approach and re-entry catheters improves the technical success rates following failed initial procedure. According to some authors, failure of endovascular repair does not preclude the possibility of infrarenal bypass. Thus, the use of primary stenting to treat femoropopliteal occlusive lesions has shown the most promising outcomes. However, primary stenting for longer femoropopliteal lesions is controversial because of the high risk of stent fracture. Newer generations of longer nitinol self-expanding stents could allow endovascular treatment of longer femoropopliteal lesions thanks to their resistance to compression and fracture in this tortuous physical environment. In few studies, primary stenting of TASC C and D lesions appears to be safe and efficient given the high-sustained clinical improvement and the low rate of ISR. Endovascular treatment of such long and severe lesions exposes to high rate of stent fractures, which should not be a concern given their low clinical impact. Early narrow clinical and duplex scan follow-up of long stents is mandatory to detect potential thrombosis and ISR events. Primary stenting of TASC C and D lesions needs ongoing surveillance and longer follow-up, given the high rate of CLI.
Endovascular treatment of internal carotid artery aneurysm under protection

Rumas Aslam
Perioperative aortic dissection rupture after endovascular stent graft placement for treatment of type B dissection

Jian-fang Luo
Department of Cardiology, Guangdong Cardiovascular Institute, Guangdong General Hospital, Guangdong Academy of Medical Sciences, Guangzhou, Guangdong 510080, China

BACKGROUND
The perioperative aortic dissection (AD) rupture is a severe event after endovascular stent graft placement for treatment of type B AD. However, this life-threatening complication has not undergone systematic investigation.

METHODS
The medical record data of 563 Stanford type B AD patients who received thoracic endovascular repair from 2004 to December 2011 at our institution were collected and analyzed. Double entry and consistency checking were performed with Epidata software.

RESULTS
Twelve patients died during the perioperation after thoracic endovascular repair, with an incidence of 2.1%, 66.6% were caused by aortic rupture and half of the aortic rupture deaths were caused by retrograde type A AD. In our study, 74% of the non-rupture surviving patients had the free-flow bare spring proximal stent implanted, compared with 100% of the aortic rupture patients (74% vs. 100%, P=0.213). The aortic rupture patients are more likely to have ascending aortic diameters ≥4 cm (62.5% vs. 9%, P=0.032), involvement of the aortic arch concavity (62% vs. 27%, P=0.041) and have had multiple stents placed (P=0.039).

CONCLUSION
Thoracic AD endovascular repair is a safe and effective treatment option for AD with relative low in-hospital mortality. AD rupture may be more common in arch stent-graft patients with an ascending aortic diameter ≥4 cm and with severe dissection that needs multi-stent placement. Attention should be paid to a proximal bare spring stent that has a higher probability of inducing an AD rupture. Post balloon dilation should be performed with serious caution, particularly for the migration during dilation.

Keywords: aortic dissection; aortic rupture; stent; graft

The application of various devices and technique in aortic endovascular repair

Xiaodong Li
Cardiovascular Surgery, General Hospital, Ning Xia Medical University, Yin Chuan, Ning Xia 750004, China

OBJECTIVE
To discuss the clinical outcomes of various devices and technique used in endovascular aortic repair (EVAR).

METHOD
1. Use the occluder for treating congenital heart disease patient ductus arteriosus (PDA) to occlude the branch vessels and resolve type III endoleak in EVAR. Also the occluder can extend the proximal landing zone effectively and therefore prevent type I endoleak in EVAR.
2. Use the coils to resolve type I and type II endoleak
3. Apply the chimney technique to extend the proximal landing zone in patients with short neck.
4. Place the restrictive distal stent to prevent the stent-graft induced distal dissection post EVAR and to resolve the issue of the excessive oversize of stent grafts in treating teenagers’ acute aortic injury

RESULTS
All cases achieved procedural success without any serious complication. The 6-12 months follow-up indicated good clinical outcome without any serious adverse events such as endoleak, critical limb ischemia, and stent graft fracture and migration.

CONCLUSIONS
The application of various devices and technique can effectively expand the indication for endovascular aortic repair. The safety and efficacy of those devices and technique have been preliminarily demonstrated.
Compliance with surveillance protocols, following elective endovascular aneurysm repair

Godfrey AD, Morbi AHM, Albayati M, Shearman CP, Nordon IM
Department of Vascular Surgery, Cardiovascular and Thoracic Surgery (CV&T) Unit, University Hospital Southampton NHS Foundation Trust, UK

OBJECTIVES
Integral to maintaining excellent outcomes post-endovascular aneurysm repair (EVAR) is a robust surveillance protocol and timely re-intervention. A significant proportion of patients fail to comply with surveillance, exposing themselves to complications of endoleak and graft migration. We examine EVAR surveillance in Wessex, exploring factors that may predict poor compliance.

