



Tailored strategies for thrombus containing lesions

Ralf Langhoff, MD

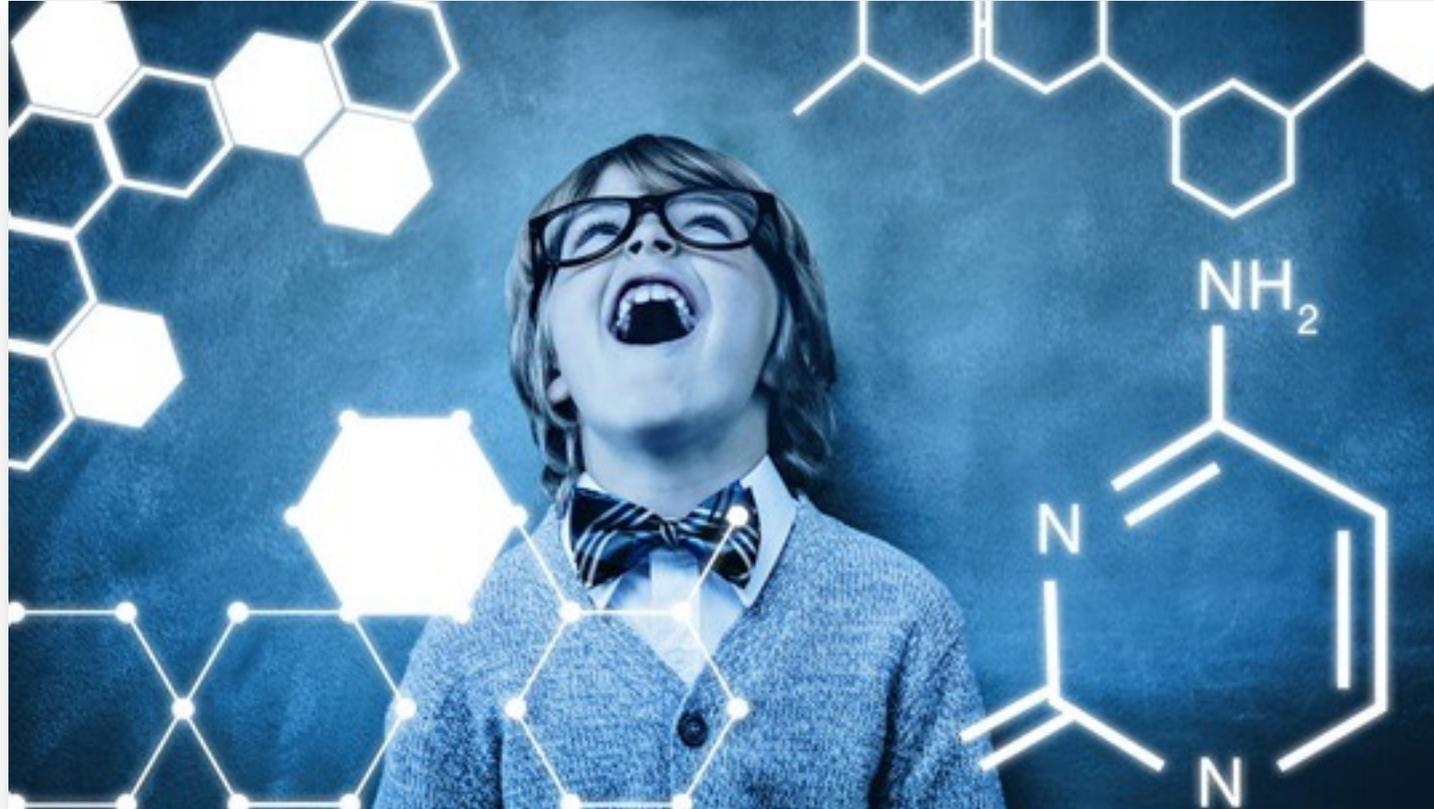
Vascular Centre Berlin

St. Gertrauden Medical Centre

Charité, CC11

Academ. Teaching Hospital University Clinic Berlin - Charité

Arterial Thrombusmanagement



Strong Request



Typical arterial case scenario

ACUTE ONSET: *Thrombembolic (Afib/ Aneurysm,...)*

- fresh thrombus

ACUTE ON CHRONIC:

- Stenosis with fresh thrombus inside

CHRONIC:

- Fibrotic lesion & ?

