Federal State Budgetary Scientific Institution

INSTITUTE OF EXPERIMENTAL MADICINE

St. Petersburg, Russia

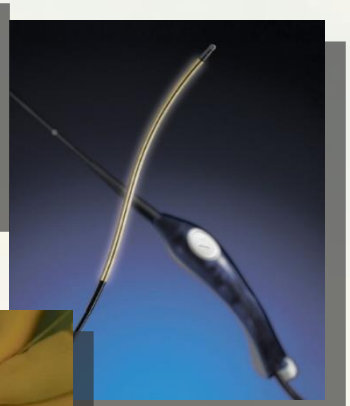
State of Art of Phlebology in Russia

Evgeny Shaydakov

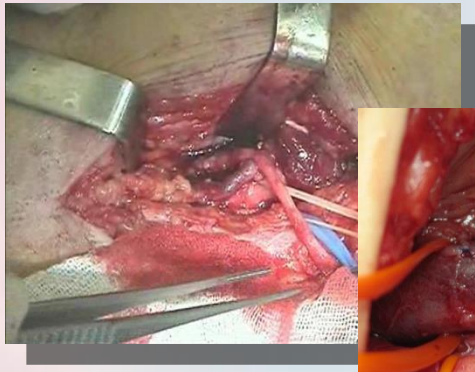
State of Art of Phlebology in Russia

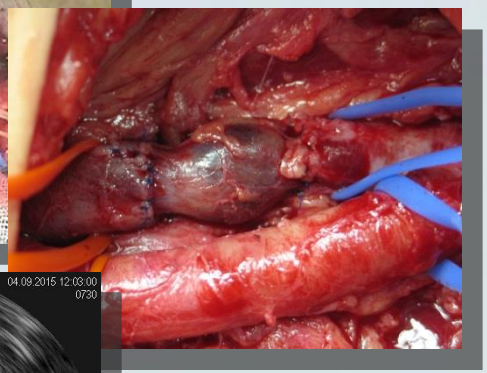
Significant development of

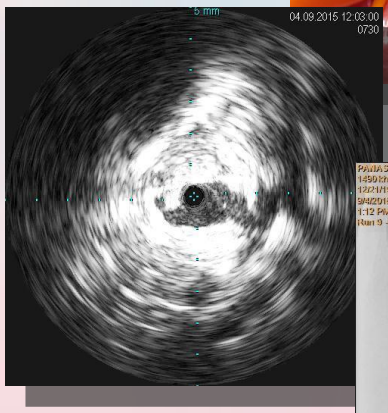
Varicose veins surgery



Deep veins surgery







basing on the clinical and experimental

RESEARCHES

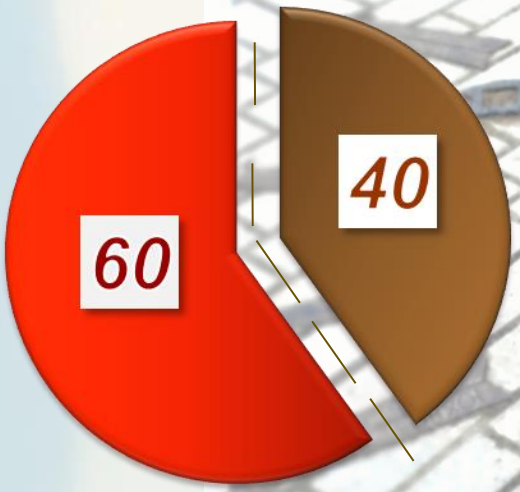
Treatment of the superficial veins incompetence

2015

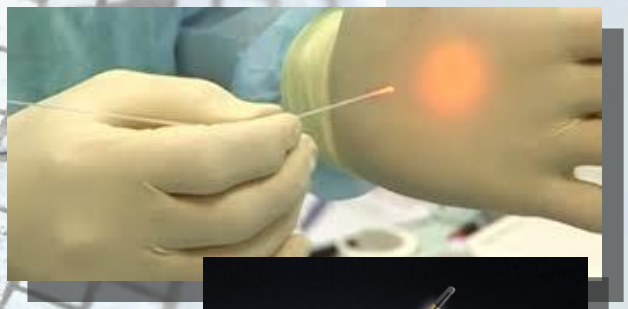
What we see now is the
RISE OF PROPORTION

