



4th Edition of World Congress & Exhibition on

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Vascular Surgery 2019



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Huei-Lung Liang, J Vasc Endovasc Therapy 2019, Volume 4 DOI: 10.21767/2573-4482-C1-006

Use of a Colapinto TIPS needle under cone-beam CT guidance for re-entry in subintimal recanalization of chronic iliac artery occlusion

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Purpose: To report the technique and clinical outcome of subintimal re-entry in chronic iliac artery occlusion by using a Colapinto transjugular intrahepatic portosystemic shunt (TIPS) needle.

Methods: Patients with chronic iliac artery occlusion (including Leriche syndrome) with earlier failed attempts at conventional percutaneous recanalization by guidewire and catheter-based techniques during the past 8 years were retrospectively reviewed. In these patients, an ipsilateral femoral access route was routinely utilized in a retrograde fashion. A Colapinto TIPS needle was used to aid the true lumen re-entry if commercially available outback catheter failed or unaffordable. The puncture was directed under two orthogonal fluoroscopic views or rotational angiography cone-beam CT guidance to reenter the abdominal aorta. Bare metallic stents of 8-10 mm in diameter were deployed and followed by balloon dilation.

Results: Twelve patients (11 male; median age, 75 years) were included in our investigation. The average occlusion length was 12.2 cm (range, 4-20 cm). Successful reentry was achieved in all patients without procedure-related complications. The ankle e brachial index (ABI) values increased from 0.38-0.79 to 0.75-1.28 after the procedure. Imaging follow-up (>6 months) was available in eight patients with patency of all stented iliac artery. Thereafter, no complaints of recurrent clinical symptoms

occurred during the follow-up period.

Conclusion: The use of Colapinto TIPS needle, especially under cone-beam CT image guidance, appears to be safe and effective to re-enter the true lumen in a subintimal angioplasty for a difficult chronic total iliac occlusion.

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Biography

Huei-Lung Liang has his expertise in interventional radiology, including vascular intervention, TIPS and interventional oncology. Nowadays, for chronic total aorto-iliac occlusion disease, intraluminal angioplasty is usually the treatment of choice. But once it failed, subintimal angioplasty is adopted as the alternative. The re-entry is usually achieved by using an outback catheter. As the outback reentry catheter is expensive and not reimbursed in our country, for patients who cannot afford the reentry device or in rare cases that outback catheter fails reentry, Dr. Liang introduced a new reentry method by using a 16G, 45cm-in length TIPS needle instead under cone-beam CT guidance which had achieved 100% technical success without major complications occurred.

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Is oxidative stress important in AAA pathogenesis?

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Objective: Active investigations continue to identify markers other than size that would predict a risk of AAA rupture. Circulating biomarkers could also indicate optimal intervals between the surveillance intervals. Finally, the identification of biomarkers also may identify potential pathogenic pathways, and thus may open possibilities for pharmacological inhibition of growth. In the search of novel biomarkers of AAA progression, serum and wall material proteins were analyzed by a differential proteomic approach.

Methods & Results: Same layers of AAA wall from ruptured (rAAA) and non-ruptured AAA were incubated, and the proteins released were analyzed by 2-dimensional difference in-gel electrophoresis. Proteins from serum were analyzed and correlated with AAA annual expansion rate. Several differentially expressed proteins involved in main AAA pathological mechanisms (proteolysis, oxidative stress, and thrombosis) were identified by mass spectrometry. Among the proteins identified, peroxiredoxin-2 (PRX-2) was more permanent, which was further validated by Western blot and immunohistochemistry. We demonstrated increased PRX-2 serum levels in rAAA patient wall material compared with AAA subjects and also positive correlation in serum among PRX-2 and AAA diameter and annual expansion rate. Finally, a prospective study revealed a positive correlation between PRX-2 serum levels and AAA expansion rate.

Conclusions: Several proteins associated with AAA

pathogenesis have been identified by a proteomic approach. Protein profiles identified in the serum would appear to be a convenient monitoring tool that has the ability to be both sensitive and specific for AAAs. Among them, PRX-2 serum levels are increased in AAA patients and correlate with AAA size and growth rate, suggesting the potential use of PRX-2 as a biomarker for AAA evolution.



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Biography

S Urbonavicius MD, PhD is a Consultant Vascular Surgeon at Regionshospitalet Viborg and clinically Associated Professor at Aarhus University in Denmark. He has many years of experience in research, teaching, and administration both in hospital and educational institutions. His passion in improving the health and wellbeing of his patients has let to many research projects with outcomes that have had impact on finding new methods of diagnosing and monitoring diseases, inhibition of disease progression, and possible new treatment methods for vascular diseases.

