

# DAY 1

Scientific Tracks & Abstracts



4<sup>th</sup> Edition of World Congress & Exhibition on

# Vascular Surgery

March 28-29, 2019 | Rome, Italy

# DAY 1

March 28, 2018

## Sessions

**Abdominal Aortic Aneurysms | Techniques of Open Vascular Surgery | Thoracic Aortic Vascular Surgery Anesthesia For Vascular Surgery | Endovascular Surgery | Carotid Artery Diseases | Venous Surgery | Vascular Imaging Vascular Bypass Grafting**

### Session Chair

**Paolo Valle**

S.Eugenio Hospital , Italy

### Session Co-Chair

**Petr Štádlér**

Na Homolce Hospital, Czech Republic

### Session Introduction

- Title:** **CD95-Ligand contributes to abdominal aortic aneurysm progression by modulating inflammation**  
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- Title:** **Stentgrafts as an endovascular option for hemodialysis-related venous occlusive disease (VOD)**  
**T M Steinke**, Schoen Klinik Duesseldorf, Germany
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**Alejandro Celis**, IMSS Mexico
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**E Swiecka**, Elbe-Elster-Klinikum, Germany
- Title:** **Percutaneous Artery Embolization in the treatment of bleedings. State-of-the-art**  
**Fatima El Hajj**, Clinica AnaliaMed, Brazil
- Title:** **Congenital vascular malformations: features of diagnosis and complex treatment.**  
**Chernukha L M**, National Institute of Surgery and Transplantology, Ukraine
- Title:** **Acute EC-IC bypass for ruptured ICA blood blister-like aneurysms (BBAs)**  
**Yasushi Ueno**, Shinko Memorial Hospital, Japan
- Title:** **Distal hybrids for long chronic total occlusion of superficial femoral artery with severely compromised runoff**  
**K Arshed**, SPMU, Russia
- Title:** **Chronic superior vena cava syndrome: Causes of venous shunt from the systemic to the cerebral circulation and causes of cerebrospinal sclerotic plaques formation.**  
**S Spagnolo**, GVM Care & Research, Italy

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## CD95L-ligand contributes to abdominal aortic aneurysm progression by modulating inflammation

**Wanfen Xiong**

University of Nebraska Medical Center, USA

**Statement of the Problem:** Abdominal aortic aneurysm (AAA) is one of a number of diseases associated with a prominent inflammatory cell infiltration, matrix protein degradation, and smooth muscle cell apoptosis. CD95 is an inflammatory mediator and an apoptosis inducer. How the CD95L/CD95 contributes to aneurysm degeneration remains largely unknown.

**Methods & Results:** By using the CaCl<sub>2</sub> murine model of AAA, we found that both mRNA and protein levels of CD95L were increased in aneurysm tissue compared with NaCl-treated normal aortic tissue. To determine whether CD95L contributes directly to aneurysm formation, we used CD95L null (CD95L<sup>-/-</sup>) mice to examine their response to CaCl<sub>2</sub> aneurysm induction. Six weeks after periaortic application of CaCl<sub>2</sub>, aortic diameters of CD95L<sup>-/-</sup> mice were significantly smaller compared to CaCl<sub>2</sub>-treated wild type controls. Connective tissue staining of aortic sections from CaCl<sub>2</sub>-treated CD95L<sup>-/-</sup> mice showed minimal damage of medial elastic lamellae which was indistinguishable from the NaCl-treated sham control. Furthermore, CD95L deficiency attenuates macrophage and T cell infiltration into the aortic tissue. To study the role of CD95L in the myelogenous cells in AAA formation, we created chimeric mice by infusing CD95L<sup>-/-</sup> bone marrow into sub-lethally irradiated wild type mice (WT/CD95L<sup>-/-</sup>-BM). WT/CD95L<sup>-/-</sup>-BM mice were resistant to aneurysm formation. Inflammatory cell infiltration was blocked by the deletion of CD95L on myeloid cells. The levels of caspase 8 in the aortas of CaCl<sub>2</sub>-treated wild type mice were increased compared to NaCl-treated

controls. CD95L deletion inhibited caspase 8 expression. Furthermore, a caspase 8-specific inhibitor was able to partially block aneurysm development in CaCl<sub>2</sub>-treated aneurysm models.

**Conclusion & Significance:** These studies demonstrated that inflammatory cell infiltration during AAA formation is dependent on CD95L from myelogenous cells. Aneurysm inhibition by deletion of CD95L is mediated in part by down-regulation of caspase 8.

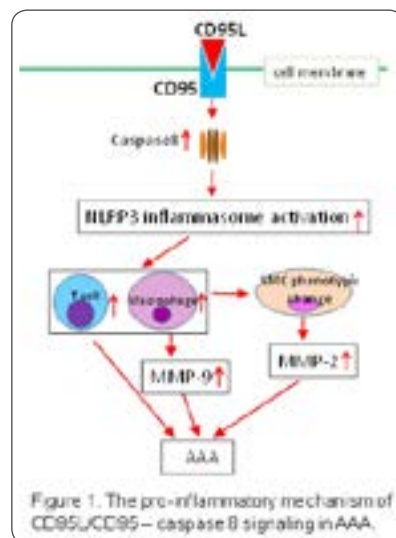


Figure 1. The pro-inflammatory mechanism of CD95L/CD95 – caspase 8 signaling in AAA.