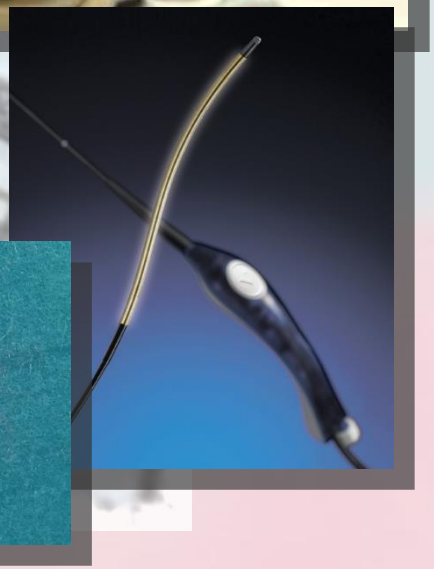
still dominates

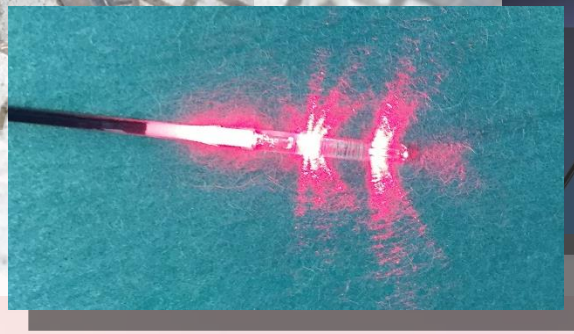
OPEN SURGERY



Endovenous procedures







2011

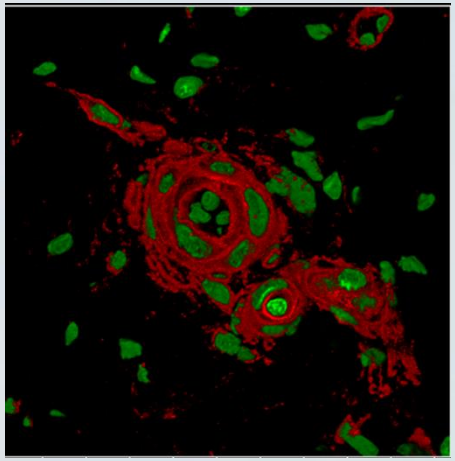
Clinical practice of

Endovenous ablation

is supported by the results of our research *

Morphological studies of GSV after RFA and EVLA had been performed

with the aim to decrease the rate of recanalization



Confocal reconstruction of
arteries in recanalized vein

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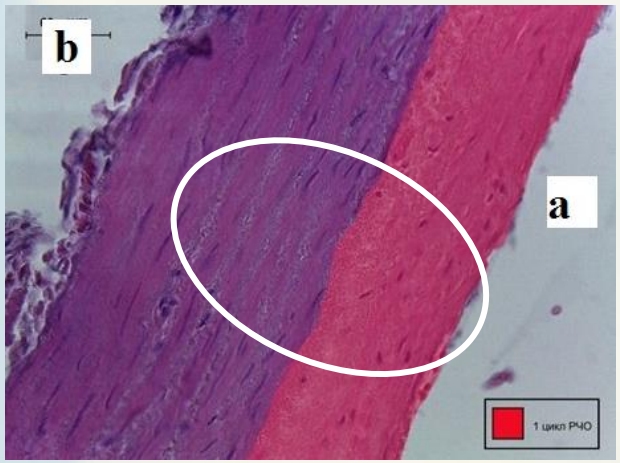
* E.Shaydakov, E. Ilyukhin, D. Rosukhovskiy.
Blood absorption during 970 and 1470 nm laser radiation in vitro.
International Angiology. 2015; 34(5): 475-482

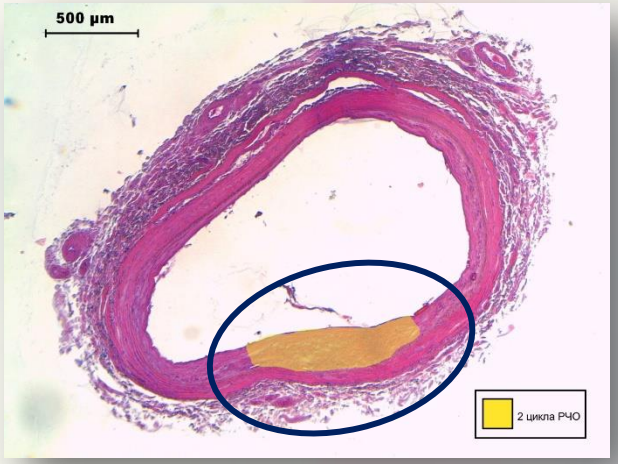
* E. Shaydakov, A. Grigoryan, D. Korzhevskii, E. Ilyukhin, D. Rosukhovski, V. Bulatov, O. Tsarev.
Morphologic changes in the vein after different numbers of radiofrequency ablation cycles.
J Vasc Surg: Venous and Lym Dis 2015; 4(3): 358-363

Radiofrequency ablation

GSV wall after RF cycles

Depth of venous wall damage	Depth of venous wall damage	Depth of venous wall damage
127,5 µm	141 µm	251,5 µm





COMPLETE DEENDOTHELISATION — ***1 RF cycle***

the **deepest layer** of homogenization (coagulation necrosis) is the ***middle of media***