MATERIALS AND METHODS
Data was retrospectively collated and cross-referenced for all patients who underwent EVAR between October 2008 and March 2013. Surveillance was conducted centrally (at the tertiary-referral trauma centre) and at 4 spoke-units. Surveillance compliance (attendance at imaging appointments) at varying time intervals and predictors of non-compliance, including age, gender, co-morbid status and distance from surveillance site, were analysed for univariate significance.

RESULTS
179 consecutive elective EVAR cases were assessed. 50 patients (27.9%) were non-compliant with the surveillance protocol, with 12 (6.7%) having no imaging post-EVAR. At one-year, 56.1% (of 123 patients) were compliant. At years two and three, 41.5% and 41.2% (of 65 and 34 patients respectively) were compliant.

There were no statistically significant differences in age (p=0.77), gender (p=0.74) or co-morbid status (p=0.77) between the compliant and non-compliant groups. Distance to central unit was non-significant (p=0.67), irrespective of island or mainland residence. There was a trend towards compliance in upper-middle class socioeconomic groups (ABC1 C1C2D), but overall predictive value was not significant (p=0.82).

CONCLUSIONS
While patients are willing to travel to the central unit for treatment, compliance with surveillance post-EVAR is poor (irrespective of imaging modality or surveillance-site). No independent predictor of non-compliance has been confirmed but socioeconomic status appears relevant. This study highlights an important issue, which needs to be addressed urgently, if we are to ensure the continued success of endovascular repair.

Technical success with a balloon-positioned subintimal crossing device: subgroup analysis from the Re-ROUTE trial

K. Keirse1, A. Schmidt2, E. Blessing1, J. Diaz-Cartelle4, on behalf of the Re-ROUTE Investigators
1. Regional Hospital Heilig Hart Tienen, Tienen, Belgium
2. Park Hospital Leipzig, Center for Vascular Medicine, Leipzig, Germany
3. University of Heidelberg, Heidelberg, Germany
4. Boston Scientific, Natick, MA, USA

AIM
The Re-ROUTE Clinical Study was conducted to assess the safety and effectiveness of a balloon-positioned re-entry catheter system for subintimal recanalization of chronic total occlusion (CTO) of the femoropopliteal arteries. Secondary analyses included technical success rates in subgroups of patients based on demographic and clinical characteristics.

METHODS
A total of 92 patients were enrolled in this prospective, single-arm study conducted at 12 European centers. Patients were required to have claudication or critical limb ischemia with lesions ≤250 mm. Mean device use time ranged from 8 to 15 minutes across lesion length subgroups. Lumen re-entry was successful in 93% (40/43) and 80% (35/44) of patients with none/mild calcification or moderate calcification, respectively. No device-related perforations requiring intervention, device-related dissections (grade C or greater), nor target lesion revascularizations due to complications were identified through 30 days post-procedure.

CONCLUSION
Although these descriptive analyses are not powered for statistical comparisons, they suggest that effectiveness of the balloon-positioned re-entry system was similar between both sexes, between patients with or without diabetes, across subgroups with increasing lesion length, and between none/mild and moderate calcification subgroups.
Silent cerebral infarction following thoracic endovascular aortic repair

AH Perera, N Rudarakanchana, CD Bicknell, L Monzon, M Hamady, O Kirmi, RG Gibbs

Imperial College, London
Department of Vascular Surgery, Cardiac, Vascular and Thoracic Surgery (CV&T) Unit, University Hospital Southampton NHS Foundation Trust, UK

INTRODUCTION
Overt clinical stroke occurs in 2-8% of patients undergoing thoracic endovascular aortic repair (TEVAR), primarily due to embolic events. Silent cerebral infarction (SCI) is a brain injury detected incidentally on imaging. It is now recognised that SCI contributes to cognitive decline and is a predictor of future stroke, dementia and depression.

AIM
This study investigates cerebral embolisation and SCI in patients undergoing TEVAR.

METHODS
Two independent observers conducted blinded evaluation of pre-operative CT Aortograms for the presence of aortic atheroma, graded as 1-5 using a validated scoring system. Intra-operative Transcranial Doppler of bilateral middle cerebral arteries was performed, and microembolic events were identified by two blinded observers in an offline analysis. A sub-group of patients also underwent pre- and post-operative cerebral MRI to identify SCI.

RESULTS
Twenty-eight patients (median age 63 years, interquartile range (IQR) 45-77) underwent 17 TEVAR, 4 TEVAR + carotid-subclavian bypass and 7 arch/visceral hybrid procedures. Microemboli were detected during all cases, and more frequently (i) in patients with greater aortic atheroma (atheroma grade 4-5: median emboli 151, IQR 95-210 vs. atheroma grade 1-3: median 48, IQR 34-85, p=0.02); (ii) in the left MCA territory compared to the right (median 83, IQR 28-146 vs. 41, 19-66, p=0.003); and (iii) during the treatment phase (stent-graft manipulation and deployment) compared to the diagnostic phase (wire and catheter passage) (median 55, IQR 20-160 vs. 24, 15-41, p=0.001). There were three post-operative strokes (11%) and SCI was found in 10/15 patients who underwent MRI.