March 28-29, 2019  
Rome, Italy**Recent Publications**

1. **Batra R, Suh M K, Carson J S, Dale M A, Meisinger T M, Fitzgerald M, Opperman P J, Luo J, Pipinos I I, Xiong W and Baxter B T (2018) IL-1 $\beta$  (Interleukin-1 $\beta$ ) and TNF- $\alpha$  (tumor necrosis factor- $\alpha$ ) impact abdominal aortic aneurysm formation by differential effects on macrophage polarization. *Arterioscler Thromb Vasc Biol.* 38(2):457-463.**
2. **Dale M A, Xiong W, Carson J S, Suh M K, Karpisek A D, Meisinger T M, Casale G P and Baxter B T (2016) Elastin-derived peptides promote abdominal aortic aneurysm formation by modulating M1/M2 macrophage polarization. *J Immunol.* 196(11):4536-43.**
3. **Xiong W, Meisinger T, Knispel R, Worth J M and Baxter B T (2012) MMP-2 regulates Erk1/2 phosphorylation and aortic dilatation in Marfan syndrome. *Circ Res.* 110(12):e92-e101.**
4. **Xiong W, Mac Taggart J, Knispel R, Worth J, Persidsky Y and Baxter B T (2009) Blocking TNF-alpha attenuates aneurysm formation in a murine model. *J Immunol.* 183(4):2741-6.**
5. **Xiong W, Longo G M, Greiner T C, Zhao Y, Fiotti N and Baxter B T (2002) Matrix metalloproteinases 2 and 9 work in concert to produce aortic aneurysms. *J Clin Invest.* 110(5):625-32.**

**Biography**

Wanfen Xiong is an Associate Professor at the University of Nebraska Medical Center. She received her PhD in Biochemistry and Molecular Biology. Since she completed her Postdoctoral training at Stanford University in 1999, she has worked to understand the etiology and mechanisms of aortic aneurysms. Through the study of a murine Marfan syndrome (MFS) model, she has shown that smooth muscle cells (SMCs) switched prematurely to a more mature contractile phenotype at postnatal day 7 in MFS mice. Her research interests are to understand the molecular mechanisms underlying early aneurysm development in Marfan syndrome and develop effective strategies to prevent aneurysm formation.

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## Stenosis of the brachiocephalic vein and percutaneous thoracic thrombectomy with thrombectomy system- case report

**E Swiecka, M Khaznadar, T Krönert and R Zippel**

Elbe-Elster-Klinikum, Germany

**R**ecurrent or long-term central catheterization could lead to central thoracic venous stenosis or occlusion. The symptoms are a shunt/fistula dysfunction or occlusion with visible collateral circuit on the skin and increased venous pressure during hemodialysis. A 78-year-old male with a 10-year history of hemodialysis contacted our service with a dysfunction and aneurysm of the native brachiocephalic fistula. Ultrasound and shuntography confirmed a partial-thrombosed aneurysm and a small-caliber cephalic vein. Both methods did not allow a clear statement on the central venous outflow. During the first operation, the aneurysm was resected, and the fistula vein repaired with a bovine pericardial patch. Intraoperatively, the vein was visualized and dilated in the proximal third and the result secured with a covert stent. On the second postoperative day we had to register a re-occlusion of the fistula and caused an angio-CT of the thoracic veins, which showed a high grade stenotic brachiocephalic vein and a moderate stenosis of the subclavian vein. In a second procedure, partial resection of the shunt vein with interposition of an alloplastic vascular prosthesis and stenting of the brachiocephalic vein were performed. On post op day 1, the reconstruction was occluded again. The percutaneous thrombectomy was performed from central to peripheral using a thrombectomy system via shunt-prosthesis. This was followed by a stent application from the brachial vein via the subclavian vein to the already stented cephalic vein. A regular 8-week follow-

up showed regular shunt function, no re-occlusions and/or need for further operations. In the case of recurrent occlusion of dialysis shunts or fistulas, a central venous drainage obstruction must always be ruled out. In a simultaneous thrombosis of the vascular access, the use of a thrombectomy system is effective and safe. Detected stenoses of the central veins require stent restoration after dilatation. Even with the use of relatively small-caliber stents, we have seen no problems over an observation period of two years.

### Biography

E Swiecka graduated from the Medical University in Gdansk, Poland. In 2004 she moved to Germany in order to practice medical profession. She conducted her residency (stage practice) in vascular surgery in Augusta Hospital in Düsseldorf under supervision of prof. R. Kolvenbach and in DRK-Hospital in Berlin under Dr. M Naundorf. Between July 2014 and July 2017 she held a post of the Consultant of Vascular Surgery at the Medical University of Brandenburg in Neuruppin, Germany. In March 2018 she took a post of the Senior Consultant at the Vascular and Endovascular Surgery Department in Elbe-Elster Klinikum in Herzberg, Germany. She is a Member of many national and international medical societies, including European Society for Vascular Surgery, Polish Vascular Surgeon Society and Bulgarian Society of Vascular Surgery. As for hands-on clinical experience, she specializes in carotid and dialysis surgery as well as endovascular procedures.

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# Can carotid endarterectomy only be indicated by Doppler ultrasonography?

**Fatima El Hajj and Christiano Stchelkunoff Pecego**

IAMSPE, Brazil

**S**troke is a disease of great health relevance due to its morbidity and high costs generated. Symptomatology varies from asymptomatic, fugitive amaurosis, transient ischemic attack (TIA) and direct manifestations of stroke. In view of this, prevention would be the best option to reduce costs secondary to morbidity and mortality due to stroke. Carotid endarterectomy (ACE) is the most common preventive procedure. ECA is a surgical technique consolidated 50 years ago. Large studies such as NASCET, VA, ECST, ACAS and ASCT have already analyzed and proven the indications, cost-effectiveness and limitations of the technique. Digital angiography is the gold standard for determining the degree of carotid stenosis, as methods of investigating carotid stenosis and defining the surgical indication of endarterectomy. Because it is an invasive examination, with a risk of major complications (TIA/stroke) of approximately 4%, it has been progressively replaced by tomography (Angio-CT) or resonance angiography (Angio-NMR). At the same time, Doppler ultrasonography (US) is a non-invasive, low-cost method of screening carotid stenosis. With the incessant progress of diagnostic methods, Doppler ultrasonography (US) has proven to be a method of choice for noninvasive evaluation of the carotid arteries. The degree of carotid artery stenosis is largely based on either a peak systolic velocity or final diastolic velocity analysis, or both, of the carotid artery. Doppler scanning in pulsed mode combined with B-mode ultrasound allows the diagnosis of carotid atheromatous lesions (>70% stenosis), with sensitivity and specificity above 90%. The US adds comparative advantages to the other contrasted methods, since it is a lower cost procedure, it lacks complications and contraindications, it is easy to access, it does not require

the use of contrast, and it also has information about plaque morphology, stenosis percentage and topography of the carotid bifurcation.