HOMOGENISATION spreads to ADVENTITIA — ***2 RF cycles***

morphological study reveals venous wall filled with splits

HOMOGENISATION of ALL LAYERS OF VENOUS WALL — ***3 RF cycles***

basophilic leukocytosis in intracellular spaces and the same structural abnormality of venous wall

Clinical practice of

Radiofrequency ablation

is supported by the results of our research

- ***Complete damage of venous wall is observed after 3 RFA cycles***

The same principle is used in treatment of incompetent GSV of large diameter (>1,5 cm) as the efficacy of such approach has been proved *

---

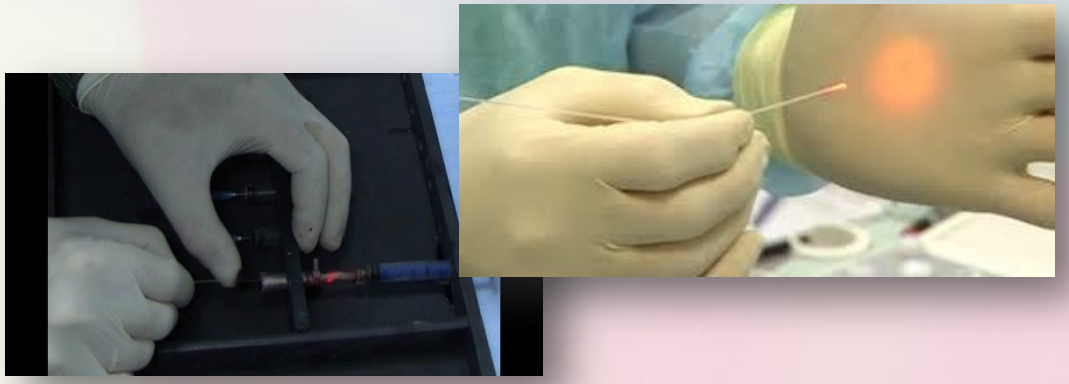
* Evgeny V. Shaidakov, Arsen G. Grigoryan, Evgeny A. Ilyukhin, Vasily L. Bulatov, Dmitry A. Rosukhovskiy. **Radiofrequency ablation or stripping of large-diameter incompetent great saphenous varicose veins with C2 or C3 disease**. ***J Vasc Surg: Venous and Lym Dis*** 2015; 4(1): 45-50

Clinical practice of

Endovenous laser ablation

is supported by the results of our research

- ***Statistically substantial differences were found in endovenous laser ablation simulation in vitro for the 970 nm and 1470 nm laser radiation. Similar temperatures can be reached with 970 nm lasers if power is increased*** *



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* E.Shaydakov, E. Ilyukhin, D. Rosukhovskiy.
Blood absorption during 970 and 1470 nm laser radiation in vitro.
International Angiology. 2015; 34(5): 475-482

DEEP VENOUS THROMBOSIS

ANTICOAGULATION only

is still a prevailing approach

SURGICAL TREATMENT

used to perform only in DVT with flotation

changing patterns

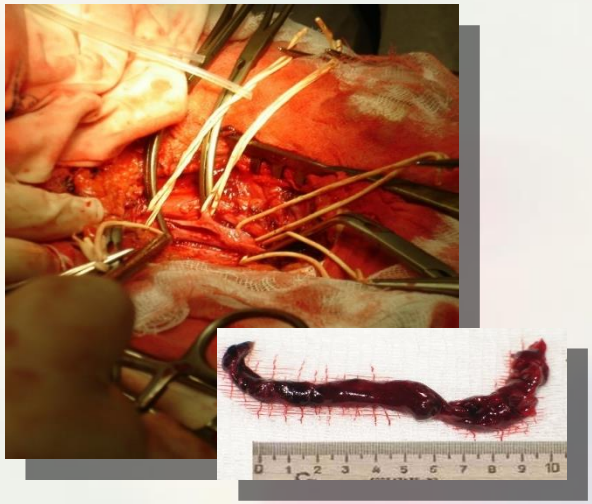
- *Open thrombectomy*
- *Catheter-directed thrombolysis*

