

# DAY 1

Keynote Forum



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## Ligation of GSV in sclerotherapy with foam: Technical notes - personal experience

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**Statement of the Problem:** The specific complications after treatment of the incompetent GSV with foam are early recanalization (13%) and superficial thrombophlebitis (7.4%).

**Methodology & Theoretical Orientation:** From 1 January 2016 to today, in 79 patients (CEAP C2-C3), 85 sclerofoam treatments of GSV were performed for varicose veins of the lower limbs with: saphenofemoral reflux >3 sec, saphenous diameter >8 mm and at least 2 varicose thigh/leg collateral. To obtain the GSV, local surgical anesthesia was performed with a surgical access localized to the thigh, always above the end of the Hunter perforator and of the varicose collateral. The GSV is bound and sectioned and finally cannulated with an Arteriofix 8 mm catheter, through which, after washing with physiological solution, the sclerofoam with TDS 3% (ratio 1:4) for a maximum of 4 cc of foam according to Tessari's technique. The remaining saphenous veins are removed with the Muller technique. Controls with ecocolor Doppler are expected at 1, 3, 6 months and 1 year.

**Findings:** Only in 4 patients (4.7%), however very thin, was found, in the first month, a superficial phlebitis of the thigh, between the surgical incision and the

inguinal fold. Recanalization occurred after 1 year in only 8 patients (9.4%). In any case the diameter of saphenous veins was reduced by more than 50%, the saphenous walls were thickened, there was no reflux at the saphenofemoral junction and clinically the patients reported no disturbances. In all other patients, GSV presented with obliterated and reduced caliber.

**Conclusion & Significance:** From these first results we can state that this technique that includes the ligation of the GSV makes the foam more stable than that which occurs with the direct injection of the GSV. Furthermore, a smaller amount of foam is sufficient, with no local and general phenomena and complications

### Recent Publications:

1. Bountouroglou D G et al. (2006) Ultrasound-guided foam sclerotherapy combined with saphenofemoral ligation compared to surgical treatment of varicose veins: early results of a randomized controlled trial. *Eur J Vasc Endovasc Surg* 31(1):93-100.
2. Cavezzi A and Tessari L (2009) Foam sclerotherapy techniques: different gases and methods of preparation, catheter versus

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direct injection. *Phlebology* 24:247-51.

3. Perrin M et al. (2016) **Venous symptoms: The sym vein consensus statement developed under the auspices of the european venous forum.** *Int. Ang.* 35(1):371-98.
4. Rasmussen L H et al. (2011) **Randomized clinical trial comparing endovenous laser ablation, radiofrequency ablation, foam sclerotherapy and surgical stripping for great saphenous varicose veins.** *Br J Surg* 98:1079-87.
5. Shadid N et al. (2012) **Randomized clinical trial of ultrasound-guided foam sclerotherapy versus surgery for the incompetent great saphenous vein.** *Br J Sur* 99(8):1062-70.

### Biography

Paolo Valle is the Professional of Phlebology at Unit of General Surgery S.Eugenio Hospital of Rome. 2000-2003: Director Day Surgery of Phlebology of Hospital S.Eugenio of Rome. 2004-2010: Director Unit of Day Hospital Vascular Pathology of Hospital S.Eugenio of Rome. 2011-2015: Director Unit of Multidisciplinary Day Surgery of Hospital S.Eugenio of Rome. In 1988 he translated the chapters of vascular pathology of Davis's "Textbook of Surgery" di Davis-Christopher. Ed. Piccin Nuova Libreria Padova. "MASTER" of Phlebology with votes 30/30 e Lode (1988/1989) of the Order of the Doctors of Rome. Member of NATIONAL COMMISSION ESTABLISHED BY THE MINISTRY OF HEALTH ON "DAY SURGERY AND OUTPATIENT SURGERY (D.D. 4 Sett. 2012). Chair, speaker and discussant at the National Conferences of the Italian Society of Surgery, of the Italian College of Phlebology and of the Italian Society of Clinical and Experimental Phlebology. He has participated in various national and international phlebology congresses.

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## Robotic vascular surgery

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**Objectives:** The da Vinci system has been used by a variety of disciplines for laparoscopic procedures but the use of robots in vascular surgery is still relatively unknown. The feasibility of laparoscopic aortic surgery with robotic assistance has been sufficiently demonstrated. Our clinical experience with robot-assisted vascular surgery performed using the da Vinci system is herein described.

**Methods:** Between November 2005 and September 2018, we performed 437 robot-assisted vascular procedures. 291 patients were prospectively evaluated for occlusive diseases, 111 patients for abdominal aortic aneurysm, 5 for a common iliac artery aneurysm, 9 for a splenic artery aneurysm, 1 for internal mammary artery aneurysm, 8 for median arcuate ligament re-lease, 8 for endoleak type II treatment post EVAR, 2 for renal artery reconstruction and two cases were inoperable. 5 hybrid procedures in study were performed.