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Nguyen Dang Dinh Thi, J Vasc Endovasc Therapy 2019, Volume 4 DOI: 10.21767/2573-4482-C1-006

Left ventricular non-compaction cardiomyopathy: a case follow up with medical treatment

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t birth, heart failure is caused by fetal cardiomyopathy Aor extracardiac conditions (such as sepsis, hypoglycemia, and hypocalcaemia). Left ventricular non-compaction cardiomyopathy (LVNC) is a genetic cardiomyopathy characterized by prominent ventricular trabeculations and deep intertrabecular recesses, or sinusoids, in communication with the left ventricular cavity. The clinical sequelae of these deformities are the syndrome of heart failure and the risk for arrhythmias and stroke. In many decades, with only morphological assessment available and no definitive genetic pathway, LVNC remains a diagnostic and management challenge. In this case, we presented an eleven-monthold girl diagnosed with LVNC at two-month-old based on prominent trabeculations and intertrabecular recesses on a visualized estimate on echocardiography. We have used the Jenni criteria to evaluate the presence of ofher LVNC. In Vietnam, we are lack of experience in CMR and cardiac CT in children and the genetic testing is not available as well. Her clinical present with Ross modified classification in stage III. In medical therapy we have used Captopril oral 0.6 mg/kg q8h every day; Digoxin oral 10 µg/kg/d and Spironolactone oral 1.5 mg/ kg g12h intermittency depending on clinical present. Bottle feeding with breast milk in the first six months and with powder milk, rice soup, seafood, fruits (oranges especially), multivitamins, Vitamin D3 and etc., since seven-month-old. At 11-month-old, her EF has improved from 33% to 43%, still malnutrition with 7 kg in weight. fatigue, shortness of breath, tachypnea and difficulty in

feeding. In this case, we wish to make for a more accurate diagnosis and find a management approach with special attention to guidance for treatment in heart failure due to LVNC.

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Biography

Nguyen Dang Dinh Thi is a medical doctor in general surgery especially in urology and andrology for 12 years in Khanh Hoa of general hospital in Nha Trang city, Vietnam. He graduated in 2006 as a general practitioner in Hue of Medicine and Pharmacy College. He learn for master of general surgery in two year and now he is an philosophy doctor candidate in urology surgery. In Vietnam, there is lack of experience in diagnosis and treatment with left ventricular noncompaction cardiomyopathy. So he is worry about her disease. He would like to receive more and more attention from all cardiologist on over the world to help his daughter. He would like to thank for all.

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A novel view to varicose veins pathogenesis: Proteomic analysis

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Introduction: The advent of proteomics techniques allows large-scale studies of gene expression at protein level. Although morphological and anatomical studies indicate that venous wall weakening and sub-endothelial fibrosis characterize varicose veins, the pathogenesis of varicose veins remains poorly understood. The aim this study is to obtain protein expression profiles in patients with varicose veins. Finally, the identification of possible biomarkers may open possibilities for pharmacological inhibition of disease progression.

Methods: Varicose saphenous veins removed during phlebectomy and normal saphenous veins obtained during vascular surgery were collected for proteomics analysis. The same layers of venous wall from varicose and non-varicose veins were incubated, and the proteins released were analyzed by ion mobility spectrometry (IMS-MS) with Synapt G2. All differentially expressed proteins and their pathways, coexpression and physical interactions were analyzed in GeneMANIA and AmiGO databases.

Results: Proteomic analysis of the human vein revealed totally 1389 proteins. 220 proteins demonstrated significant differences in their quantity (more than 1.5 fold) between the two types of venous tissue (p<0.05).

Among the most differentially expressed proteins 10 were found significantly decreased in the varicose vein tissue, and only two-increased. CXXC-type zinc finger protein was more permanent (38-fold down regulated). This protein is known as receptor for vascular endothelial growth factor. Most prominent proteins were proved with Western Blotting analysis.

Conclusion: This study provides novel insights into the biochemical mechanisms of this disease and a basis for further studies. Our proteomics discovery approach suggests that altered connective tissue proteins and increased proteolytic enzyme activity appear to be central to the pathophysiology of varicose veins. Abnormalities in vein wall architecture probably precede the development of valvular incompetence and overt varicosities. Larger studies are required to confirm the potential and clinical role of the identified proteins.





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Recent Publications

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Biography

R Srinanthalogen is a Resident Doctor in Vascular Surgery at Regionshospitalet Viborg in Denmark and is also a part of the Cardiovascular Research Unit where she is involved in two research projects looking for disease biomarkers by using protein and peptide analyzing methods; A novel view to varicose veins pathogenesis: Proteomic analysis and Urine biomarkers for AAA rupture together with Dr. Sigitas Urbonavicius MD, PhD as her superviser. Her curiosity about and interest in understanding the mechanism of vascular diseases drives her towards improvement of different methods of diagnosis, prognosis, and treatment.

