Venous (Aspirative) Thrombectomy: greather effectiveness with lower risk!

LUIZ ANTONIO FURUYA

EQUIPE SÃO PAULO – CIRURGIA VASCULAR E ENDOVASCULAR
Disclosure

Speaker name: LUIZ ANTONIO FURUYA

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

- 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
ASPIREX S

Target vessel diameter: 3 - 5 mm → Cateter 6F
Target vessel diameter: 5 - 8 mm → Cateter 8F
Target vessel diameter: 8-10 mm → Cateter 10F

IMPORTANT!!!
ASPIREX S

INDICATIONS

- ACUTE ILIOFEMORAL DEEP VEIN THROMBOSIS

- MASSIVE PULMONARY THROMBOEMBOLISM
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
Iliofemoral DVT Aspirative Thrombectomy
Scientific Evidence

Systematic Review

**Intervention Review**

**Thrombolysis for acute deep vein thrombosis**

1. Lorna Watson1, Cathryn Broderick2, Matthew P Armon3
2. 1Cameron House, Leven, UK. 2Centre for Population Health Sciences, University of Edinburgh, Edinburgh, UK.
3. **Editorial group:** Cochrane Peripheral Vascular Diseases Group.

**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 1, 2014.

**Review content assessed as up-to-date:** 4 April 2013.

### 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

- 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 pós thrombotic 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
Iliofemoral DVT Aspirative Thrombectomy
Systematic Review
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)

COMMON 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 ILIOFEMORAL DVT
ACUTE LEFT IlioFemoral DVT
ACUTE LEFT ILIOFEMORAL 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 EXTREMIT Y 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
ACUTE LEFT ILIOfEMORAL DVT

L.N., 34 y.o, SUDDEN LEFT LOWER EXTREMITY EDEMA AND PAIN

AFTER 10F ASPIREX

PTA
ACUTE LEFT ILIOFEMORAL DVT

L.N., 34 y.o., SUDDEN LEFT LOWER EXTREMITY EDEMA AND PAIN

AFTER STENT

10F ASPIREX INTRA STENT
ACUTE LEFT ILIOFEMORAL DVT

L.N., 34 y.o., SUDDEN LEFT LOWER EXTREMITY EDEMA AND PAIN

INTRA OP

3 WEEKS LATER
In Conclusion

• Mechanical Aspirative Thrombectomy is usefull 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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