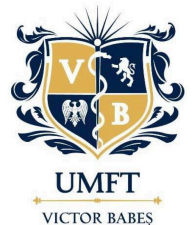


Catheter directed thrombolysis for the treatment of iliofemoral DVT

Prof. Dr. Mihai Ionac



Vascular Surgery
University of Medicine and Pharmacy
Timisoara, Romania





Background

- DVT is treated with anticoagulation regardless of the extent & location of thrombus.
- Iliofemoral DVT – more severe PTS
 - Venous claudication & ulcers
 - Ambulatory venous hypertension
 - Chronic venous insufficiency and recurrent DVT

1. Kumar S et al. J R Soc Med 2013; 106 (11): 441-46.
2. O'Donnell TF et al. J Surg Res 1977; 22: 483-88.
3. Douketis JD et al. Am J Med 2001; 110: 515-19.



Background

Anticoagulation

- ↓ risk of developing PE
- Restricts extension of thrombus without eradicating it
- Residual thrombus – 40% risk of developing PTS

1. Kearon C et al. Chest 2012; 141 (2): e419S-e494S.
2. Kahn SR. Hematology Am Soc Hematol Educ Program 2010; 2010: 216-20
3. Kahn SR. Ann Intern Med. 2008;149(10):698-707.



Endogenous venous recanalization

Fem & pop veins - 50% of pt by 3 months
- **over 90% of patients by 1 year.**

Iliofemoral (CF or iliac) - rarely with anticoagulation alone (10%)
- PTS more frequent & more severe.

1. Meissner MH. J Vasc Surg. 1993;18(4): 596–608.
2. Delis KT. Ann Surg. 2004;239(1):118-126.



Catheter Directed Thrombolysis

Direct intrathrombus administration of a fibrinolytic drug via a catheter or device embedded within the thrombus using imaging guidance.