CONCLUSIONS
Two-thirds of patients who underwent MRI had evidence of SCI; this is a previously unrecognised burden and implies the risk of cerebral injury following TEVAR is higher than currently acknowledged. This study has identified high-risk patients and procedural phases, which will inform future strategies to minimise risk of cerebral injury.
PV patency and integrity problem percutaneous management by stenting, endoluminal RFA\&angioplasty or endoluminal RFA\&stenting

M. Mizandari, N. Habib, K. Kuntelia

PURPOSE
Novel technique of PV patency and integrity percutaneous restoration is presented.

MATERIAL AND METHODS
Total 15 patients with portal hypertension due to PV patency problem; among them 14 underwent percutaneous recanalization using a novel endovascular bipolar radiofrequency device. RFA was followed by balloon angioplasty (7 cases; 6 - HCC, 1-retroperitoneal sarcoma) or vascular stent placement (7 cases; 6 - HCC, 1 - liver cirrhosis). In 1 case (choledocholithiasis and pancreatitis induced PV stricture and porto-biliary fistula) PV stenting was performed. The PV tributary was percutaneously accessed under US guidance and 5G guide catheter was manipulated through the block using guidewire technique under DSA guidance. In case of stenting the procedure was completed by stent placement; for RFA processing the endoluminal radiofrequency device was inserted into the thrombus; procedure was completed by immediate balloon angioplasty or stenting.

RESULTS
The technical success rate was 80.0%; in 3 cases (20.0%) wire conduction through the organized thrombus was impossible. Postprocedure portography documented significantly improved portal vein blood flow in all patients, to whom the procedure was completed. Porto-biliary fistula was successfully managed by percutaneous stenting. Patients tolerated the procedure easily; no intra- or postprocedural complications were detected.

CONCLUSIONS
The percutaneous management of PV patency and integrity problems by percutaneous stenting and endoluminal RFA is safe and effective technique; it should be suggested as a treatment option for otherwise incurable patients and might be used as a bridge for further treatment. However, a larger study is needed to assess its usefulness and long-term impact on patient outcome.
Innominate artery and right internal carotid artery PTA and stenting via right radial artery

C. Moncalvo, V. Puma, A. Laurenza, G. Carosio, R. Cluffi
Clinica Città di Alessandria - Policlinico di Monza – Alessandria - Italy

CLINICAL CASE
L. B.: 78 y.o., male. Symptoms: vertebro-basilar insufficiency, hypertension, diabetes, COPD, HCV with esophageal varices. The angiographic examination showed a subocclusion of the innominate artery (previous failed attempt of PTA of the innominate artery via femoral approach).

TREATMENT
Right radial approach with 8F sheath. The stenosis was crossed directly with the sheath and a 0.035” guidewire, then we carried the stent to the lesion site, keeping it running into the sheath. After having checked the correct locations of the stent, the sheath was withdrawn and the stent was released. In this case we choose a stent graft. The final angiographic result was good.

RESULT
Follow-up: The patient remained asymptomatic and Echocardiography controls confirmed the maintenance of the good angiographic result.

EVAR for a Streptococcus Group A infected aneurysm of the abdominal aorta

Karaca Saziye1, Rager Oliver2, Murith Nicolas3, Kalangos Afkenedy1
1. Service of Cardiovascular Surgery, University Hospital of Geneva, Switzerland.
2. Service of Nuclear Medicine, University Hospital of Geneva, Switzerland.

A CASE REPORT
An infected aneurysm of the abdominal aorta due to a microorganism is an unusual finding, which can be associated with high morbidity and mortality. The classic treatment recommendation is antibiotic therapy and open-abdominal surgery. Alternative treatments including endovascular exclusion of the AAA are also recommended. In this case report, we document an 85-year-old woman with a streptococcus group A (S. pyogenes) infected abdominal aortic aneurysm (Fig. 1), who undergoes successful treatment with an endoprosthesis (Fig. 2) and antibiotic therapy. Her clinical and radiological follow-up was uneventful and antibiotic therapy was continued.