are now performed in specialized surgical departments as a main approach

CLINICAL RESULTS OF

OPEN THROMBECTOMY

126 procedures

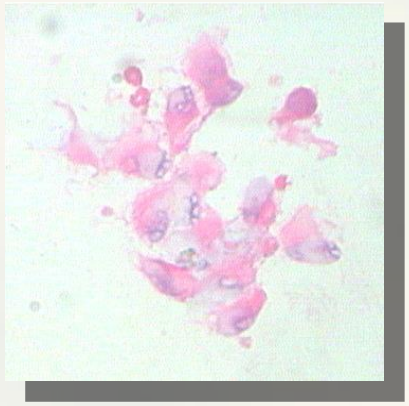


CATHETER-DIRECTED THROMBOLYSIS

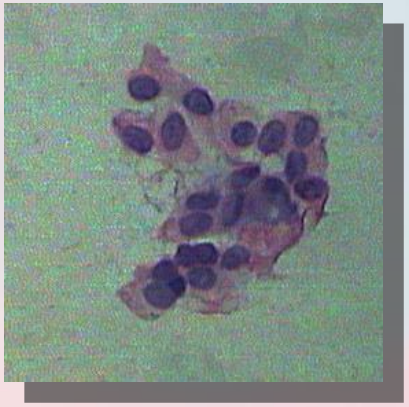
57 procedures

RESULTS OF MORPHOLOGICAL STUDY OF ENDOTHELIUM *after 3-5 weeks of DVT*

Venous **WALL** endothelium



False vacuolae; deformed nucleus of endotheliocyte; cells modified by necrosis; karyolysis; cellular cytolema with impaired tinctorial properties



Venous **VALVE** endothelium

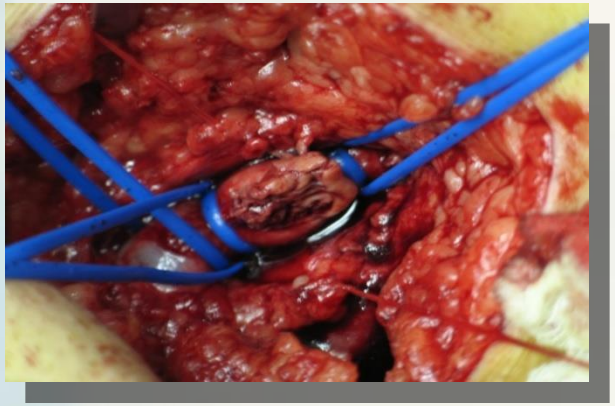
True vacuolae; round or oval nuclei; cytoplasma with normal tinctorial properties: ***VIABLE CELLS***

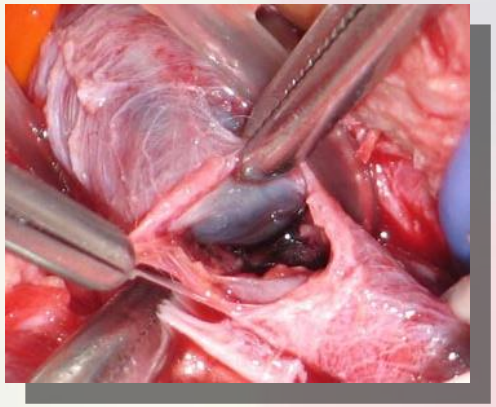
➢ ***Make it possible to offer the algorithm of different approaches in DVT treatment***

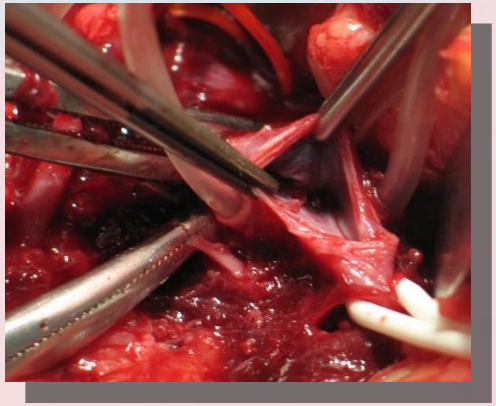
DEEP VENOUS THROMBOSIS

ALGORYTHM OF TREATMENT

- Up to 7 days → *Catheter-directed thrombolysis*
- 7-14 days → *Open thrombectomy*
- 2 weeks to 1 month → *Endophlebectomy*