1. Vedantham S et al. J Vasc Interv Radiol. 2014;25(9): 1317–1325.
2. Semba CP, Dake MD. Radiology. 1994; 191(2):487-494



Advantages of CDT

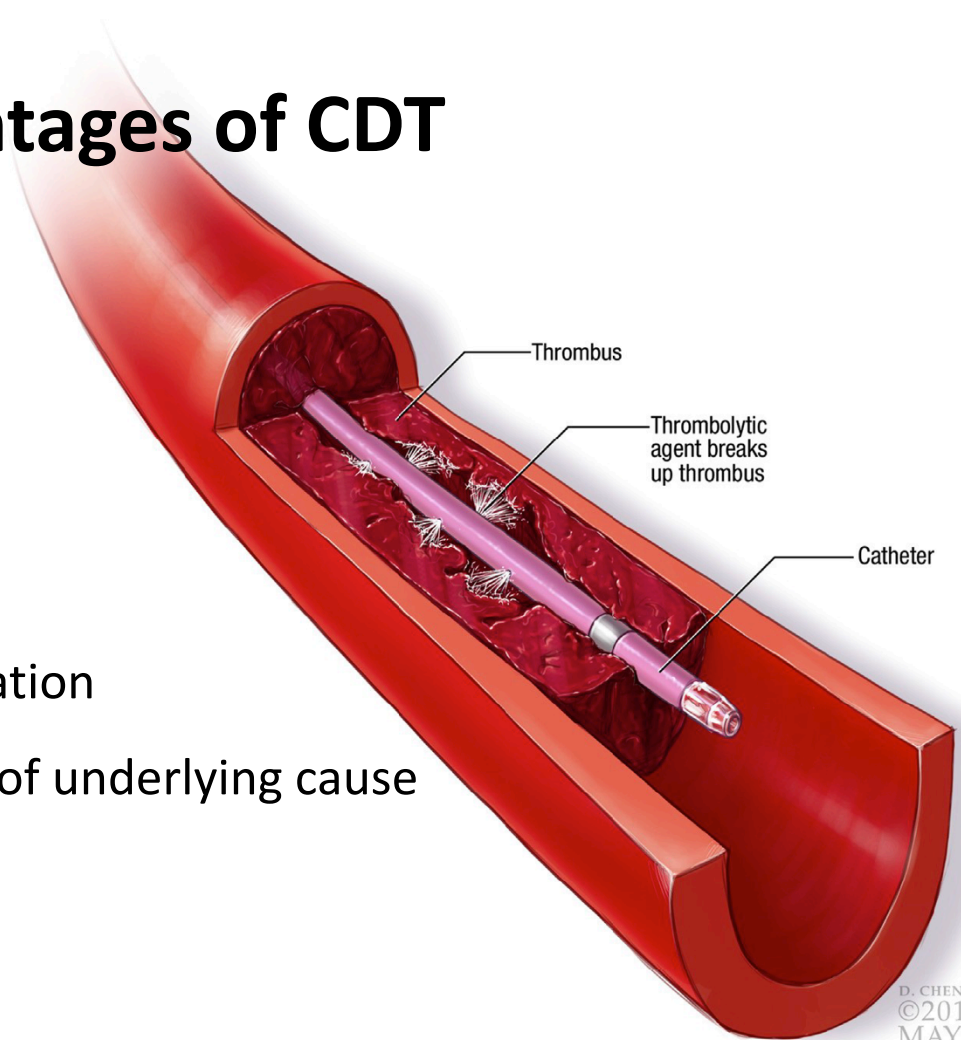
Improved drug penetration

Enhanced clot removal

Lower doses of drug

PCDT – thrombus disruption/aspiration

Catheter access – endo treatment of underlying cause



1. Semba CP, Dake MD. Radiology. 1994; 191(2):487-494

2. Mewissen MW et al. Radiology. 1999; 211(1):39-49.



Which is the evidence?

CaVenT trial: multicenter RCT

- 26% RRR in the risk of PTS over 2 years,
- 3.2% major bleed, no intracranial, no deaths

ATTRACT trial: multicenter RCT

- PCDT reduced severity of PTS

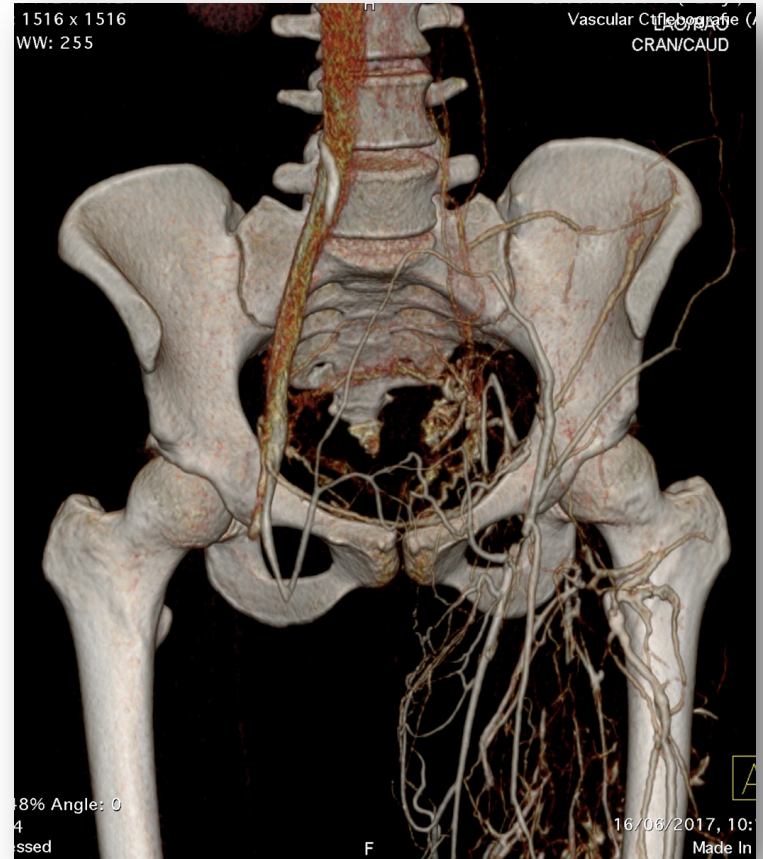
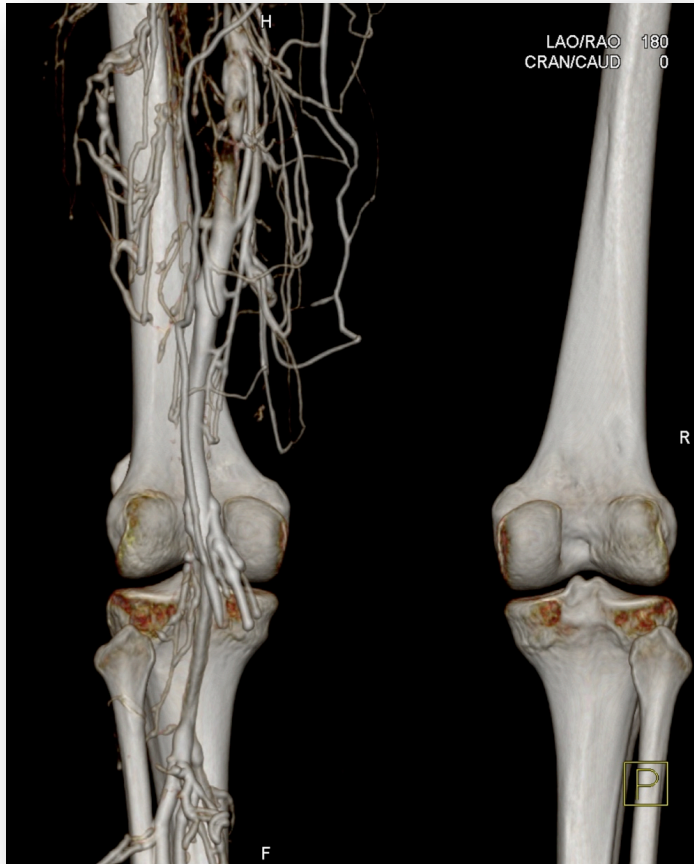
Meta-analysis (n=1118 pt) for stent placement