Therapeutic Options for Thrombusmanagement

- **Thrombusaspiration (catheterdirected)**
- **Mechanical thrombectomy (aspiration, thrombus disruption,..)**
- **Pharmacological thrombolysis**
- **Direct stenting**
- **PTA and ‚pray‘**
- **Open surgery**



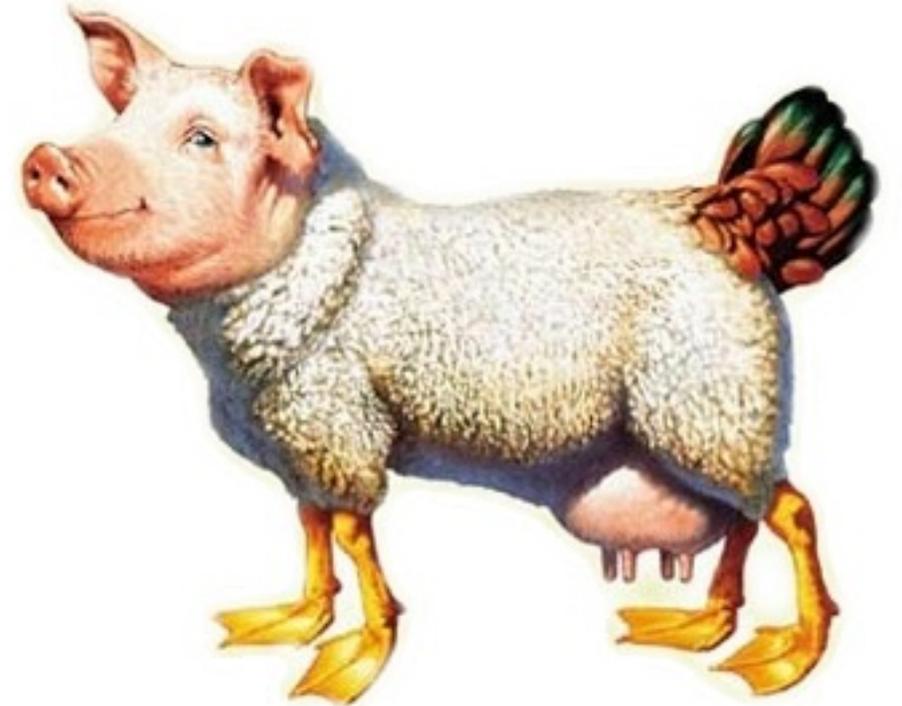
Decision making process is based on...

- ... clinical scenario/ presentation of the patient
- ... wire passage (soft/subintimal/ CTO,..)
- ... run off (single vessel run-off!)
- ... available resources in the cathlab/ material
- ... ICU capacity (thrombolysis)
- ... reimbursement issues



Target Goals/Unmet needs

- Effectiveness to restore flow
- Crossing profile as low as possible
- Sheath compatibility
- Portfolio (Large veins to BTK)
- Tip shape – steerable sheath
- Easy to use
- Lower costs



Typical Clinical Scenario

Case 1:

Elective/urgent referral with acute onset of pain (rest pain or IC)

Therapeutic options:

- local thrombolysis
- mechanical thrombectomy
- open surgery

Typical Clinical Scenario

Case 2:

Acute referral via emergency department with **acute onset of rest pain**

Therapeutic options:

- local thrombolysis
- mechanical thrombectomy
- open surgery



Typical Clinical Scenario

Case 3:

Leg @ risk (acute without collaterals), needs fast reperfusion

Therapeutic options:

- mechanical thrombectomy
- open surgery
- No time for thrombolysis

Typical Clinical Szenario

Case 4:

Elective referral, during the procedure soft wire passage, **not planned**,
(acute on chronic, local arterial thrombosis)

Therapeutic options:

- local thrombolysis!
- mechanical thrombectomy (Rotarex?)
- open surgery

Typical Clinical Szenario

Case 1-4:

No ICU capacity!!! 😡

Therapeutic options:

- Mechanical thrombectomy

Competitors Mechanical Thrombectomy

(arterial only!)

Device	Description
Rotarex™ (BD Bard)	Fresh and organized thrombus, front drilling destruction and aspiration
Angiojet™ (Boston Scientific)	Fresh primarily, hydrodynamic clot destruction and aspiration
Indigo™ (Penumbra Inc.)	Fresh primarily/separator helps
JETi™ (Abbott Vascular)	Fresh primarily, hydrodynamic clot destruction and aspiration
Cath.- Aspiration: Pat Rat™ (BD Bard), Eliminate™(Terumo),...	Fresh only, small thrombus

Either high speed rotation (>90 000rpm) or retrograde fluid jets (1000-10 000 psi)

Case presentation: LIVE-in-the-Box

CLTI patient, female, 47 years

- Diab mell. Typ 1
- End stage renal disease KDIGO Stage 5 with chronic dialysis
- Forefoot amputation with wound healing in 12/2021

Since 2020 Left leg:

- PTA with DCB of popliteal artery 03/2021
- Due to reocclusion thrombolysis and stenting in Sept. 2021
- 01.03.22 admission with Stentocclusion thrombolysis and PTA of popliteal artery
- 03.03.22 early reocclusion
- ...Live-in-the-box



...Live-in-the-box

Material used:

- Antegrade access 6F
- JETi™ 6F Thrombectomy system (Abbott)
- Support catheter CXI™ (Cook)
- Command™ 0.018 wire (Abbott)
- Gladius™ 0.014 (Asahi) for pedal arch
- PTA Balloons 0.014 Coyote ES™ (Boston Scientific)
- Armada™ 5 x 100PTA Balloon
- Supera-Stent™ 4.5 x 120 mm