INTRODUCTION
Myotic aneurysms are uncommon and account for only 1%-1.8% of aortic aneurysms. A myotic aneurysm is a destruction of the vessel wall leading to dilation of an artery caused by infection due to a microorganism. Gram-positive bacteria such as the Staphylococcus species, Enterococcus species, and Streptococcus pneumoniae, are the most common, and are responsible for 60% of these infections. Gram-negative bacilli is Salmonella are the majority of the cases. Streptococcus group A causing myotic aneurysm is extremely rare, with only a few cases reported. Group A Streptococcus (S. pyogenes), a virulent gram-positive organism, causes a wide spectrum of diseases, including pharyngitis, skin and soft tissue infections, bloodstream infections, and streptococcal toxic shock syndrome. The mechanism of myotic AAA includes hematogenous spread from an infection with concurrent bacteremia. Endovascular aortic stent grafting has significant advantages over open aneurysm repair of infected aneurysm, because it can avoid a large skin incision, aortic cross-clamping, blood transfusion, immobilisation and prolonged hospital stays. Long-term results of EVAR for infected AAA have not been reported, but the short and midterm outcomes of this treatment modality have been promising good results. We demonstrate that the use of endovascular aneurysm repair (EVAR) for myotic aortic aneurysms simplifies the procedure and provides a good alternative in combination with pre-and postintervention antimicrobial therapy in a high-risk patient.
Feasibility and safety of laparoscopic aortobifemoral bypass using a clampless and sutureless aortic anastomotic technique

Bernard Segers 1, David Horn 1, Jean Lemaître 1, Alain Roman 2, Etienne Stevens 2, Vanessa Van Den Broeck 3, Pascale Hizette 1, Thierry Bosschaerts 1

1. Department of Vascular and Thoracic Surgery
2. Intensive Care Unit
3. Department of Anesthesiology
Hôpital Universitaire St Pierre, Brusse1 Belgium – Université Libre de Bruxelles (ULB)

OBJECTIVES
This study describes the feasibility and safety of a clampless and sutureless laparoscopic bypass for TASC D aortoiliac occlusive lesions using the EndoVascular Réthropérito-neoScopic Technique (EVREST).

The patients were placed in a 30° right lateral decubitus position. The dissection of the retroperitoneal space was performed laparoscopically and the infrarenal aorta was exposed. A bilaterally graft was inserted into the retroperitoneal space. Under videoscopic control the prosthetic limbs were brought to the groins. The graft was connected on the left side of the aorta by an intra and extra aortic covered stent-graft. This connection was performed 12 patients without suture. An aortic clamp was used temporarily on 4 patients. The femoral anastomoses were performed classically.

RESULTS
Median follow-up was 9.3 months. The retroperitoneal laparoscopic approach to the aorta was always feasible. Median operative time was 265 minutes. Median duration of aorto-prosthetic connection was 60 seconds. Median hospital stay was 6.2 days. The early and late postoperative complications were observed. All grafts were patent at the end of the follow-up with no early or late disruption of the proximal assembly. The ankle brachial pressure index was improved in all cases. One patient died at 6 months from acute respiratory failure.

CONCLUSION
EVREST greatly facilitates the laparoscopic aortic surgery in occlusive disease with no need of suture nor clamping. The aorto-prosthetic anastomosis is then avoided, which is the most attractive feature. It offers the advantages of laparoscopy and those of endovascular surgery. This approach could make the laparoscopic aortic surgery more accessible. Early experience supports procedural and initial post-procedural safety and demonstrates proof of concept for EndoVascular Réthropérito-neoScopic Technique.

Asymptomatic aneurysm of the left gastric artery

Pixner D., Franzen J., Granderath F.A.

Department of General and Visceral Surgery, Center for Minimally Invasive Surgery, Hospital Maria v. d. Apostel; Neuwierk, Moenchengladbach, Germany.

This case report describes the incidental finding of an asymptomatic aneurysm of the left gastric artery by computed tomography scan in a multimorbid patient after laparoscopic cholecystectomy with postoperative complications. There are only few publications on results of surgical or endovascular treatment, thus most information is obtained from reviews.

INTRODUCTION
Aneurysms of the intestinal arteries are relatively rare, with a reported incidence of 1% (1). Their appearance is estimated to be in approximately 1% of the population (2). Gastric aneurysms account for less than 4% of visceral aneurysms and may be congenital or acquired in origin and are potentially lethal. They most frequently develop due to an aortic or mesenteric aneurysm, but atherosclerotic changes or trauma may also be a cause. Aneurysms of the lung, liver, and spleen are relatively uncommon. Gastric aneurysms are solitary and acquired, affecting men aged over 59 years three times more often than women (3). Approximately 90% of gastric aneurysms are expected to result in rupture (3,4), either into the peritoneum or into the stomach (5), and complication-associated mortality reaches 70% (6). Due to an increase in quantity and quality of endovascular treatment, thus most information is obtained from reviews.