- resolution of pain, swelling & ulcer in 2/3 of pt, low complications

1. Enden T et al. Lancet. 2012;379(9810):31-38.
2. Enden T et al. BMJ Open. 2013;3(8):e002984.
3. Haig Y et al; Lancet Haematol. 2016;3(2):e64-e71.
4. Vedantham S et al. Am Heart J. 2013;165(4):523-530.e3.
5. Vedantham S et al. N Engl J Med. 2017;377(23):2240-2252.
6. Razavi MK et al. Circ Cardiovasc Interv. 2015;8(10):e002772



Assessment of the thrombus



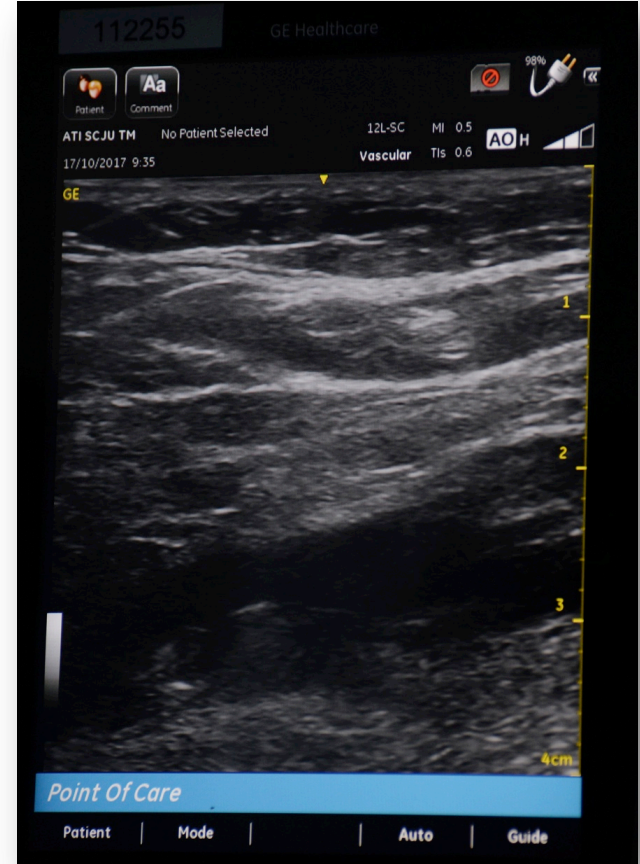


Venous access



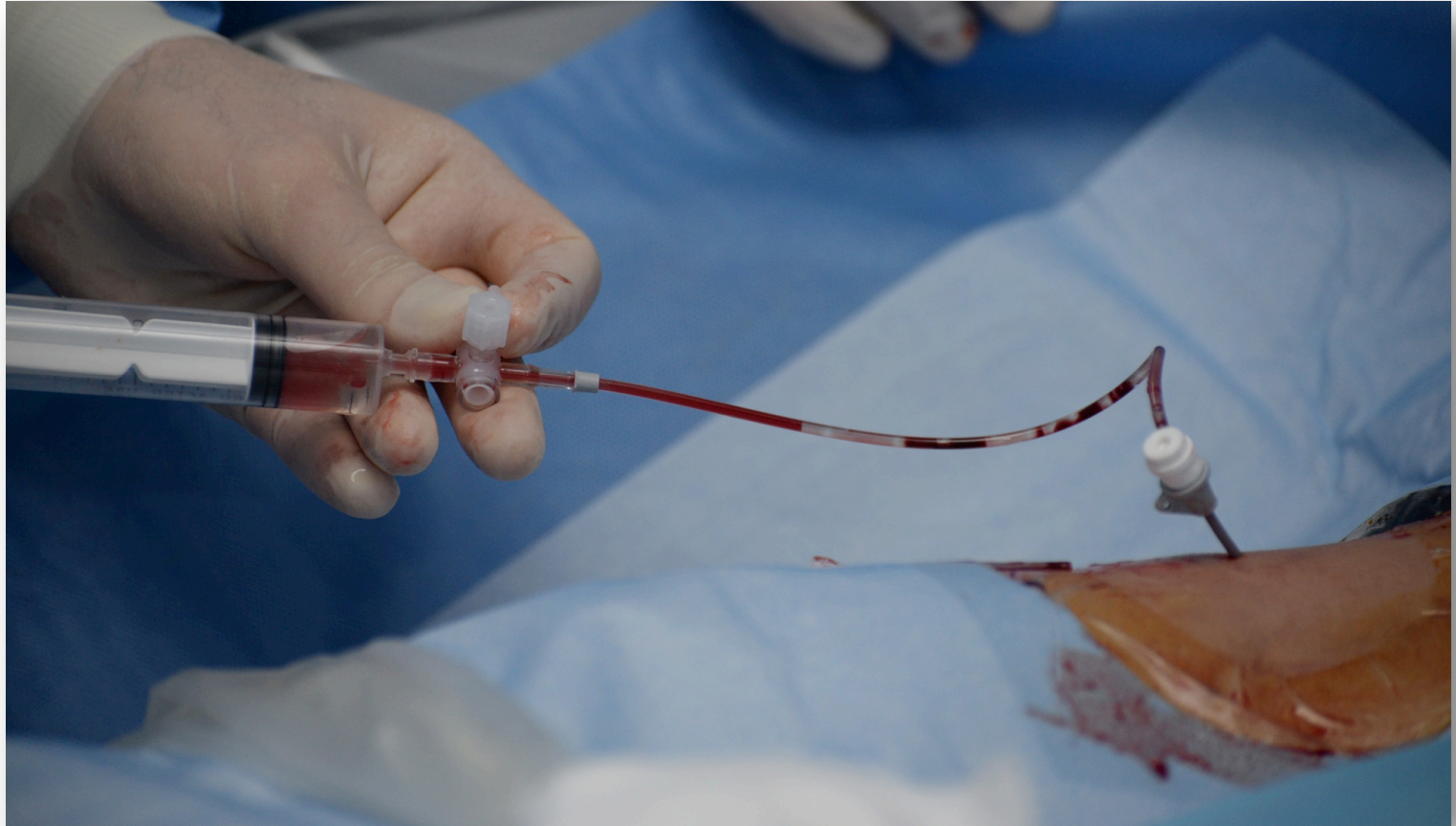


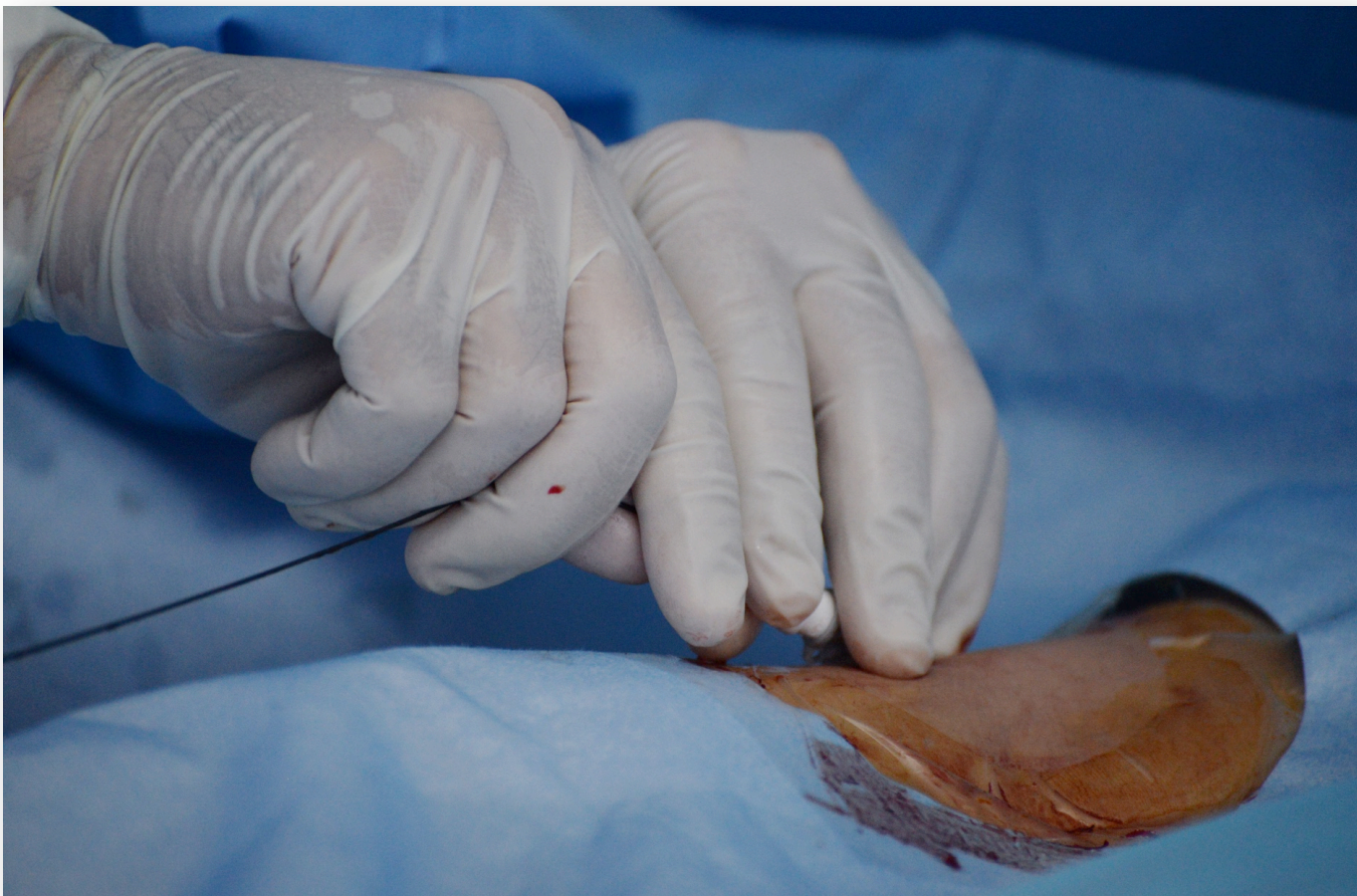