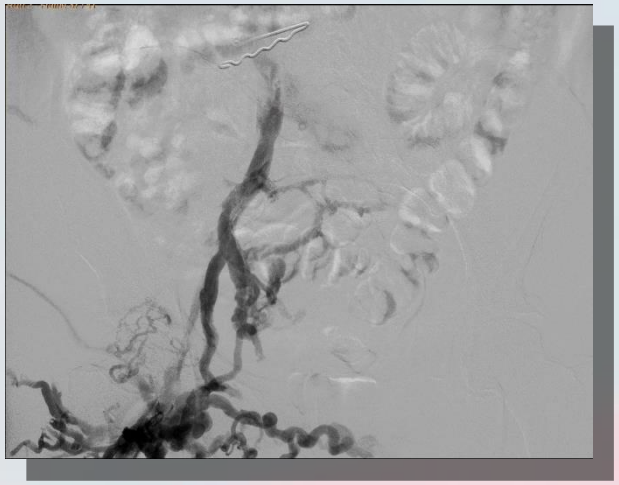




POSTTHROMBOTIC SYNDROM

DEEP VEINS SURGERY

- **OPEN SURGICAL RECONSTRUCTIONS**



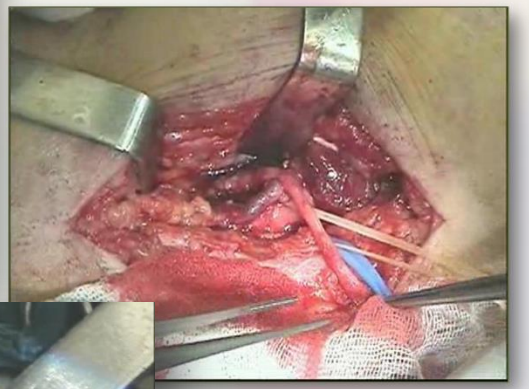
- **ENDOVASCULAR RECONSTRUCTION**

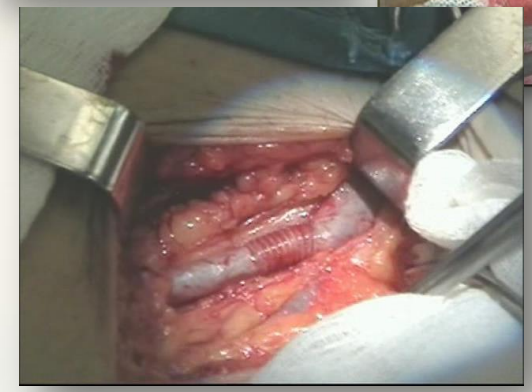
- **SURGICAL REPAIR OF DEEP VALVE INCOMPETENCE**

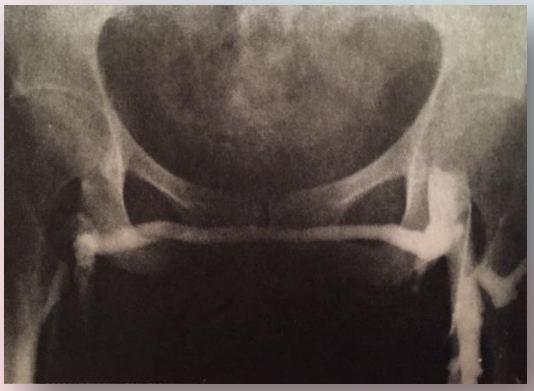
POSTTHROMBOTIC SYNDROM

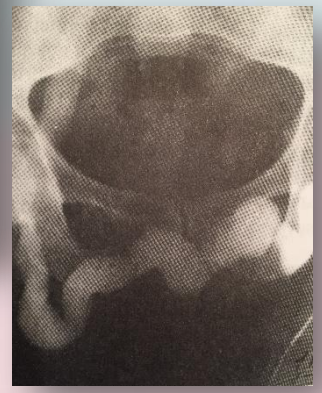
BYPASS SURGERY

MAY-HUSNI PROCEDURE *









along with Palma operation have been the main procedure in the treatment of deep veins obstruction for the long time

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* E.Shaydakov, O.Porembskaya, G.Geroulakos.
The May-Husni Procedure: A Reappraisal.
European Journal of Vascular and Endovascular Surgery. 2015; 50(4): 513-517