MATERIALS AND METHODS
Aneurysms of the intestinal arteries are relatively rare, with a reported incidence of 1% (1). Their appearance is estimated to be in approximately 1% of the population (2). Gastric aneurysms account for less than 4% of visceral aneurysms and may be congenital or acquired in origin and are potentially lethal. They most frequently develop due to an aortic or mesenteric aneurysm, but atherosclerotic changes or trauma may also be a cause. Aneurysms of the lung, liver, and spleen are relatively uncommon. Gastric aneurysms are solitary and acquired, affecting men aged over 59 years three times more often than women (3). Approximately 90% of gastric aneurysms are expected to result in rupture (3,4), either into the peritoneum or into the stomach (5), and complication-associated mortality reaches 70% (6). Due to an increase in quantity and quality of endovascular treatment, thus most information is obtained from reviews.

DISCUSSION
The decision for intervention in case of an incidental finding of an aneurysma of the left gastric artery has to take into account the size and the natural history of the lesion, the risk of rupture and the relative risk of surgical or radiological intervention. For most asymptomatic aneurysms, observant treatment is indicated. Despite their rarity, they represent a serious vascular condition, since about 25% will rupture; if they do, mortality varies from 25% to 70% (3,5). Mortality after surgical intervention is low, and if the correct right measures are taken, it is much lower than the 20-30% of mortality associated with rupture of these visceral aneurysms. Laparoscopic surgery appears useful for elective surgery of an aneurysm in the left gastric artery (3).
Transbrachial angioplasty of Chronic Total Occlusion in iliac and femoral arteries: a safe and durable option

Mosaad Soliman
Vascular Surgery Unit, Mansoura University Hospital, Mansoura, Egypt

BACKGROUND
Aortofemoral bypass has traditionally been the intervention of choice for chronic total occlusions (CTO) of iliac arteries. However, it is associated with significant mortality and morbidity making this procedure prohibitive in high-risk patients. This option becomes even impossible if ilio-femoral occlusion is associated with long SFA occlusion. In order to make it feasible to revascularize iliac and femoral arteries, transbrachial angioplasty (TBA) for ilio-femoral CTO has been utilized.

METHODS
A consecutive series of 55 patients with long (> 5 cm) iliac and femoral artery CTO were treated by TBA. According to TASC II classification, there were 8 patients in type B, 19 patients in type C and 28 patients in type D. Recanalization of the occluded lesions was attempted with the left brachial access..

RESULTS
55 patients underwent TBA of an iliac and long femoral CTO, with a success rate of 72% (40/55). Technical failure was due to the inability to re-enter the lumen in all cases. 18 (32%) of these patients were considered to be non-surgical candidates. Indications for TBA were severe claudication, (64%), and critical limb ischemia, (36%). In the unsuccessful 15 patients, TBA and hybrid procedure were done. In 25 patients, a more distal lumen re-entry was achieved into the superficial femoral artery (16) or the popliteal artery (4). In 71% patients, stents were deployed with an average of 1.1 (range:0-3) stents utilized. True lumen re-entry was achieved with an assist device in 3% of patients. Mean pre-operative ABI was 0.52 (range:0.12-0.95). Mean post-procedural ABI was 0.76 (range:0.36-1.30). Mean ABI at last follow-up was 0.80 (range:0.36-1.20). Claudication improvement was documented in 72%. Primary patency was 80% and 69% at 1 and 2 years respectively. Secondary patency was 92% and 86% at 1 and 2 years respectively. Limb salvage was 99% and 97% at 1 and 2 years respectively. After TBA, 9 out of 12 patients with ulcers healed. Procedural 30-day mortality rate was 1.8% (1/55). Survival rate was 93% and 65% at 1 and 4 years respectively, reflecting the poor health status of this cohort.

CONCLUSION
TBA of iliac and femoral CTOs is feasible and can be performed safely and effectively, even in high-risk patients. Excellent patency and limb salvage rates can be achieved.
In stent restenosis of superficial femoral artery: an off-label, but long-lasting, treatment

C. Moncalvo, V. Puma, A. Laurenza, G. Carosio, P. Cioffi
Clinica Città di Alessandria - Policlinico di Monza - Alessandria - Italy

CLINICAL CASE

TREATMENT
Right femoral artery approach with 7F sheath. Cross over into left common femoral artery. The stenosis was crossed with a 0.014” guidewire, then atherectomy followed by post dilation with a drug eluting balloon. The final angiographic result was good. Follow-up: September 2012 right lower limb claudication. Doppler examination: instent restenosis on right superficial femoral artery after 18 months and a critical instent restenosis on right superficial femoral artery was detected.

Percutaneous pulmonary artery stenting for extrinsic malignant compression: case report

A. Kerzmann1,2, G. Swennen3, S. Dassy1, M. Mitribung4, T.N. Dang5, E. Passelecq1,2, J.O. Defraigne1

Hospital:
1. Dept. of Cardiovascular and Thoracic Surgery, CHU Sart-Tilman, Liège, Belgium
2. Dept. of Vascular and Thoracic Surgery, Sanitè Nikolaus Hospital, Eupen, Belgium
3. Dept. of Oncology, Sanitè Nikolaus Hospital, Eupen, Belgium
4. Dept. of Anaesthesiology, Sanitè Nikolaus Hospital, Eupen, Belgium
5. Dept. of Radiology, Sanitè Nikolaus Hospital, Eupen, Belgium

INTRODUCTION
Pulmonary artery stenting is usually performed for congenital heart diseases. It can also be used for fibrosis, strictures after lung transplantation and malignant stenosis. We report one case of left pulmonary artery stenting for stenosis due to extrinsic compression by non-small cell lung carcinoma.