Venous access



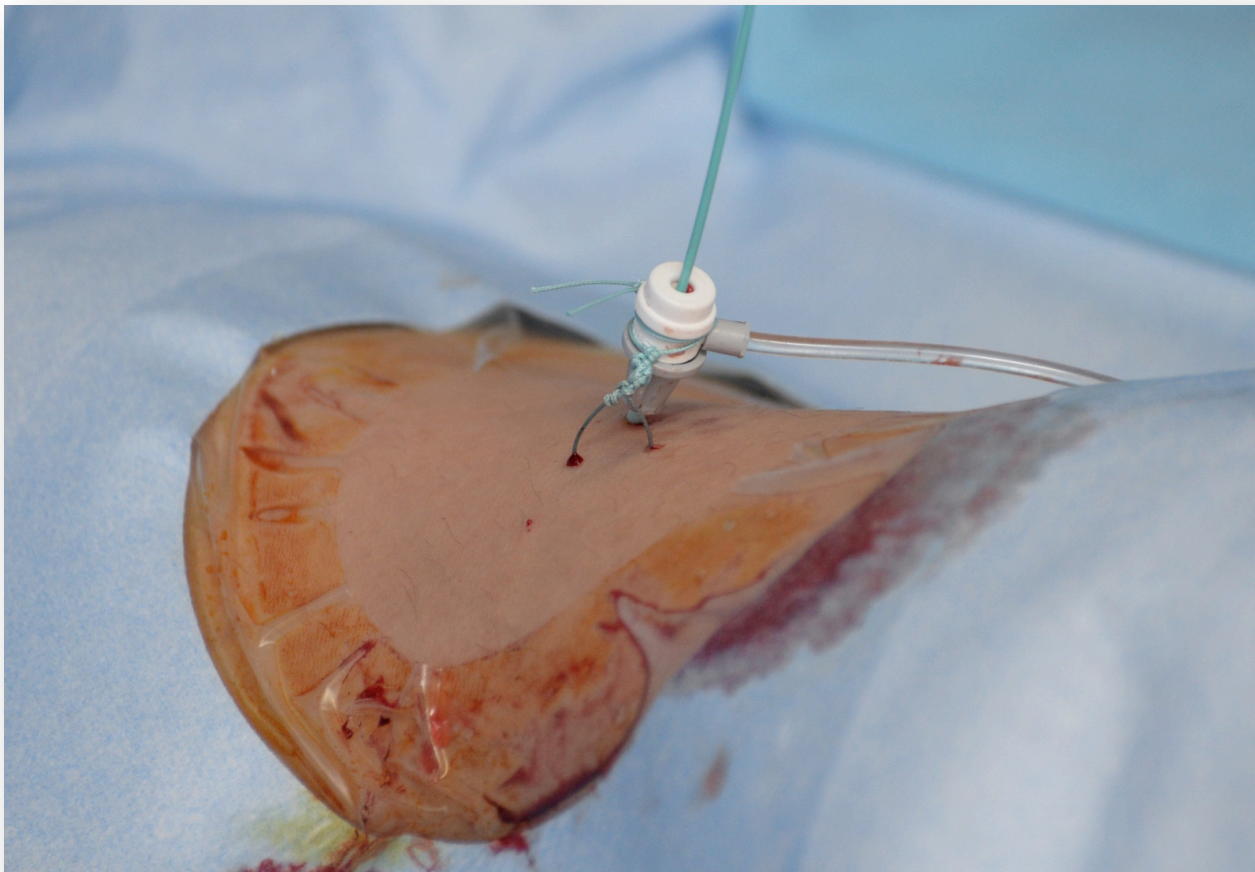


5 Fr sheath











Thrombolysis protocol

- rtPA (Actilyse®) 50mg diluted in 50cc vol and infused 0,5ml = 0,5 mg/hour
- Started proximally
- Check venograms every day
- UFH to PTT 1.2-1.7 times control



