Percutaneous Mechanical (Aspirative) Thrombectomy on Vascular Urgencies

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

- [ ] Consulting
- [ ] Employment in industry
- [ ] Stockholder of a healthcare company
- [ ] Owner of a healthcare company
- [ ] Other(s)

- [x] I do not have any potential conflict of interest
Mechanical Aspirative Thrombectomy:

- Iatrogenic Bleeding
- Surgery Trauma
- Surgery Time
- Morbimortality

Immediate thrombus removal
ASPIREX S / ROTAREX S

- MECHANICAL THROMBUS REMOVAL DEVICES THROUGH A STRONG NEGATIVE PRESSURE DUE TO A HIGH SPEED ROTATING HELIX.

- NEW “S” DEVICES WITH BETTER NAVIGATION AND SUCTION POWER

- ROTAREX S ➔ ATHHERECTOMY
Target vessel diameter: 3 - 5 mm → Cateter 6F
Target vessel diameter: 5 - 8 mm → Cateter 8F
Target vessel diameter: 8-10 mm → Cateter 10F
ASPIREX S / ROTAREX S

INDICATIONS

- ACUTE ILIOFEMORAL DEEP VEIN THROMBOSIS
- MASSIVE PULMONARY THROMBOEMBOLISM
- ACUTE ARTERIAL OCCLUSION
- POPLITEAL ARTERY ANEURISM ("OFF LABEL")
- DIALYSIS ACCESS ACUTE OCCLUSION
- CHRONICAL ARTERIAL OCCLUSION
  “ Mechanical debulking“
Acute Iliofemoral Deep Vein Thrombosis

- Post thrombotic syndrome 30-60%
- Pulmonary thromboembolism 50%
- 2-4 x > risk of recurrence (3 months) *

* Pharmacomechanical Thrombectomy for iliofemoral deep vein thrombosis Cochrane Vascular Group Feb 2015 Protocol
Thrombolysis X Anticoagulation

1103 patients / 17 RCTs

< PTS
  RR 0.64 (0.52-0.79) P<0.0001 95%

> Complete thrombus removal (lisis)
  RR 4.91 (1.66-14.53) P=0.004 95%

Bleeding
  10% thrombolysis x 8% anticoagulation
Iliofemoral DVT Aspirative Thrombectomy
Scientific Evidence

Guidelines SVS- American Venous Forum
2012

- Early thrombus removal in patients with good functional status and DVT <14 days **GRADE 2C**

- Thrombus removal in patients with limb-threatening due to iliofemoral venous outflow obstruction **GRADE 1A**

- Low Quality Studies

Conclusions
Most data regarding early thrombus removal strategies are of low quality but do suggest patient-important benefits with respect to reducing postthrombotic morbidity. We anticipate revision of these guidelines as additional evidence becomes available.
Iliofemoral DVT Aspirative Thrombectomy
Scientific Evidence

- Catheter-directed Thrombolysis x Pharmacomechanical Thrombectomy
- Secondary Ischemia due to phlegmasia cerulea IC
- Clinical worsening besides anticoagulation IIa C
- First choice to lower risk bleeding patients to prevent PTS IIa B
- Non-indicated > 21 dias or higher risk bleeding III B
- Systemic fibrinolysis must not be used routinely III A

Circulation 2011; 123:1788-1830
Consider venous thrombectomy:

- Symptoms for < 7 days
- Life Expectancy > 1 year
- Resources and expertise are available
- Catheter-direct thrombolysis > Open surgery thrombectomy
Pharmacomechanical thrombectomy for iliofemoral deep vein thrombosis

Protocol

Intervention

Lindsay Robertson, Anne Burdess, Olivia McBride

First published: 14 February 2015

Editorial Group: Cochrane Vascular Group

DOI: 10.1002/14651858.CD011536

Cited by: 0 articles Check for new citations
Iliofemoral DVT Aspirative Thrombectomy Systematic Review

Authors' conclusions: 2016

There were no randomised controlled trials that assessed the effects of pharmacomechanical thrombectomy versus anticoagulation (alone or with compression stockings), mechanical thrombectomy, thrombolysis, or other endovascular techniques in the management of people with acute DVT of the iliofemoral vein that met the eligibility criteria for this review. Further high quality randomised controlled trials are needed.
Acute Iliofemoral Deep Vein Thrombosis - Aspirative Thrombectomy

INDICATIONS:

• Phlegmasia Cerulea Dolens – Ischemia

• Symptoms < 14 days

• Clinical worsening besides anticoagulation

• Patients with good life expectancy
**APPROACH:**

- US-Guided Punction

- Always beginning with inferior vena cava filter implant
- Introducer (Sheath) must be at least 1FR larger than the devices to be used
- Continuous pressurized saline infusion
- Systemic heparinization + local heparinization
- Aspirex®10 F (if possible, or 8F and then 10F)

Veins:
- Common Femoral Vein
- Great Saphenous Vein
- Popliteal Vein
- Small Saphenous Vein
- Right Internal Jugular Vein
Complications

- Venous Perforation
- Pulmonary Thromboembolism
- DVT worsening
ACUTE LEFT ILIOFEMORAL DEEP VEIN THROMBOSIS

M.J.M.L, 43 y.o., FEMALE, PAIN AND ABRUPT LEFT LOWER EXTREMITY EDEMA.
USG: COMUM ILIAC VEIN AND PROXIMAL EXTERNAL ILIAC VEIN OCCLUDED.
ACUTE LEFT ILIOFEMORAL DVT
ACUTE LEFT IlioFemoral Deep Vein Thrombosis

A.M.C, 27 y.o, FEMALE, PRESENTING WITH PHLEGMASIA ALBA DOLENS.
USG: LEFT IlioFemoral Occlusion
ACUTE LEFT Ilio Femoral DVT
ACUTE LEFT IlioFemoral DVT

WARNING!
ACUTE LEFT Ilio Femoral DVT

M.J.P.F, 57 y.o., SEVERE LEFT LOWER EXTREMITY EDEMA, INCREASING WITH HEPARIN SUSPENSION
ACUTE LEFT ILIOFEMORAL DVT
ACUTE LEFT ILIOFEMORAL DVT
ACUTE LEFT ILIOFEMORAL DVT

D.O.M.S, 34 y.o., 10 DAYS SEVERE LEFT LOWER EXTREMITY EDEMA
ACUTE LEFT ILIOFEMORAL DVT

D.O.M.S, 34 y.o., 10 DAYS SEVERE LEFT LOWER EXTREMITY EDEMA
ACUTE LEFT ILIOFEMORAL DVT

M.C.O.T, 40 y.o., SUDDEN LEFT LOWER EXTREMITY EDEMA AFTER 10 DAYS ANKLE IMMOBILIZATION DUE TO A FRACTURE
ACUTE LEFT ILIOFEMORAL DVT

M.C.O.T, 40 y.o., SUDDEN LEFT LOWER EXTREMITY EDEMA AFTER 10 DAYS ANKLE IMOBILIZATION DUE TO A FRACTURE
In Conclusion

• Mechanical Aspirative Thrombectomy is useful in iliofemoral DVT’s treatment

• Technological innovation – still need more quality scientific evidences

• Main goals – morbimortality reduction / early revascularization

• Expertise and resources must be available
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