POSTTHROMBOTIC SYNDROM

ENDOVASCULAR RECONSTRUCTIONS

with support of our colleagues

Marzia Lugli

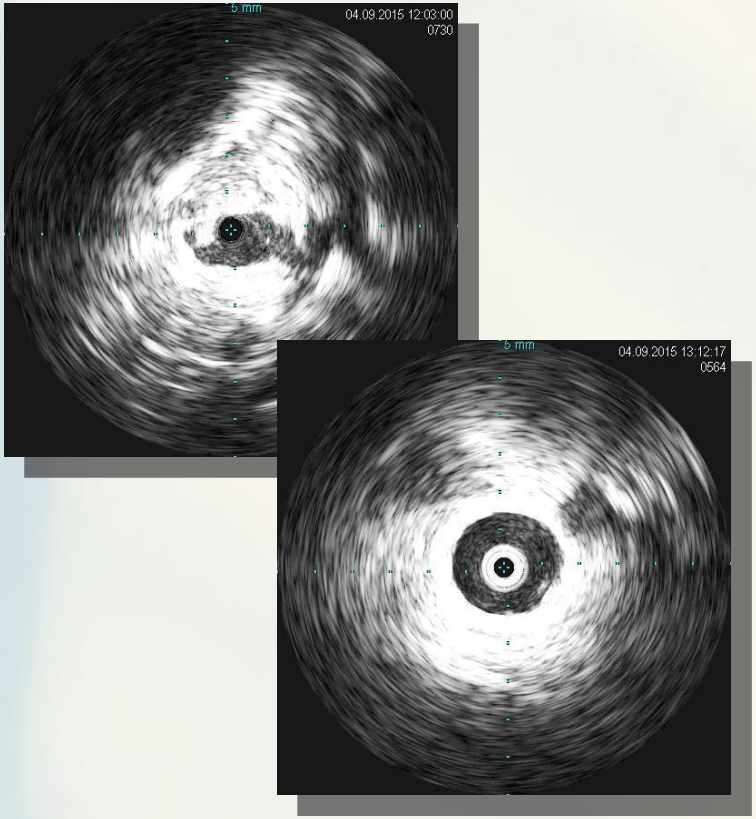
Peter Neglen

have been started

POSTTHROMBOTIC SYNDROM

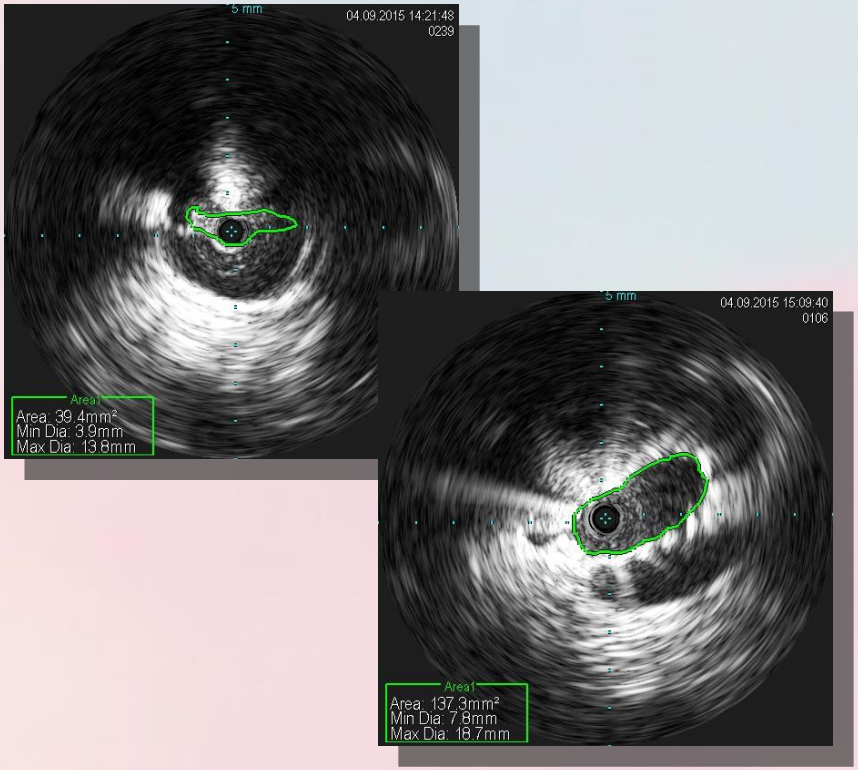
ENDOVASCULAR RECONSTRUCTION

under the IVUS control



Post-thrombotic obstruction

Non-thrombotic obstruction



POSTTHROMBOTIC SYNDROM

ENDOVASCULAR RECONSTRUCTION

Post-thrombotic obstruction