CASE REPORT
A 61-year-old man was treated by radiation and chemotherapy for pT3N1M0 squamous cell carcinoma in the hilum of the left lung. Since some months he complained of short winded class III of the New York Heart Association classification. His general state was good. Pulmonary scintigraphy showed absence of perfusion in the left lung. Chest CT scan revealed severe stenosis of the left pulmonary artery due to extrinsic compression by the cancer. Under general anaesthesia, percutaneous dilatation followed by stenting with self expandable nitinol stent of the left pulmonary artery was realized. There was no peroperative complication. The symptoms decreased immediately. After 3 months follow up, the patient has dyspnea class II of the New York Heart Association classification.

DISCUSSION
Extrinsic compression of pulmonary artery by non-small cell lung carcinoma is rare. Percutaneous pulmonary artery stenting for that indication is minimal invasive, feasible and safe. It is a palliative treatment but it can strongly improve patient’s quality of life.
Use of drugcoated balloon angioplasty as first line treatment for all SFA lesions

Koen Keirse¹, Bart Joos¹, Jürgen Verbist², Patrick Peeters², Marc Bosiers³, Koen Deloose³, Joren Callaert³

1. H.Hart hospital, Tienen, Belgium
2. Imelda Hospital, Bonheiden, Belgium
3. A.Z. Sint-Blasius, Dendermonde, Belgium

BACKGROUND
Drugcoated balloons have been proven efficient in BTK and is still under investigation in Trials for their use in the SFA. The use of drugcoated balloons (DEB), can reduce the number and length of stenting in the SFA. Although there are clear indications of the benefits in case of restenosis or in-stent restenosis, scientific evidence to support this title is still lacking today. We have treated 99 limbs consecutively with SFA disease (including TASC C and D lesions, restenoses and in-stent restenosis) in a subcohort of patients included in the IN.PACT Global trial to investigate the mid-term results (up to 36 months) in patients presenting with intermittent claudication or critical limb ischemia by use of DEB systems.

METHODS
Patient cohort is a subgroup of the prospective, non-randomized, multi-center, multi-national, controlled trial IN.PACT Global conducted in 1 site in Belgium. Between Nov 2012 and Dec 2013, 77 patients (99 limbs treated) were enrolled. The efficacy endpoint of the trial is freedom from clinically driven TLR within 12 months and primary patency within 12 months, defined as freedom from >50% restenosis at 12 months as indicated by an independently verified duplex ultrasound peak systolic velocity ratio (PSVR) <2.4 in the target vessel with no reintervention. Safety endpoint includes freedom from device-related and procedure-related mortality through 30 days, freedom from major target limb amputation and freedom from TLR within 12 months.

RESULTS
Of the 77 patients enrolled, 68.33% were men and the mean age was 69.9 years. 88% had intermittent claudication and 12% presented with critical limb ischemia. For lesion treatment, only 30% received a bail-out stenting for residual stenosis of more than 50% or flow-limiting dissections and these were considered as treatment failure. The overall mean lesion length was 149.6 mm. Preliminary results show a freedom from TLR at 6 months of 76% and a primary patency at 6 months of 74%.

CONCLUSION
Treatment of all real-world SFA disease with DEB seems safe and feasible, shows promising primary patency rates and freedom from TLR and appears to have lower bail-out stenting rates as compared to POBA and acceptable. As these preliminary 6-month data show promising results, full 6-month data and preliminary 12-month data will be presented at the congress.

Cystic adventitial disease of the popliteal artery

Stéphanie Donohue
Are stent grafts the solution for In-Stent Restenosis after SFA stenting

Koen Keirse², Jürgen Verbist², Patrick Peeters¹, Marc Bosiers¹, Koen Deloose¹, Joren Callaert¹

¹Department of Vascular Surgery, A.Z. Sint-Blasius, Dendermonde, Belgium
²Department of Cardiovascular and Thoracic Surgery, Imelda Hospital, Bonheiden, Belgium

BACKGROUND
Tackling in-stent restenosis (ISR) in the superficial femoral artery (SFA) has some challenges. To date literature review reveals only very limited data on ISR in peripheral arteries. Current available treatments do not yield satisfactory results, demonstrating the need of a treatment with a better outcome. The Viabahn endoprosthesis with a heparin bioactive surface offers high flexibility when deployed in the SFA and the coating provides an enhanced haemocompatibility.