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Ziyan Kassam, J Vasc Endovasc Therapy 2019, Volume 4 DOI: 10.21767/2573-4482-C1-006

Happily EVAR after? - The truth about EVAR

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Endovascular aneurysm repair (EVAR) for abdominal aortic aneurysm (AAA) repair has been responsible for a seismic shift in the management of AAAs. Compared to traditional open surgical repair (OSR), EVAR is associated with significantly a improved peri-operative morbidity and mortality. As the technology and applications of EVAR continue to evolve, so does the literature investigating its outcomes. Recently, longer-term follow-up results of randomised controlled trials (RCTs) comparing EVAR and OSR have been published. In light of this new evidence, this review aimed to evaluate the long-term outcomes from such prospective multi-centre RCTs, assessing the effectiveness, advantages and disadvantages of EVAR and OSR, in terms of endograft-related complications, reintervention rates, and longer-term mortality, to determine whether EVAR really is the better option. Following evaluation of the results, the early survival benefit of EVAR is not sustained, with longer-term life expectancy remaining poor regardless of operative modality. Additionally, the development of technical EVAR-related post-operative complications, predominantly endoleaks, stent-graft migration and stent-limb thrombosis requires further corrective re-intervention. Thus, lifelong imaging surveillance is crucial to determine the occurrence of such events, and plan timely intervention to prevent secondary sac rupture. However, this results in EVAR being costlier over a patient's lifetime when compared to OSR. Despite the choice between OSR and EVAR for AAA repair remaining an individualised clinical decision, there is a greater tendency to choose EVAR, predominantly due to increased surgeon familiarity. Data from longterm trials however are based on initial EVAR device generations, thus newer stent-grafts are likely to improve safety and expand their applicability. As a result, further long-term RCTs are warranted to compare the relative benefits and disadvantages of modern EVAR devices.



Figure 1: Classification of Endoleaks: Endoleaks transpire due to continued blood flow through the aneurysm site because of incomplete graft sealing, or back-filling from supplementary small vessels originating from the aneurysm wall. This perigraft blood flow may lead to saccular enlargement and rupture.

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Biography

Ziyan Kassam is currently a medical student in her 5th year at King's College London. She has a great interest in cardiothoracic and vascular surgery, and has participated in a number of research projects. Her interest in this project stemmed from reading about the controversy surrounding the long-term complications that followed endovascular repair.

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Chronic venous insufficiency: a new concept to understand pathophysiology at the microvascular level - a pilot study

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Objectives: The real mechanism for the development of the later stages of chronic venous insufficiency still remains unclear. Venous hypervolemia and microvascular ischemia have been reported to be the consequences of venous insufficiency. The aim of this study was to investigate the effects of induced venous hypovolemia by dorsiflexion exercise in patients with venous leg ulcers.

Methods: Thirty-six participants, all of whom had an ankle brachial pressure index between 0.8 and 1.2 mmHg, were chosen for this study. The participants were divided into two groups: Group A, a non-exercise group and Group B which performed regular exercise in the form of dorsiflexion. The basic assessment, including the history and examination, ankle-brachial pressure index (ABPI), Duplex scan and tcPO2 measurements, was performed on two occasions at the beginning of the trial and after three months.

Results: The tcPO2 level was low in the beginning in all the subjects, but the picture was different at the end of the trial. There was a significant increase in the tcPO2 level (p<0.001) in the patients who performed exercise while there was no difference in the measurements (p>0.05) in the non-exercise group.

Conclusions: Induced venous hypovolemia through regular evacuation of the peripheral venous system improved tissue oxygenation at skin level. Venous hypervolemia may be the main contributing factor for the development of venous hypoxia and microvascular ischemia.

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A challenging surgery for limb salvage after brachial artery injury

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Statement of the Problem: The brachial artery is the most frequently injured artery in the upper extremity (28% of all vascular injuries). There is a high incidence of associated nerve injuries with the brachial artery injuries, accounting for 27% to 44% rate of functional disability after operative procedure. Beyond a golden period of 6 to 8 hours of ischemia, ischemia-reperfusion injury will endanger the viability of the limb. It has been documented that the primary end-to-end anastomosis is superior to the saphenous vein interposition graft, and the later in turn is more preferable than repair with synthetic graft.

Methodology: A 22-year-old male patient was admitted to our department with glass-lacerated wound at his left elbow with signs of brachial artery injury in the form of brisk bleeding, cold and cyanosed upper limb, absent radial and ulnar pulses and associated profound neurological deficits. The patient was significantly having severe rest pain, indicating severe arterial injury and presented to us more than 6 hours after the injury. An average brachial- brachial Doppler index <0.5 was considered diagnostic for brachial artery injury. After patient resuscitation, exposure of the brachial artery at the elbow was done, primary end-to-end anastomosis was performed with difficulty due to >3 cm gap, then repair of the associated nerve injuries (median and radial nerves).