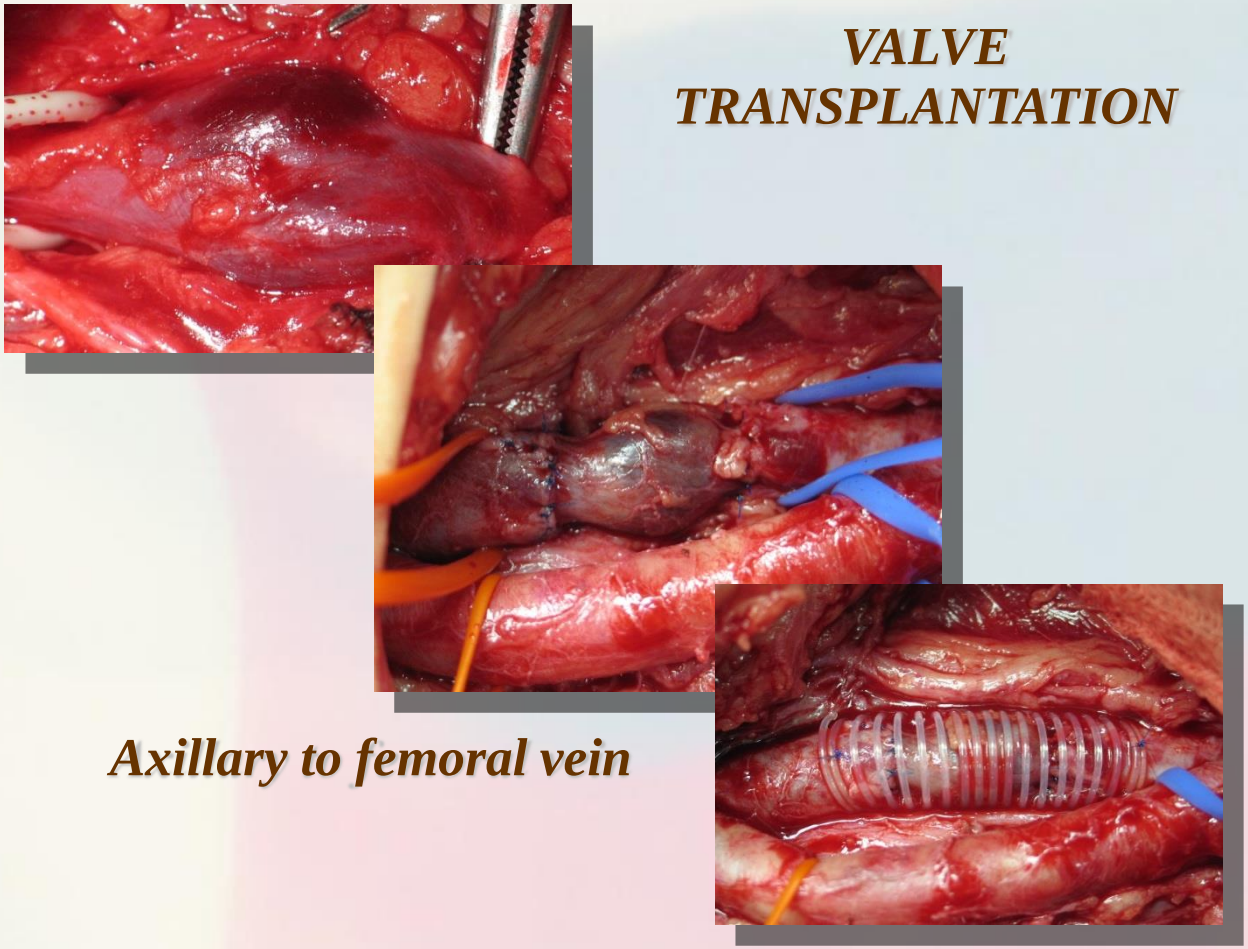
Non-thrombotic obstruction

POSTTHROMBOTIC SYNDROM

SURGICAL REPAIR OF DEEP VALVE INCOMPETENCE

VALVULOPLASTY

VALVE TRANSPLANTATION



Axillary to femoral vein

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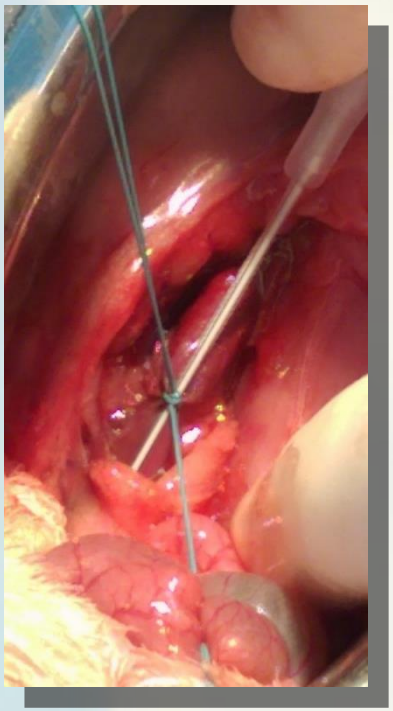
* **Technical aspects of the blood reflux elimination in the femoris vein in case of varicose veins of lower extremities**
EVF 16th ANNUAL MEETING

