Vacuum-assisted Aspiration-Thrombectomy

- Extraction of larger clots in shorter time

Penumbra Indigo
Thrombembolism
A. poplitea P3
Truncus tibiofibularis

clot engagement

flexible
directionable
trackable

pump vacuum -1 atm
Thrombembolism
A. tibialis ant. + A. fibularis
A. tibialis ant.
A. fibularis
CAT3 in plantar arch
84 y/o female
acute onset of abdominal pain
Vacuum-assisted aspiration thrombectomy

Penumbra Indigo CAT 8 & SEP 8
two maneuvers of vacuum-assisted aspiration thrombectomy
one single maneuver of vacuum-assisted aspiration thrombectomy
sagittal views SMA
Acute Pulmonary Embolism PE

RV
LV
RV
LV
Acute PE Treatment

ESC Guidelines on the diagnosis and management of acute pulmonary embolism Eur Heart J 2014
i.v. Reperfusion Therapy

- **High-risk** PE
  hemodynamically instable (shock, hypotension)

- **Intermediate-high risk** PE
  risk for *hemodynamic decompensation* 6% within 1 week

- **Immediate**
  *intravenous systemic peripheral thrombolysis* is recommended

Aujesky et al. Prognostic model for pulmonary embolism. Am J Respir Crit Care Med 2005
i.v. Reperfusion Therapy

- **High-risk** PE
- **Intermediate-high risk** PE

- immediate i.v. systemic thrombolysis

2/3 of patients **NO** systemic thrombolysis

**i.v. Reperfusion Therapy**

- **High-risk** PE
- **Intermediate-high risk** PE

- *immediate i.v. systemic thrombolysis*

2/3 of patients **NO** systemic thrombolysis

Relevant risk for major (6.3%)/intracranial **bleeding** (2.4%)

Marti et al. Systemic thrombolytic therapy for acute pulmonary embolism. Eur Heart J 2015
Alternative Catheter-directed Thrombectomy

- Contraindication i.v. systemic thrombolysis
- Increased bleeding risk
- Insufficient thrombolysis
- Operative thrombectomy not justifiable

Caution central „saddle/riding“ thrombus!
Treatment Acute PE

Ultrasound-guided one-shot single wall puncture
mPAP 65 mmHg
Oxygenation 80%
Vacuum-assisted Thrombectomy
Vacuum-assisted PE Aspiration Thrombectomy

Penumbra Indigo CAT 8 & CAT6
mPAP 65 mmHg
Oxygenation 80%

mPAP 30 mmHg
Oxygenation 99%
Conclusion

Vacuum-assisted aspiration thrombectomy versatile alternative treatment for thrombosis/thrombembolism

- arterial
- pulmonal-arterial
  - instable or
  - intermediate-high risk

✓ Immediate treatment!
Peripheral Clot Management and Pulmonary Embolism

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