Figure 1: Diagnostic complementation with CEUS technique..

## Recent Publications

1. Brunno Cezar Framil Sanchez, Lineu Amaro Rodrigues Junior, Felipe Trentin Neves, Thiago Correa Tambelli, Fernando Eduardo Paulatti Frederico, Fatima Mohamad El Hajj, Juliana Monteiro de Abreu, Tatiana Milunovic Lobo Rosa, Alexis Iury Framil Sanches and Antônio Alberto Ramos Argento (2011) Giant condyloma. *Journal of the Faculty of Medical Sciences of Sorocaba* 13:25-27.

## Biography

Fatima El Hajj is a Brazilian – Lebanese Vascular Surgeon. MD in Pontifical Catholic University of São Paulo – PUCSP. General Surgery degree in Municipal Public Server Hospital of São Paulo – HSPM. Vascular Surgery Degree in Estadual Public Server of São Paulo – IAMSPE. Vascular Surgeon at AnaliaMed Health and Wellness. CEO AnaliaMed Diagnose Center.

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## NARA socks project aiming at a spread of compression therapy and a revival of local industry

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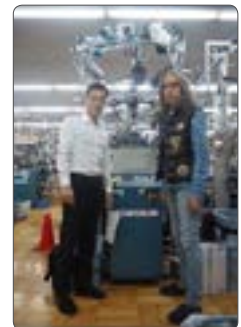
**Background:** In Japan “Monozukuri” stands for the manufacturing industry and its spirituality and culture. It is not only making things but also Japanese traditional technique in pursuit of advanced production by the craftsmen. Nara with a population of 30 thousand called “Town of Socks” is the largest producer of socks traditionally here in Japan. These manufacturers are highly reputed for their technical skills and capabilities, and supply products to such overseas luxury brands. However, due to the large quantity of imported products to Japan, the production volume has dropped greatly from the peak period. And Japan is a country with many disasters because of island. It is necessary to enlightenment to prevention of thrombosis at the time of disaster to the people. I enquired medical institutions, stocking manufacturers, and university students in local for cooperation. As a result, one elastic stocking was completed. The purpose of the activity is enlightenment of prevention of thrombosis and reconstruction of local industry.

**Methods:** The research period is from January 2017 to March. There are 30 objects (M14/F16, 34.5±9.3). We investigated changes in the circumference of the leg below the knee and improvements in the blood circulation of the legs before and after using the compression stockings with sonogram and investigated a compression pressure while wearing the stockings.

**Results:** The results revealed that the circumference of the leg below the knee showed a decreasing tendency after wearing the compression stockings. The peak velocity of the popliteal vein tended to increase 20 min after wearing

the compression stockings.

**Conclusion:** The compression stockings seemed to be effective for promoting venous return and preventing deep vein thrombosis of the lower limbs in healthy people. I am hoping to reduce the suffering caused by human thrombosis and revive the local industry.



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	Time(minutes)		
	0	20	40
Averaged PV (cm/second)	4.65(1.9)	5.62(2.1)	5.51(2.3)
VD (mm)	8.65±1.1	8.48±1.2	8.39±1.2

**Recent Publications**

1. Geerts W H, Pineo G F, Heit J A et al. (2004) T Prevention of venous thromboembolism: The Seventh ACCP Conference on antithrombotic and thrombolytic therapy. Chest 126:338-400.
2. Stein P D, Matta F, Yaekoub A Y, et al. (2010) Effect of compression stockings on venous blood velocity and blood flow. Thromb Haemost 103:138-144.

**Biography**

Takahiro Imai, MD is a graduate of Saitama Medical School in 1999. He trained at the Hokkaido University Graduate School of Medicine in Sapporo, Sapporo at the Department of Cardiovascular Surgery during his residency.

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## “Two-level” varicose veins: myth or reality?

Chernukha L M, Guch A A, Kondratyuk V A, Vlasenko E A and Bobrova A O

National Institute of Surgery and Transplantology, Ukraine

**Aims:** The main principle of treatment in patients with varicose veins (VV) of the lower limbs is the elimination of pathological venous reflux. In typical cases, reflux forms in saphenofemoral and/or safenopopliteal junction. The aim of the study was to identify the possibility of using minimally invasive interventions in patients with VV of the lower limbs to eliminate pathological venous reflux formed above the level of saphenofemoral junction.

**Materials & Methods:** Examination of the blood flow in the ovarian and internal iliac veins in 27 women with VV of the thigh' posteromedial surface and gluteal region was carried out. Color duplex scanning with Valsalva test was performed for the pelvic and subcutaneous veins reflux detection. Phlebography and computed tomography were performed to exclude patients with May-Turner and nutcracker syndrome.

**Results:** Ultrasound signs of pelvic venous insufficiency were dilated veins of myometrium >4 mm, ovarian veins >8 mm, reverse blood flow during the Valsalva test. Varicose veins of the perineum were noted in 23 (85.18%) patients, in 18 (66.66%) VV on the thigh' medial and posteromedial surface were observed. The blood reflux on the left ovarian vein was recorded in 19 (70.37%) cases, on the right - in 7 (25.92%). Analysis of the data led us to the idea of a “two-level” varicose disease, in which isolated correction of the pathological venous reflux distal to the inguinal ligament inevitably led to a recurrence of VV. Endovascular methods of correction of pathological venous reflux in ovarian veins

were used in 10 patients (37.03%), in 7 of them (70.0%) laser ablation with 2 ring radial fiber, in 3 (30.0%) - radiofrequency ablation.