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Findings: The patient had good arterial blood flow postoperatively assessed by clinical examination and duplex ultrasonography, and he was followed 1 month after the operation then every 3-month period. He had residual functional disability due to the associated nerve injuries in the form of wrist and finger drop.

Conclusion: Limb salvage can be done even in cases of severe brachial artery injuries that may be repaired even beyond the golden time, but the residual functional disability due to associated nerve injuries may significantly affect the outcome

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Ratio of pulmonary vascular resistance to occluded pulmonary segments as an indicator of operability of chronic thromboembolic pulmonary hypertension lesions

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Objective: The operability evaluation for pulmonary thromboendarterectomy (PEA) in patients with chronic thromboembolic pulmonary hypertension (CTEPH) is always difficult. In this study, we aimed to identify a better indicator of operability in patients with surgically accessible CTEPH lesions.

Methods: Two-hundred-eight patients with surgically accessible CTEPH lesions who underwent PEA at Beijing Anzhen Hospital from March 2001 to February 2014 were retrospectively reviewed. The occluded pulmonary segments (OPS) were assessed by ventilation/perfusion scintigraphy, pulmonary vascular resistance (PVR) was measured by right heart catheterization and the PVR/ OPS ratio was calculated.

Results: Seven (3.37%) early deaths occurred in the post-PEA period, six late deaths occurred during the mean follow-up period of 58.3±39.7 months; the five year actuarial survival rate was 95.1%±3.5%. The PVR/OPS ratios of early and late death after PEA were significantly higher than those of early and late survival, respectively. A PVR/OPS ratio of <100 dyne/s/cm-5/OPS had much better specificity (88.7% vs. 69.2%) and sensitivity (92.3% vs. 38.5%) than did PVR alone in the prediction of early and late survival. The difference between the two areas under their receiver operating characteristic curves reached statistical significance (z test: Z=1.9917, P=0.046).

Conclusion: The PVR/OPS ratio is a better indicator of operability for surgically accessible CTEPH than is PVR alone. Patients with a PVR/OPS ratio of <100 dyne/s/ cm-5/OPS have better early and long-term outcomes after PEA.

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Biochemical endothelial injury detection of saphenofemoral junction in endovenous laser ablation of varicose veins

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Background: Thrombus formation and extension to femoral or popliteal veins and pulmonary embolism may be though as a complication of EVLT in varicose veins treatment

Aim: We aimed to study the thermal energy effect of the procedure under standardized conditions on biochemical markers of platelets and endothelium activities.

Patients & Methods: 25 patients admitted to vascular surgery dept. of Alexandria armed forces hospital with varicose veins and GSV. Reflux and all treated by endovenous laser ablation during: 7/1/2017-12/25/2018. Venous blood samples were taken from iliofemoral and antecubital veins, before during and one day after surgery of P-selectin, soluble thrombomodulin, fibrin degradation

products and D-dimer.

Results: Mean age of patients was 34.6 +0.5 years, female/male was 3/2 all of them were related to CEAP 2-6 with left side predominance 16/9. There was no immediate rise of P-selectin and s TM in neither iliofemoral nor antecubital veins, where FDPs D-dimer was significantly elevated post operatively in the two regions.

Conclusion: 1480 pulsed mode Nad-YAG diode laser doesn't induce measurable endothelial and platelets activation in iliofemoral region during endovenous ablation of varicose veins.

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Endovenous Laser Ablation versus Conventional Surgerylong term comparative study in treating varicose veins

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Chronic vein insufficiency of the lower extremities is one of the most common benign diseases. It is estimated that varicose veins in the distribution of the great saphenous vein (GSV) are present in about 25% of women and 15% of men. It seems that the appearance and evolution of the disease occur due to multiple factors but mainly the modern lifestyle, characterized by sedentarity, lack of exercise and obesity. Surgery was the gold standard in the treatment of varicose veins. For several decades high ligation at the saphenofemoral junction (SFJ) and stripping of the GSV was the treatment of choice in order to eradicate the diseased vein. Insufficiency of the small saphenous vein (SSV) is treated in a similar way, by ligation at the saphenopopliteal

junction (SPJ) and stripping. In the last years, in the era of minimally invasive surgery, new techniques in the treatment of varicose veins, such as the endovenouslaser ablation (EVLA), have been introduced. In 1999, the first report on EVLA appeared in the literature. Using an 810 – nm diode laser, Bonè first reported the delivery of end luminal laser energy for the treatment of the insufficient GSV. In this study we will compare the outcome of laser ablation and conventional surgery in treatment of patients with varicose veins regarding the immediate postoperative results, pain, recurrence rate and socioeconomic aspects of life with a period of 2 years.

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