METHODS
The RELINE trial is a prospective, randomized, multi-center, international, controlled trial (RCT) in which enrollment was allowed to continue until 80 patients meet the eligibility criteria. Between June 2010 and February 2012, 100 patients were enrolled. The first primary endpoint is primary patency at 12 months, defined as no evidence of restenosis or occlusion within the originally treated lesion based on color-flow duplex ultrasound (CFDU) measuring a peak systolic velocity ratio ≤2.5 and without target lesion revascularization (TLR) with in 12 months. The second primary endpoint is the proportion of subjects who experience serious device-related adverse events within 30 days post-procedure.

RESULTS
The primary analysis is based on the intention-to-treat (ITT) total of 100 patients. 47 (47.0%) patients were randomized to the VIABAHN ISR group and 53 (53.0%) patients were randomized to the POBA group. The demographic data was comparable in both treatment groups. In the VIABAHN ISR group there were 34 (72.3%) men and the mean age was 67.34 (49-86) years. In the POBA group, 35 (66.0%) patients were male and the mean age was 69.26 (48-87) years. Per-protocol and as-treated subanalysis has been conducted for the same tests used with ITT-analysis and showed no significant difference concerning demographic data. In the Per Protocol analysis (illustrated on the slides) a total of 83 patients are selected from the ITT group (17 patients excluded based on protocol requirements). As-treated refers to the treatment the subject received, regardless of the originally intended treatment and regardless of the amount of follow-up and consists of 75 patients (excluding 8 patients that received bail-out stenting in the POBA group). The survival analysis in Per-Protocol analysis shows a primary patency rate at 12 months of 74.8% for the VIABAHN ISR group and 30.5% for the POBA group (p<0.001). Freedom from TLR at 12 months is 79.9% in the VIABAHN ISR group and 44.7% in the POBA group (p<0.001).

CONCLUSION
Reline is only the second RCT on ISR treatment published to date. The 12 months data shows that viabahn endoprosthesis is significant superior to POBA for ISR. The 24 months data are analyzed for the moment and are able to show a similar trend in patency outcome.

Fusiform aneurysm of the occipital artery

Mike Bogoyevac, M.D., Vanessa Ho, M.D.
Eisenhower Medical Center — Rancho Mirage, California USA

Occipital artery aneurysms are a rare finding, in fact, they are the rarest aneurysms involving the terminal branches of the external carotid artery. When they are discovered, they are usually sequelae of head trauma and tend to form sacular pseudo-aneurysms. There are approximately 10 cases of both pseudo and true OAAs reported in English medical literature with an average of 1.2 cases per year since 2005. Here, we present a case of a 50-year-old male who came to the clinic for folliculitis of the scalp. Through physical examination, an incidental, painless, pulsatile mass was discovered on the right occiput. There was no history of head trauma. CT angiography confirmed the diagnosis of a true, fusiform occipital artery aneurysm. To the best of our knowledge, this will be the third case of a true, fusiform aneurysm of the occipital artery to be reported. Typically the treatment of occipital artery aneurysms is through invasive surgical resection. However, in this case, a minimally invasive approach was employed. Treatment via endovascular transcatheter embolization with a liquid embolic agent proved to be a successful alternative therapy.
Use Of 4 French systems for treating Fem-Pop lesions: advantages and disadvantages: lessons from the 4EVER trial using Astron Pulsar stents and no closure devices

Koen Keirse 1, Jürgen Verbist 2, Patrick Peeters 3, Marc Bosiers 1, Koen Deloose 1, Joren Callaert 1
1. Department of Vascular Surgery, A.Z. Sint-Blasius, Dendermonde, Belgium
2. Department of Cardiovascular and Thoracic Surgery, Imelda Hospital, Bonheiden, Belgium

BACKGROUND
One of the more recent treatment options for femoro-popliteal, atherosclerotic lesions, is the application of self-expanding nitinol stents. The use of 4 French systems can reduce access site related complications. Although there are clear indications of the benefits of 4F devices for peripheral applications, scientific evidence to support this thesis is still lacking today. The 4EVER trial attempts to investigate the long-term results in patients presenting with intermittent claudication or critical limb ischemia by use of 4 French systems.

METHODS
The 4EVER trial is a prospective, non-randomized, multi-center, multi-national, controlled trial conducted in 5 sites in Belgium and Germany. Between June 2010 and May 2011, 120 patients were enrolled. The primary endpoint was primary patency at 12 months, defined as freedom from >50% restenosis at 12 months as indicated by an independently verified duplex ultrasound peak systolic velocity ratio (PSVR)<2.5 in the target vessel with no reintervention.

