

Spiral thrombectomy catheter

Gentle, minimally invasive removal of clots from peripheral vessels

Technology

According to the VITAE study, venous thromboembolism (VTE) is one of the most common causes of death (500,000 patients a year in Europe). Each year, more Europeans die from VTE than the combined number who die from breast cancer, prostate cancer, HIV/AIDS and road accidents. The European Society of Cardiology Guidelines (2014) recommend catheter techniques for the treatment of fresh iliofemoral venous thromboses or of pulmonary embolism. Treatment with blood-thinning agents and compression stockings alone is not sufficient to prevent a post-thrombotic syndrome after deep vein thrombosis (250,000 patients a year). This new multifunctional catheter removes clot material over its entire plastically deformable outer wall, before a stent is implanted. Some 8,000 vascular catheter interventions are performed each year at the University Heart Center Freiburg alone (ca. 500,000 catheter interventions a year in Europe), among these many in the venous system.

Innovation

- Reliable elimination of the embolism source by lengthwise expansion of the catheter
- clot material is drawn into the catheter, shorn off and immediately aspirated
- Gentle vessel dilation, no late complications caused by traumatic manipulation of the vessels
- Suitable for long clots (several cm) and large vessels (6-15 mm diameter)
- Reduction of catheter exchanges and thus also radiation exposure
- Moderate costs of catheter set

Predominant Application

- Elimination of sources of embolism and prevention of post-thrombotic syndrome
- Gentle percutaneous and minimally invasive vascular recanalization in cases of deep and long-distance vein thrombosis in the pelvic and leg veins
- Treatment of pulmonary embolisms

Development Status

Functional model



Responsible Scientist

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Branch

Angiology, Vascular Surgery,
Translational Vascular Medicine,
Venous Thrombectomy

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