**Conclusions:** Elimination of the pathological venous reflux in ovarian veins may be suggested as the method of prevention of VV recurrence caused by pelvic venous insufficiency.

### Recent Publications

1. Chernukha L et al. (2016) Epidemiological aspects of comorbidity of lower limbs chronic venous disease (CVD) and haemorrhoids: the results of detect-duo. *Int Angiol.* 35(1-2):83.
2. L M Chernukha, O V Kashyrova, A O Guch, G G Vlaykov, O A Vlasenko, V A Kondratuk and I V Gomolyako (2017) Congenital vascular malformations: features of diagnosis and treatment (2017) *The Hungarian Journal of Vascular Diseases XXIV(3):17-18.*
3. Chernukha L, Kashyrova O, Vlaykov G, Guch A, Vlasenko O and Kondratyuk V (2018) The main aspects of diagnostics and treatment of diffuse arteriovenous forms of congenital vascular malformations of extremities with the presence of micro fistulas. *Acta Phlebologica.* 19(2):49-55..

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### **Biography**

Chernukha L M is a Leading Research Fellow of the Department of Vascular Surgery, Vascular Surgeon, Phlebologist; Vice-President of Association of Vascular Surgeons, Phlebologists, Angiologists of Ukraine; Chief Editor of "Clinical Phlebology". She is the author of the initiative and the Head of the working group on the creation of Consensus and National Guidelines on Phlebolympology. She is the main specialist in

phlebolympology (care patients with congenital vascular malformations, lymphedema, chronic and acute venous diseases, post-traumatic injury of magistral vessels). She is in the Editorial board of: Clinical Phlebology (Kiev), Phlebology (Moscow), Cardiac Surgery and Interventional Cardiology (Kiev), Angiology and Vascular Surgery (Moscow) and, Surgery New (Vitebsk).

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## Covered stents: when and how to use?

**Paulo Eduardo Ocke Reis<sup>1,2</sup>, Leonardo Roever<sup>3</sup>, Marcello Rotolo Nascimento<sup>2</sup>, Gustavo Petrossi Solano<sup>2</sup>, Daniel Paixão<sup>2</sup> and Jean Moura Netto<sup>3</sup>**

<sup>1</sup>Federal Fluminense University, Brazil

<sup>2</sup>Vascular Clinic Ocke Reis, Rio de Janeiro, Brazil

<sup>3</sup>Federal University of Uberlândia, Minas Gerais, Brazil

The first commercially available covered stent was Corvita®, which was developed in Belgium by Jean Pierre Becquemin. Covered stents have expanded the use of endovascular procedures, they can be either with Dacron (Wallgraft®) or polytetrafluoroethylene (PTFE), examples: Solaris®, Viabahn®, iCast®, outside the United States called Advanta® V12, Jostent® and Fluency®. They can be balloon-expandable (iCast® or Advanta® V12) or self-expandable (Solaris®, Viabahn®, Jostent®, Wallgraft®). The treatment of vascular disease has changed dramatically during the last two decades. They are used mainly for the treatment of traumatic arterial lesions, arteriovenous fistulas or false aneurysms, peripheral aneurysms and, more recently, for the treatment of obstructive vascular disease of the aortoiliac and femoropopliteal sectors. To treat visceral artery aneurysms (vaas) covered stents can be useful, when the artery is not so tortuous and the vaas are not intraparenchymal. The major technical limitations to implant it in vaas are severe tortuosity, calcification or sometimes small caliber arteries. There are a lot of available stent grafts, we are getting experience, now, with the new brazilian covered stent, Solaris®. This stent-graft is more radiopaque than other conventional nitinol stents available in Brazil, it is a flexible self-expanding stent graft with PTFE. Those stents are a barrier to the ingrowth of neointimal hyperplasia, sealing off the inflammatory surface, and thus have the potential to inhibit restenosis. For the treatment

of vascular trauma, hemorrhage, aneurysmal disease, or even for stent grafts used for aortic aneurysms, several minimally invasive therapies are available. This video gives an overview of our experience in the currently available covered stents and they're useful.

### Recent Publications

1. Desgranges P, Mialhe C, Cavillon A et al. (1997) Endovascular repair of posttraumatic thoracic pseudoaneurysm with a stent graft. *Am J Roentg* 169:1743-5.
2. Raheerantenaina F, Rajaonahary T M A and Rakoto Ratsimba H N (2015) Update on diagnostic and therapeutic features of peripheral artery pseudoaneurysms following orthopedic and traumatologic surgery. *Rev Vasc Med* 3:16e21.
3. P E Ocke Reis, L Roever, I F Ocke Reis, et al. (2016) Endovascular stent grafting of a deep femoral artery pseudoaneurysm. *EJVES Short Rep.* 33:5-8.
4. P E Ocke Reis, Roever L and Reis I F O (2016) Embolization for visceral artery aneurysms: what's your opinion? *Journal of Vascular and Endovascular Surgery* doi: 10.21767/2573-4482.100001.

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- 5. Gilbertson J J, Pettengill O S and Cronenwett J L (1992) Antiproliferative effect of heparin on human smooth muscle cells cultured from intimal hyperplastic lesions of vein grafts. Ann Vasc Surg. 6:265-271.**

#### **Biography**

Paulo Eduardo Ocke Reis is a Specialist in Vascular and Endovascular Surgery. Professor of Vascular Surgery and Coordinator of the Vascular Surgery Service, HUAP, Federal Fluminense University at Niterói / Rio de Janeiro / Brazil. European Journal Vascular Endovascular Short Reports, Editorial Board, Associate Editor. Editor-in-Chief of the Journal of Vascular & Endovascular Therapy open access. Specialization at Vascular Surgery and Angiorradiology, Endovascular Surgery, Fellow-Vascular Research at Albert Einstein College of Medicine. Ph.D. at Ciências Morfológicas by UFRJ / BRAZIL (2009).