1st day



2nd day



3rd day



Post-lysis treatment

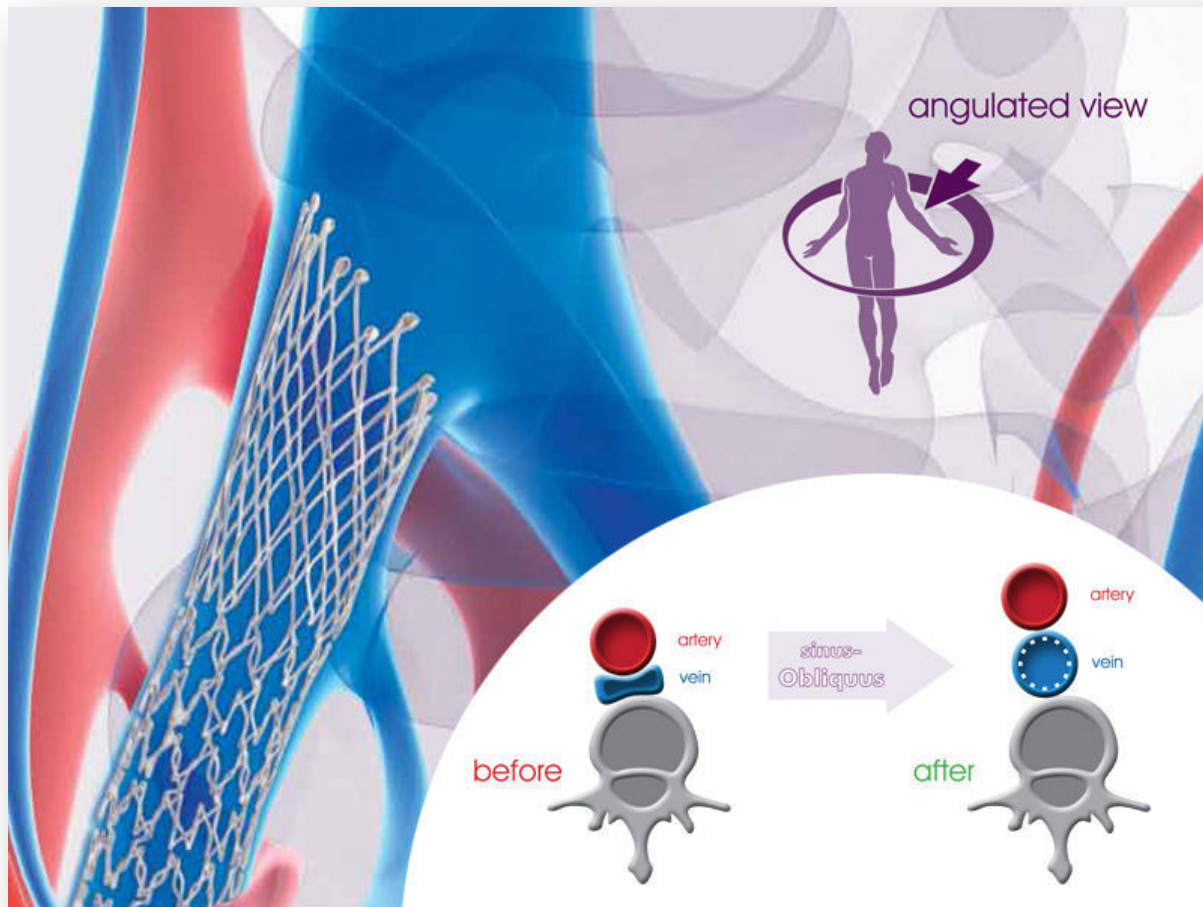
During the 1st weeks – vulnerable to re-thrombosis:

- Rivaroxaban® 2x15 mg/day
- Compression stockings
- Supervised exercises



Indications for stenting

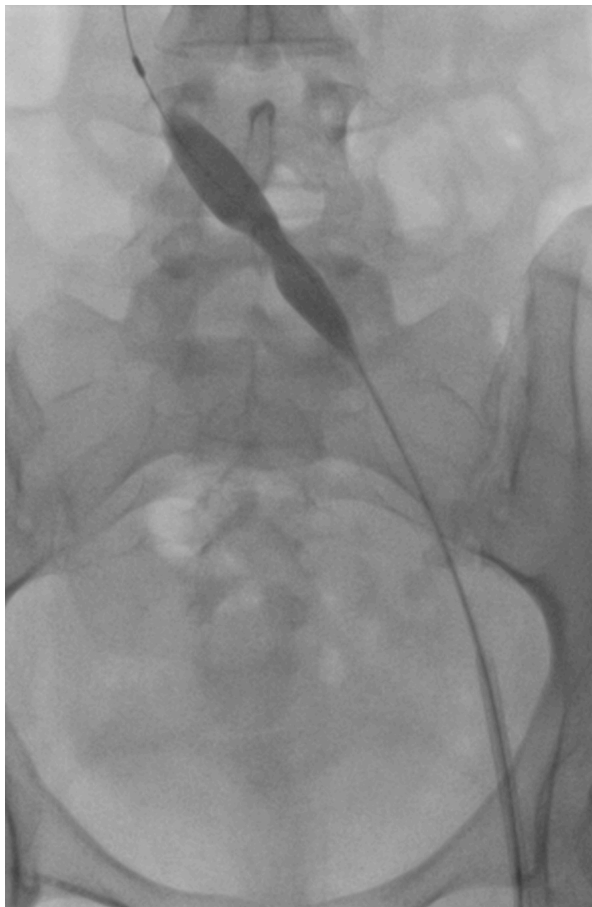
- Residual clot that has not lysed
- Residual stenosis
- Residual occlusion