SCIENTIFIC RESEARCHES

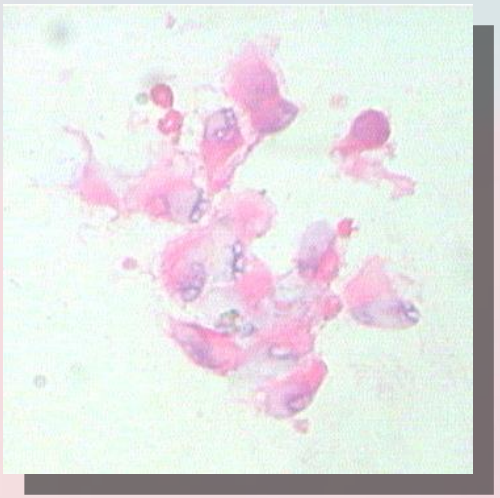
that are OF MAIN INTEREST now

- ***SPONTANEOUS THROMBOLYSIS***



Experimental research of DVT

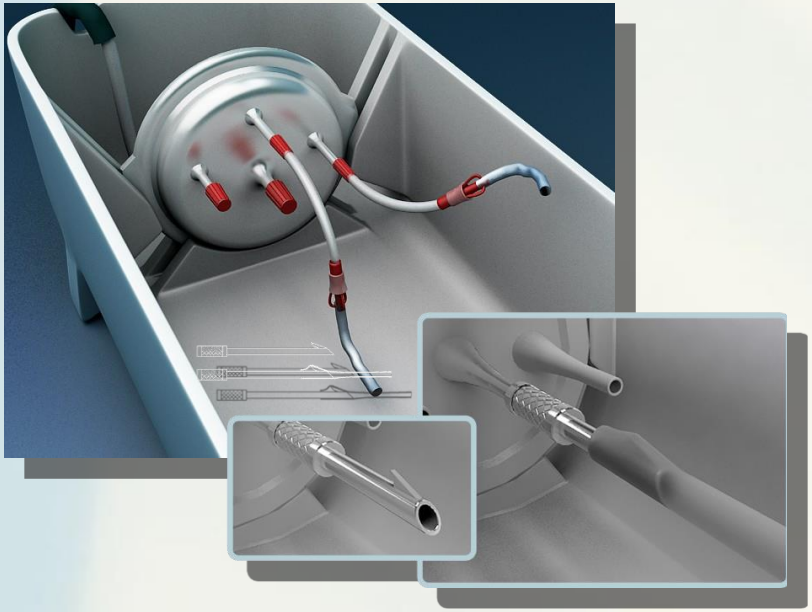
with the evaluation of endothelial function



SCIENTIFIC RESEARCHES

that are OF MAIN INTEREST now

- **SYSTEM OF VENOUS GRAFTS PRESERVATION**



SCIENTIFIC RESEARCHES

that are OF MAIN INTEREST now

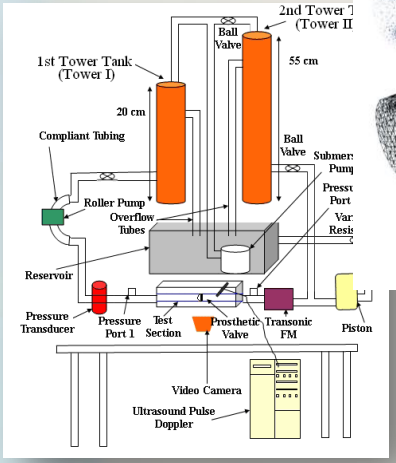
➢ HEMODYNAMIC MODEL OF INFERIOR VENA CAVA BLOOD FLOW

in special conditions

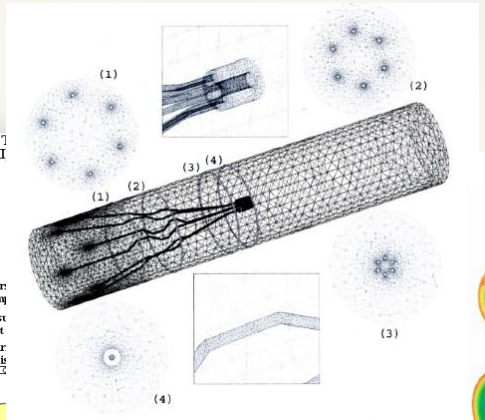
Deep vein obstruction

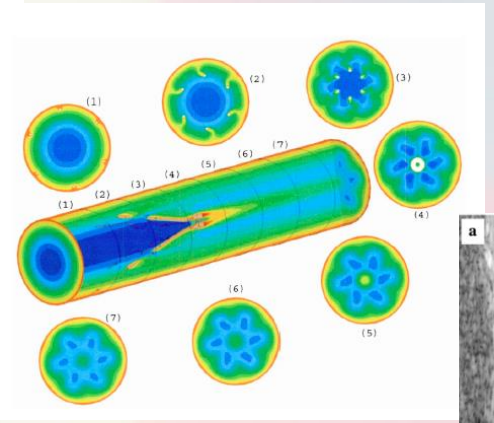
IVC filters

Deep valve incompetence

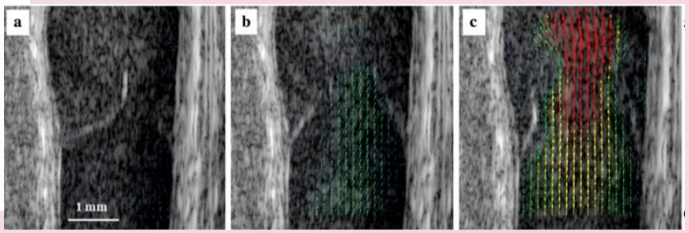


Anim K. Design, development, testing and evaluation of a prosthetic venous valve 2010





Swaminathan T.N. et al. Numerical analysis of the hemodynamics and embolus capture of a greenfield vena cava filter 2006



Nam K.H. et al. Velocity of valvular blood flow in a human superficial vein using HFUS image velocimetry 2012

SCIENTIFIC RESEARCHES

that are OF MAIN INTEREST now

- ***HEMODYNAMIC MODEL OF INFERIOR VENA CAVA BLOOD FLOW***

with the purpose of creating

Biodegradable IVC filters

Implantable venous segment with artificial valve

ST.PETERSBURG VENOUS FORUM
CHRISTMAS MEETINGS

are spent ANNUALY

We cordially welcome you to visit

IX CHRISTMAS MEETINGS
December 2016