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# Stent grafts as an endovascular option for hemodialysis-related venous occlusive disease (VOD)

T M Steinke and L Nuth

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**Purpose:** This prospective single center observational registry evaluated the efficacy and durability of a new covered stent (Covera/ CRBard) in treating VOD to preserve a functional dialysis access circuit.

**Material & Methods:** In 53 patients (45.3% men; mean age 67.4 years, 28-89 years) with VOD, covered stents (Covera, CRBard) were used to treat symptomatic venous stenosis or to enable av-access functionality. The target lesion was accessed via the dialysis access site. The Covera covered stent (BD/Bard Peripheral Vascular) was implanted in all patients.

**Results:** Technical success was 100%. Target lesion primary patency (PP) at 6 month was 86%. Mean follow up was 6, 9 month. Study Population Mortality was 5 % at 6 month. Secondary patency (SP), access circuit patency rates (ACP), additional procedures for access salvage and subgroup analysis of different locations of stentgraft implantation (central, cephalic arch, outflow and canulation zone) are reported.

**Conclusion:** Placement of covered stents for hemodialysis-related VOD is safe, relieved symptoms, and enabled functionality of dialysis av-access circuits. There is a need for prospective and randomized studies to determine whether and where covered stents provide superior long-term results to those achieved with PTA and DCB-PTA.

## Recent Publications

1. T Steinke (2019) Endovascular arteriovenous fistula for hemodialysis access. *Gefäßchirurgie* 24:25-31.
2. T Steinke, Reber P U, Vogt B, Patel A G and Kniemeyer H W (2019) Surgery for aortoiliac aneurysms in kidney transplant recipients. *J Cardiovasc Surg (Torino)* 41(6):919-25.
3. T M Steinke, P U Reber, H Hakki and H W Kniemeyer (1999) Haematuria and an abdominal aortic aneurysm-warning of an aortocaval fistula. *Endovasc Surg.* 18(6):530-1.

## Biography

T M Steinke has his expertise as Consultant/Certified Specialist in Vascular Surgery; Certified Specialist in Endovascular Surgery (DGG). He is the Chief Physician of the Department of Vascular Surgery Schoen-Klinik Duesseldorf since January 2017. He also worked as Chief Physician of the Department of Vascular Surgery Dominikus-Krankenhaus Duesseldorf from May 2005 till December 2016. He is the Outpatient Consultant at the Kaiserberg Klinik/ Vascular Surgery and main focus on minimal invasive Venous Therapy. He serves as a Member of the German Society for Vascular Surgery (DGG), German Society for Surgery (DGCh), German Society for Angiology (DGA), Association Surgeons of North-Rhine-Westfalia.

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## An easy algorithm to approach and treat vascular anomalies, experience in the Vascular Surgery Department of National Western Medical Center Pediatrics Hospital

**Alejandro Celis**

IMSS CMNO HPED, Mexico

**Statement of the Problem:** Vascular anomalies are a group of diseases that has been avoided by most of physicians of any specialty. They have been considered for many years as untreatable, and there are very few specialized centers in the world that take care of these patients. As a vascular surgeon we have been taught that these diseases are untreatable or that they can be your worst nightmare. The ISSVA has been the leading association classifying these diseases and having a biannual meeting to discuss and show advances in the field. Though, there are few members around the world, and data has not been rightly spread through involved physicians.

**Methodology & Theoretical Orientation:** More than 100 patients have been treated in our Center by the Vascular Surgery Department with different vascular anomalies. Reviewing the results of the treated patients an algorithm has been developed to have an easy approach and treatment decision for most cases.

**Findings:** An easy algorithm simplifies the way first contact doctors should approach a vascular anomaly. Most important concerns are to try to classify the anomaly according to ISSVA and detecting potentially complications on time. A good physical examination, basic laboratory tests, and Doppler Duplex Ultrasound are the basis to try to approach any vascular anomaly. Most complex cases will need a referral to specialist, and this specialist can use this

algorithm to simplify the treatment decision.

**Conclusion & Significance:** With the spread of an easy algorithm to approach and treat vascular anomalies, patients will benefit with a prompt diagnosis and start of treatment, which will decrease the risk of complications. This simple algorithm can be used by any physician or medical center and will also have a great cost/benefit in institutions, or private practice.



### Recent Publications

1. Cox J A, Bartlett E and Lee E I (2014) Vascular malformations: a review. *Seminars in Plastic Surgery* 28(2):58–63.
2. McCafferty I J et al. (2011) Imaging and management of vascular malformations.

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Clinical Radiology 66(12):1208–1218.

3. Hammill Adrienne et al. (2011) Sirolimus for the treatment of complicated vascular anomalies in children. *Pediatric Blood & Cancer* 57(6):1018-1024.
4. Adams Denise M et al. (2016) Efficacy and safety of sirolimus in the treatment of complicated vascular anomalies. *Pediatrics* 137(2):e20153257.
5. Richter Gresham T and Friedman Adva B (2012) Hemangiomas and vascular malformations: current theory and management. *International*

*Journal of Pediatrics*. Article ID: 645678.

### **Biography**

Alejandro Celis is a Vascular Surgeon, trained in Guadalajara, Mexico, since 2017, he has become the first Vascular Surgeon directly involved in the management of children in a Pediatrics Hospital. He has been applying his clinical, surgical and endovascular skills to treat mostly patients with vascular anomalies. Noticing there is very little experience about vascular anomalies among most physicians, he has decided to get deep in the field and develop the best strategies to treat the patients and share his experience with other physicians.

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## Central venous occlusive disease in hemodialysis patients – What to do when the dialysis fistula is quickly occluded after reintervention?

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**Introduction:** Recurrent or long-term central catheterization could lead to central thoracic venous stenosis or occlusion. The symptoms are a shunt/fistula dysfunction or occlusion with visible collateral circuit on the skin and increased venous pressure during hemodialysis.