RESULTS
Of the 120 patients enrolled, 82 (68.33%) were men and the mean age was 71 (47-90; ±9.70) years. 83.3% had intermittent claudication or critical limb ischemia by use of 4 French systems. For lesion treatment, 70 (58.3%) patients received an Astron Pulsar stent, 46 (38.3%) were treated with Pulsar-18 stent placement and 4 (3.3%) received mixed stent use. The mean lesion length was 43.5mm in the Astron Pulsar group, 105.4mm in the Pulsar-18 group and 145.0mm in the mixed stent group. The overall mean lesion length was 72.4 mm. Kaplan Meier estimation reported a 12-month primary patency rate at 81.4% and a 12-month freedom of target lesion revascularization of 89.3%. Recent analyzed 24 months data Kaplan Meier estimation reported a 12-month primary patency rate at 82.7% and freedom from TLR as 6F devices over 2 years, even in calcified lesions. The need for less manual compression time showed less access complications and hence no need for expensive closure devices. The full 24-month data will be presented at the congress.

CONCLUSION
The FOREVER Trial indicates the benefits of treatment with 4 French systems. The results demonstrate that the use of 4 French systems is feasible for the majority of endovascular treatments, with equal technical success rate, primary patency and freedom from TLR as 6F devices over 2 years, even in calcified lesions. The need for less manual compression time showed less access complications and hence no need for expensive closure devices. The full 24-month data will be presented at the congress.

Endovascular repair of below knee para-anastomotic pseudoaneurysm following multiple vascular procedures

J. Jenkner, I. Sharaf, G. Rothenbacher, M. Storck
Department for vascular and thoracic surgery, Karlsruhe City Hospital, Karlsruhe, Germany

PURPOSE
We describe a technique of endoluminal graft exclusion of a distal para-anastomotic pseudoaneurysm following below-knee femoro-popliteal interposition graft implantation with pulsatile swelling in the lower leg.

METHOD
A 83-year-old male patient with history of multiple trans-popliteal thrombectomies and secondary healing in the lower leg presented 6 months after below-knee femoro-popliteal interposition graft implantation with pulsatile swelling in the lower leg. Via transfemoral approach angiography of the distal anastomosis was performed showing contrast filling of the pseudoaneurysm and multiple stenosis of the peroneal artery (PA) with occlusion of the anterior tibial artery (ATA) 4cm distal to the origin. A 9x50mm stentgraft (Viabahn, Gore®) was deployed via 7F sheath extending from the below knee popliteal artery reaching to distal part of the interponate. The peroneal artery was also dilated with a 3x80mm balloon. One month later the patient presented with rest pain in the left leg. Duplex ultrasound showed occlusion of the endograft. An ipsilateral common femoral artery puncture was performed, allowing placement of a 4F sheath. The popliteal artery was catheterized with 12cm thrombolysis-catheter. Local thrombolytic therapy (LTT) was performed with urokinase bolus, then 50.000 IE/h and heparin 1.000 IE/h for 24h. Completion arteriography before removal of the wires showed complete recanalisation of both interposition graft and popliteal artery and surprisingly two run-off vessels (peroneal artery and anterior tibial artery).

CONCLUSION
Minimally invasive strategies utilizing endovascular approaches are appealing even when anatomically difficult. Additional local thrombolytic therapy (LTT) can effectively improve run-off.
Endovascular cure of giant false popliteal aneurysm (90 mm) with a good longterm patency and functional result

De Bast Y. M.D., Barchiche R. M.D. 2
1 Department of Vascular Surgery CHIREC site Saint Anne Saint Remigius Brussels.

CASE
In December 2006, a 84 years old man who lived in institutional home came to emergency for falling down with right hip and knee pain, radiography doesn’t show any fracture. Twenty days later, he came back with a painful swelling behind the right knee and cutaneous suffering of the skin. Echo dopplex sonography showed a popliteal aneurysma of 90 mm. Angioscanner wasn’t possible because an impossibility to extended his leg (photo 1).

METHODS
We abords first the superficial femoral artery at the upper popliteal access just above the knee and the low popliteal artery at the lower popliteal artery access below the knee to control the aneurysma above and below. We decide at this time to do an arteriography and puncture the superficial femoral artery (photo 2). We catheterized at the first attempt with a angle terumo 0.35 the lesion. An endoprosthesis type Viabahn® from Gore-Tex® of 6mm diameter and 50mm of long was implanted with total exclusion of the aneurysm (photo 3). An flattening of the aneurysma was realized to evacuate clots (photo 4) and decrease the pression in the leg and over the skin. The cause of aneurysma was visualized it was a posterior wall rupture of the popliteal artery (photo 5). Drainage of the space was realized and wounds were closed classically (photo 6).

RESULTS
At 7 years of follow up, the patient is still alive at 91 years olds the patency of endoprosthesis is complete with a good functional result (photo 7).

CONCLUSION
Endovascular techniques can have good result in the treatment for popliteal aneurysm .