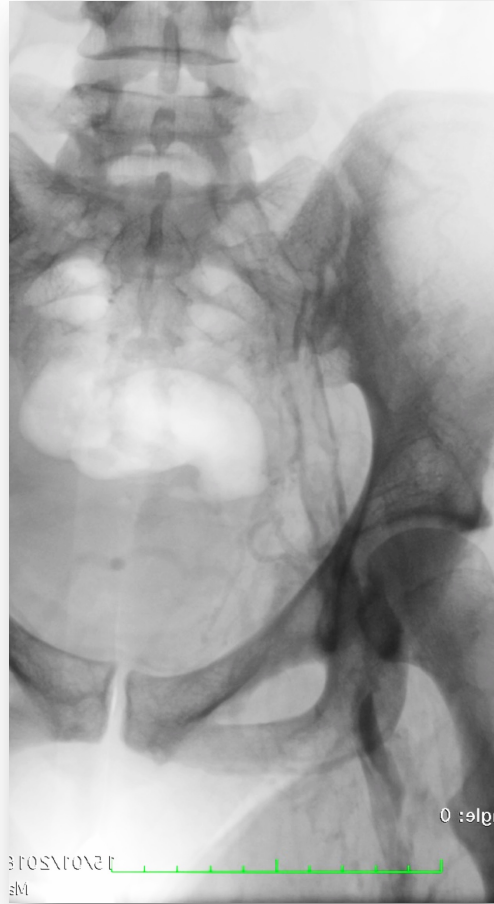


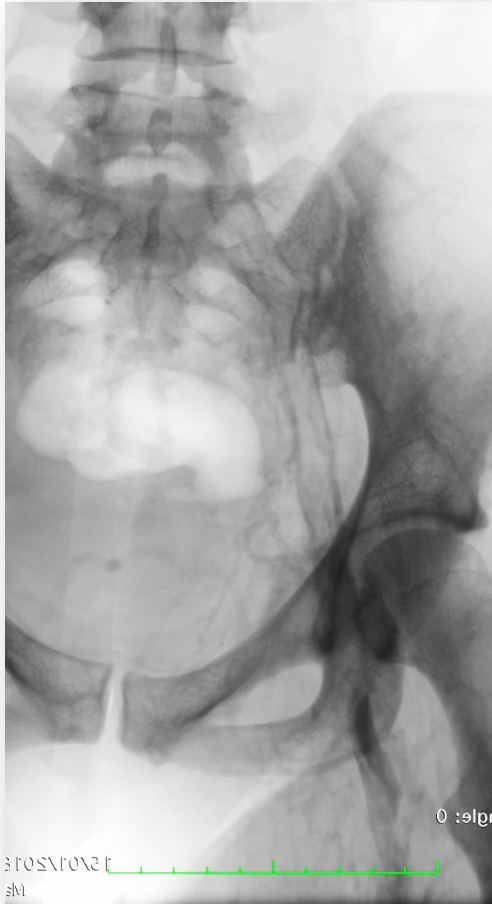


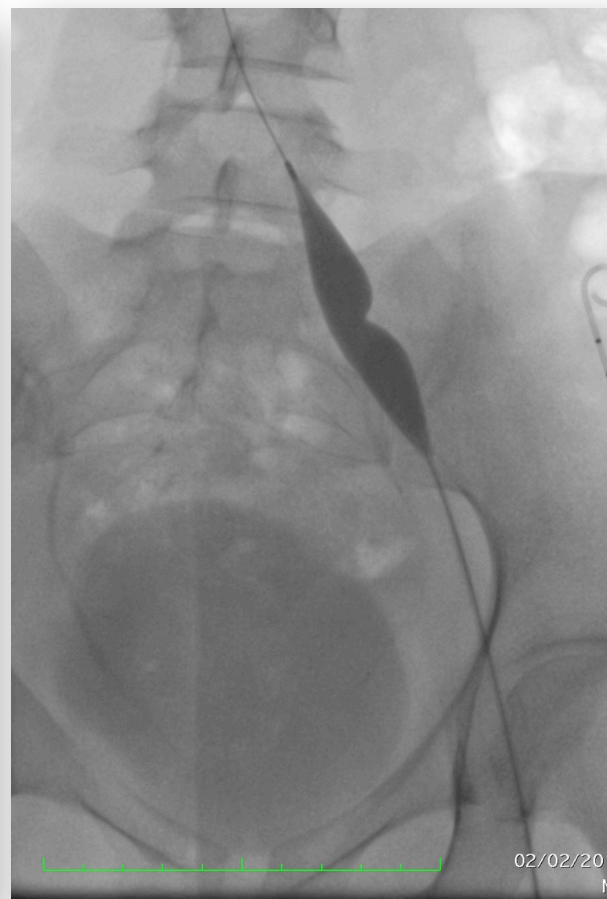
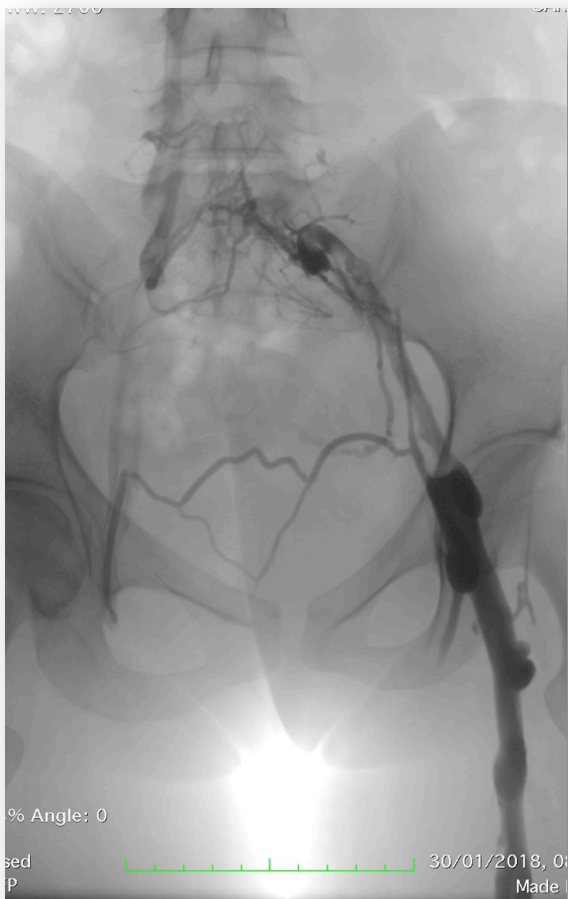


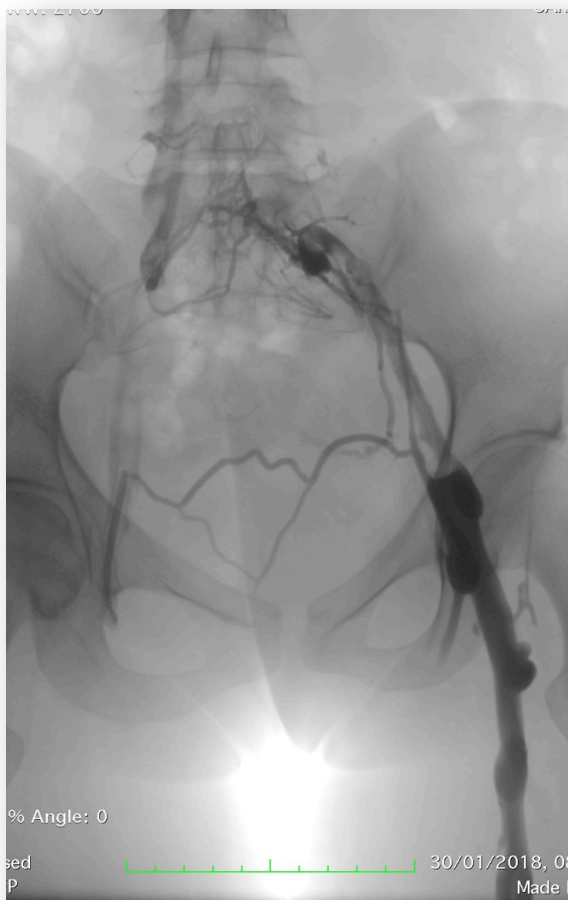
Sinus obliquus (Optimed)













2 y follow-up, young mother

Thank you!

mihai.ionac@gmail.com