**Methods:** We describe our diagnostic and therapeutic strategy on five patients with thoracic central vein stenoses treated in our hospital during the last 2 years. All patients have a history of 5-10 years in hemodialysis and underwent 2-4 fistula operations within the last 12 months. A venous CT of the thoracic veins was indicated by all patients after revascularization when the dialysis fistula was quickly occluded. The CTs identified 4 occlusions of the vena brachiocephalica and one of vena subclavia. Moreover, two obstructions of vena cephalica as well as one aneurysm of the fistula vein were detected. Four patients were successfully operated with thrombectomy and simultaneous implantation of relatively small-caliber vein stents (8-12 mm diameter) in central position. One had a percutaneous thrombectomy of thoracic veins with thrombectomy system and stent application over the same access.

**Conclusions:** In patients with recurrent occlusions of arteriovenous access and a long-term history of

hemodialysis, a stenosis of the central veins can be included. Already at the first sign of shunt dysfunction, a diagnosis has to be made to avoid an acute occlusion and the then often necessary implantation of a central venous catheter. We recommend the one-time care with thrombectomy and central venous stenting. Even after the implantation of relatively small-caliber stents, we achieved satisfactory results.

### Biography

E Swiecka graduated from the Medical University in Gdansk, Poland. In 2004 she moved to Germany in order to practice medical profession. She conducted her residency (stage practice) in vascular surgery in Augusta Hospital in Düsseldorf under supervision of prof. R. Kolvenbach and in DRK-Hospital in Berlin under Dr. M Naundorf. Between July 2014 and July 2017 she held a post of the Consultant of Vascular Surgery at the Medical University of Brandenburg in Neuruppin, Germany. In March 2018 she took a post of the Senior Consultant at the Vascular and Endovascular Surgery Department in Elbe-Elster Klinikum in Herzberg, Germany. She is a Member of many national and international medical societies, including European Society for Vascular Surgery, Polish Vascular Surgeon Society and Bulgarian Society of Vascular Surgery. As for hands-on clinical experience, she specializes in carotid and dialysis surgery as well as endovascular procedures.

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## Percutaneous artery embolization in the treatment of bleedings – state of the art

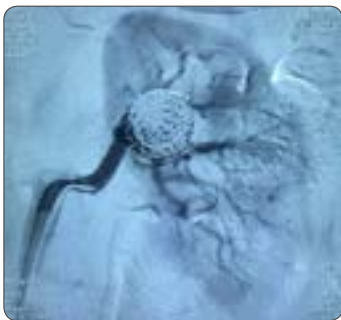
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**E**mbolization consists into introducing in a blood vessel, agent or material that led into the bloodstream, will occlude a vessel in the distance. Percutaneous arterial embolization (PAE) is a treatment method sedimented worldwide and renowned as the gold standard for diagnosis and treatment of hemorrhage. In Brazil is being increasingly indicated, either emergency or elective, to avoid major surgery or the removal of an organ, total or segmental. This paper describes the state of the art of the indications of PAE in hemorrhage, the most modern techniques, illustrating the application of this therapeutic modality.



### Recent Publications

1. **Mohamad El Hajj F.; Neiva Marcia Pereira Jacques; Percutaneous arterial embolization in the treatment of bleeding. State-of-the-art. 2013 Medical Residency Committee of the Municipal Public Server Hospital of São Paulo**

– HSPM.

2. **Mohamad El Hajj, F; Neiva Marcia Pereira Jacques Percutaneous arterial embolization in the treatment of refractory digestive hemorrhage in a patient with von Willenbrand disease. Case report. 40th Brazilian Congress of Angiology and Vascular Surgery.**
3. **Mohamad El Hajj F, Clariana Casali Rodrigues Fernandes, Andréia Esteves de Lima, Diego Caetano da Silva Varella, Fábio Yamada and Neiva Marcia Pereira Jacques () Percutaneous arterial embolization of renal artery intraparenchymal aneurysm in single kidney. Case report.2013. 40th Mohamad El Hajj, F . Carotid endarterectomy can only be indicated by Doppler ultrasonography?, 2015. 41th Brazilian Congress of Angiology and Vascular Surgery.**

### Biography

Fatima El Hajj is a Brazilian – Lebanese Vascular Surgeon. MD in Pontifical Catholic University of São Paulo – PUCSP. General Surgery degree in Municipal Public Server Hospital of São Paulo – HSPM. Vascular Surgery Degree in Estadual Public Server of São Paulo – IAMSPE. Vascular Surgeon at AnaliaMed Health and Wellness. CEO AnaliaMed Diagnose Center.

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## Congenital vascular malformations: features of diagnosis and complex treatment

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**Introduction:** Congenital vascular malformations (CVM) occur in 1.5-10% of the total population. Various manifestations of CVM cause difficulties in diagnosis and treatment, resulting in disability and sometimes, death of the patient.

**Methods:** The data of 630 patients with CVM (period 2005-2016) were analysed, females predominated (55%), and average age was 25.5. Ultrasound duplex scanning, selective arteriography, phlebography, multidetected computed tomography, pathomorphological and immunohistochemical studies (proliferation markers VEGF, Ki-67), study of the hemostasis (D-dimer, soluble fibrin, fibrinogen) and fibrinolytic system (protein C) were investigated.