**Results:** 417 cases (96%) were successfully completed robotically, 1 patient's surgery (0.25%) was discontinued during laparoscopy due to heavy aortic calcification. In 16 patients (3.7%) conversion was necessary. The thirty-day mortality rate was 0.5% (2 patients), and early non-lethal postoperative complications were observed in 7 patients (1.6%).

**Conclusions:** Our experience with robot-assisted laparoscopic surgery has demonstrated the feasibility of this technique for occlusive diseases, aneurysms, endoleak II treatment post EVAR, for median arcuate ligament release and hybrid procedures.



Figure 1: The central anastomosis of the robotic abdominal aortic aneurysm repair.

#### Recent Publications:

1. Štádler P, Dvořáček L, Vitásek P and Matouš P (2016) Robot assisted aortic and non-aortic vascular operations. Eur J Vasc Endovasc Surg. 52(1):22-8.

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2. Hsieh C H, Liu S P, Hsu G L, Chen H S, Molodysky E, Chen Y H and Yu H J (2012) Advances in our understanding of mammalian penile evolution, human penile anatomy and human erection physiology: Clinical implications for physicians and surgeons. *Medical Science Monitor* 18(7):RA118-125.
3. Hsu G L, Hung Y P, Tsai M H, Hsieh C H, Chen H S, Molodysky E, Huynh C C and Yu H J (2012) Penile veins are the principal component in erectile rigidity: a study of penile venous stripping on de-frosted human cadavers. *Journal of Andrology* 33:1176-1185.
4. Molodysky E, Liu S P and Hsu G L (2013) Penile vascular surgery for treatment of erectile dysfunction: current role and future direction. *Arab Journal Urology* 11:254-266.
5. Hsu G L, Huang Y P, Tsai M H, Chang H C, Liu S P, Molodysky E and Hsu M C Y (2013) The

venous drainage of the corpora cavernosa in the human penis. *Arab Journal Urology* 11:384-391.

### Biography

Petr Stadler, Prof. M.D., Ph.D., Head Department of Vascular Surgery, Na Homolce Hospital in Prague, Czech Republic. He was certified as a console surgeon for the da Vinci surgical system in August, 2005 at the University of California, Irvine. Dr. Stadler is a member of the Czech Association of Cardiovascular Surgery, the ESVS, the ISMICS, the SRS and a founding member of the International Endovascular and Laparoscopic Society. He has also received a few prestigious honors from the Czech Association of Cardiovascular Surgery for the best publications in 2004 and 2006, the Letter of Appreciation from Korean Society of Endoscopic and Laparoscopic Surgeons in May 2008, the price of the Czech Society of Angiology for the publication in the year 2007 and the best audiovisual presentation in 2009 in USA (ISMICS) and in 2013 in USA (SCVS). He performed also the robotic vascular operations in South Korea, Russia, Poland and India.

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## Chronic superior vena cava syndrome: cause of continuous passage of blood from the territory of venous system to the cerebrospinal venous circulation and possible cohorts for several neurodegenerative diseases

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In superior vena cava syndrome (SVCS), the venous blood from the upper torso reaches the right atrium through four well-known collateral pathways. Unexpectedly, numerous imaging studies showed that in the left brachiocephalic venous stenosis the blood reverses its flow direction and heads towards the jugular and cerebral veins. Venous flow direction is always unidirectional and centripetal, while the bidirectional flow is a unique feature of compensatory venous circle. The jugular vein reflux, well described in the literature, can only be interpreted as a typical centrifugal flow of a collateral circulation. Our hypothesis is that the cerebrospinal venous system itself constitutes a compensation circle, which connects the superior vena cava to the inferior one. This hypothesis is corroborated by the current knowledge on the cerebrospinal venous system that is considered a unique, valve less, bidirectional flow circuit that freely communicates with superior and inferior vena cava. From 2010 to today we have operated for plastic enlargement with patches in the saphenous vein, 120 patients with congenital stenosis of the superior vena cava system. Here we report the angiography of first two patients with vena

cava stenosis; in one we describe the inversion of flow from the location of the obstruction towards the cerebrospinal circle and in the other we describe the passage of venous blood from peripheral tissues to the cerebrospinal circle. The continuous passage of venous blood from the superior vena cava system into the cerebrospinal circulation opens up new perspectives in the explanation of etiopathogenesis of many neurodegenerative diseases (infant neurological diseases, multiple sclerosis, Parkinson's disease and Alzheimer's). In vena cava stenosis then, the cerebrospinal circle is subjected to an increase in pressure, in volume overload and in the possibility, as demonstrated in literature, that infections, emboli or tumors can be transmitted directly from the periphery to the brain through the venous route

### Recent Publications:

1. Sy WM and Lao RS (1982) Collateral pathways in superior vena cava obstruction as seen on gamma images. *Br J Radiol* 55:294-3004.
2. Francesco Puma and Jacopo Vannucci (2012) Superior vena cava syndrome, "Topics

- in Thoracic Surgery”, book edited by Paulo F Guerreiro Cardoso, ISBN 978-953-51-0010-2
3. Batson O V (1940) The function of the vertebral veins and their role in the spread of metastases. *Ann Surg.* 112:138-149.
  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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