**Results:** The source of proliferation of both forms of CVM (venous and arteriovenous (AV)), given the level of VEGF and Ki-67 expression, is precisely the microcirculatory vasculature, due to the presence of existing AV microfistulas. It was discovered the significant activation of coagulation capacity in preoperative period in patients with AV CVM (23): 9 (39%) patients had significantly increased plasma fibrinogen content (from 3.7 to 7.2 g/l), 10 (43.5%) - soluble fibrin (from 3.6 to 50 µg/ml), in 7 (30.4%) - D-dimer (from 119.3 to 1608.3 ng/ml); the activity of protein C in 95% of patients corresponded to the norm/changes in the postoperative period depended on the clinical-anatomical form of CAVM and type (radicality) of

the intervention. Treatment strategy include: Endovascular methods (embolization with the use of non-spherical PVA particles) during preoperative stage and combination of surgical, embolization, laser and sclerotic methods in perioperative stage; Correction of AV shunting separately or in conjunction with venous hypertension correction; Correction of secondary venous hypertension in superficial and/or deep venous systems; Correction of lymphatic outflow (lymphodrenation, lymphangioplasty, and lipo-lympho-aspiration, lymphovenous anastomoses) and; In cases of severe pain syndrome neurolysis with fasciectomy were performed.

**Conclusions:** The introduced pathogenically based approach allowed obtaining satisfactory results in 94.4% of patients.

### Recent Publications

1. Chernukha L et al. (2016) Epidemiological aspects of comorbidity of lower limbs chronic venous disease (CVD) and haemorrhoids: the results of detect-duo. *Int Angiol.* 35(1-2):83.
2. L M Chernukha, O V Kashyrova, A O Guch, G G Vlaykov, O A Vlasenko, V A Kondratyuk and I V Gomolyako (2017) Congenital vascular malformations: features of diagnosis and treatment (2017) *The Hungarian Journal of Vascular Diseases XXIV(3):17-18.*

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3. **Chernukha L, Kashyrova O, Vlaykov G, Guch A, Vlasenko O and Kondratyuk V (2018) The main aspects of diagnostics and treatment of diffuse arteriovenous forms of congenital vascular malformations of extremities with the presence of microfistulas. Acta Phlebologica. 19(2):49-55.**

### **Biography**

Chernukha L. M. is a Leading Research Fellow of the Department of Vascular Surgery, Vascular Surgeon, Phlebologist; Vice-President of As-

sociation of Vascular Surgeons, Phlebologists, Angiologists of Ukraine; Chief Editor of "Clinical Phlebology". She is the author of the initiative and the Head of the working group on the creation of Consensus and National Guidelines on Phlebology. She is the main specialist in phlebology (care patients with congenital vascular malformations, lymphedema, chronic and acute venous diseases, post-traumatic injury of magistral vessels). She is in the Editorial board of: Clinical Phlebology (Kiev), Phlebology (Moscow), Cardiac Surgery and Interventional Cardiology (Kiev), Angiology and Vascular Surgery (Moscow) and, Surgery New (Vitebsk).

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## Acute EC-IC bypass for ruptured ICA blood blister-like aneurysms (BBAs)

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**Object:** Internal carotid artery (ICA) blood blister-like aneurysms (BBAs) have fragile aneurysm walls, poorly defined necks and located at the supraclinoid ICA with remarkable tendency of preoperative rebleeding, premature rupture during surgery and enlargement of aneurysmal dome in the acute stage, so surgical treatment is extremely challenging. The authors describe the clinical course of patients with subarachnoid hemorrhage (SAH) caused by ruptured BBAs and emphasize the usefulness of parent artery occlusion (PAO) with or without extracranial-intracranial (EC-IC) bypass in the acute SAH period.

**Methods:** We analyzed the clinical records of 18 consecutive patients (8 male and 8 female) with a mean age of 56 years (range 29-88 years) treated between January 2005 and December 2016.

**Results:** All 18 patients presented with SAHs corresponding to World Federation of Neurosurgical Societies Grades I,II, III, IV, and V in 6, 3, 3, 2 and 4 patient, respectively. All surgery was performed in the acute stage but in 4 of 18 cases we cannot identified BBAs immediately after onset. 3 of the 18 experienced preoperative rebleeding, and repeated angiography revealed remarkable enlargement of the aneurysm. 8 patients underwent PAO with bypass, 6 without bypass and 4 underwent interventional aneurysmal coil embolization. The outcome was excellent and postoperative angiography demonstrated complete obliteration of the BBA in 8 patients, good in 6 and dead in 6. Intraoperative premature bleeding from the BBAs occurred in 2 of 9 patients who underwent surgical trapping.

**Conclusions:** Ruptured BBAs were successfully treated with

PAO during the acute SAH period.

### Recent Publications

1. Meling T R, Sorteberg A, Bakke S J, Slettebo H, Hernesniemi J and Sorteberg W (2008) Blood blister-like aneurysms of the internal carotid artery trunk causing subarachnoid hemorrhage: treatment and outcome. *J Neurosurg.* 108:662–71.
2. Lee B H, Kim B M, Park M S, Park S I, Chung E C, Suh S H et al. (2009) Reconstructive endovascular treatment of ruptured blood blister-like aneurysms of the internal carotid artery. *J Neurosurg.* 110:431–6.
3. Peschillo S, Miscusi M, Caporlingua A, Cannizzaro D, Santoro A, Delfini R, et al. (2015) Blister-like aneurysms in atypical locations: a single-center experience and comprehensive literature review. *World Neurosurg.* 84:1070–9.
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8:488–94.

### Biography

Yasushi Ueno has his expertise in neurosurgery and stroke prevention. Especially he has a lot of clinical data about acute ischemic stroke and

vascular recanalization following medical preservation using DOACs (direct oral anticoagulants). He has built this clinical data after years of experience in bed side work, research, evaluation, and administration both in Shinko Hospital and education institutions; Kyoto University.

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## Distal hybrids for long chronic total occlusion of superficial femoral artery with severely compromised runoff

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**Statement of the Problem:** Over two thirds of patients with critical limb ischemia (CLI) present with superficial femoral artery (SFA) disease, often a long chronic total occlusion (CTO) with patient popliteal artery and extensive occlusive lesions in the crural vessels. We studied a series of hybrid interventions to treat this multilevel disease as an alternative to conventional approach (either bypass or PVI).

**Methodology & Theoretical Orientation:** A total of 33 patients (24.2% women; mean age 69.5 years), all with Rutherford class 5-6 disease, were included in the study. Angiography showed long (>200 mm) SFA CTO in all 33 cases (100%) accompanied by CTO of either all crural arteries (n=26; 78.8%) or all but the peronea (n=7; 21.2%). We performed femoropopliteal bypass with autologous vein in all patients (100%) followed by crural angioplasty done either on the same day (n=14; 42.4%) or 2-14 days later (n=19; 52.6%). Direct angiosome revascularization was achieved in 30 patients (91%).

**Findings:** The in-hospital complications were one death due to MI (3%); early graft failure in 2 patients (6%; both after simultaneous hybrid interventions); early major amputation in one (3%). The 1-year patency and the amputation-free survival were 66% and 75%, respectively. The 1-year healing rate was 93.4%.

**Conclusion & Significance:** In CLI patients with long SFA CTO and extensive crural disease a shorter bypass to a patent popliteal artery followed by crural angioplasty does not seem to increase the risk of early graft failure and provides fair long-term outcome.

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2. Bradbury A W, Adam D J, Bell J, Forbes J F, Fowkes F G, Gillespie I, Ruckley C V and Raab G M (2010) basil trial participants. bypass versus angioplasty in severe ischaemia of the leg (BASIL) trial: A description of the severity and extent of disease using the Bollinger angiogram scoring method and the TransAtlantic Inter-Society Consensus II classification. *J Vasc Surg.* 51(5 Suppl):32S-42S.
3. Davies M G, Saad W E, Peden E K, Mohiuddin I T, Naoum J J and Lumsden A B (2008) Impact of runoff on superficial femoral artery endoluminal interventions for rest pain and tissue loss. *J Vasc Surg.* 48(3):619-25.
4. Cotroneo A R, Iezzi R, Marano G et al. (2007) Hybrid therapy in patients with complex peripheral multifocal steno-obstructive vascular disease: two-year results. *Cardiovasc Intervent Radiol* 30:355-361.
5. Zhou M, Huang D, Liu C, Liu Z, Zhang M, Qiao T and Liu C J (2014) Comparison of hybrid procedure and open surgical revascularization for multilevel infrainguinal arterial occlusive

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**disease. Clin Interv Aging 9:1595-603.**

### **Biography**

K Arshed has a MD grade in General Medicine and MS in Cardiovascular Surgery. At present he is pursuing PhD in Cardiovascular Surgery at St.Petersburg State Pediatric Medical University Department of Car-

diovascular Surgery (Ministry of health of the Russian Federation) and practicing at city hospital no.14 under the supervision of Professor A N Lipin, researching on the topic "Revascularization of lower extremities during the course of occlusion of SFA in combination with severe lesions of the lower leg arteries".

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## Chronic superior vena cava syndrome: Causes of venous shunt from the systemic to the cerebral circulation and causes of cerebrospinal sclerotic plaques formation

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**T**he chronic upper caval syndrome runs asymptotically. No symptomatic outcomes that characterize this condition have been identified. It is possible that anatomopathological changes and clinical pictures that could characterize moderate stenosis have been attributed to various neurological diseases such as multiple sclerosis, Parkinson's disease, Meniere's syndrome, etc. Only in recent years in patients with multiple sclerosis or Parkinson's disease have the presence of stenosis of the jugular veins been detected. Little is known about the clinical pictures this pathology determines. With the introduction in the vascular diagnostics of the Ecocolordoppler, of the angiography and of the MRI, vascular flows and anatomopathological lesions that characterize these stenoses have been highlighted. At the Ecocolordoppler it is documented that the venous blood, coming from the brain, reached the point of stenosis, reverses its flow direction and re-enters the cerebral circulation. This inversion of the circulation has been called reflux. Starting from the concept that the venous circle has a unidirectional and centripetal flow and that a counter-current flow is possible only in the compensation circles, we hypothesized and then demonstrated angiographically that the entire cerebrospinal venous system functions as a compensation circle. In our view, the reflux is not due to an inversion of the circolocerebral flow but to the venous blood that from the veins of the head, neck and throat reaches the jugular vein and, being unable to descend towards the heart, rises towards the cerebral circulation. It has been documented angiographically that blood from the jugular veins passes into the cerebral circulation, descends into the medullary circle, reaches the vein azigos and reaches the

heart. The inversion of the circulation in the jugular vein and in the cerebral veins and the continuous passage of blood from the oral cavity, often the site of viruses, to the brain and the medulla open new perspectives in the knowledge of the mechanisms of brain plaque formation. In patients with jugular vein stenosis, the direction of cerebral venous circulation is impaired. The blood from the jugular veins, the sigmoid sinuses, the transverse sinuses and the superior sagittal sinus, to reach the medullary veins, must cross the right breast and its tributary branches. The sinus rectum is a single conduit, constantly subjected to an overload of pressure and volume and with a circulation that runs counter-current. It puts in direct contact the viruses present in the oral cavity or in the pharynx with the nervous tissue. All these factors compromise the blood-brain barrier and allow viruses and anti-viral antibodies to reach the brain where they trigger an inflammatory process with plaque formation. If further confirmations corroborate this hypothesis, it will be possible to conclude that the opening of jugular stenosis leads to the normalization of cerebrospinal circulation and the elimination of the causes that lead to the formation of inflammatory processes in multiple sclerosis and other neurodegenerative diseases.

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  4. **Anderson R (1951) Diodrast studies of the vertebral and cranial venous systems to show their probable role in cerebral metastases. J Neurosurg. 8:411-422.**
  5. **Arnautovic K I, Al-Mefty O, Pait T G, et al. (1997)**

**The suboccipital cavernous sinus. J Neurosurg. 86:252-262.**

#### **Biography**

S Spagnolo is a University of Milan graduate. He is a Specialist in General Surgery, Cardiovascular Surgery and in Thoracic Surgery. He works at the Istituto Clinico Ligure Alta Specialty (ICLAS) Rapallo (GE). He has published more than 125 articles.

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