Percutaneous Thromboaspiration and Thrombolysis in Massive PE: The Impact of Combination Therapy

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DISCLOSURES

• I HAVE A CONSULTANCY AGREEMENT WITH
  • BOSTON SCIENTIFIC
  • ASTRA ZENICA

PULMONARY THROMBOEMBOLISM

• GRAVE PROGNOSIS
• CLINICAL & ANATOMICAL CLASSIFICATION
• ACUTE / CHRONIC / MASSIVE / SUB MASSIVE / MINOR
• TREATMENT OPTIONS
  • THROMBOLYSIS
  • CATH DIR MECH THROMBO ASPIRATION THROMBECTOMY
  • SURGICAL

PRESENTATION

PERCUtANEOUS PULMONARY THROMBO ASPIRATION FOR ACUTE/ MASSIVE PTE

This young 36 years old male met with an accident and had multiple injuries and intracranial hemorrhage. On the second day patient developed massive bilateral pulmonary embolism with severe shock.

On examination BP - 80/40 mmHg, HR - 140/min, SPO2 - 70%

Because of intracranial hemorrhage, anticoagulation/thrombolytic therapy was contraindicated. Patient was too high risk for surgical pulmonary thromboembolectomy

INTERVENTIONAL MANAGEMENT

• Vascular access – right femoral vein
• Sheath – 10 Fr
• 10 Fr Guiding Catheter was used to directly aspirate thrombus from main pulmonary artery and each segmental pulmonary artery.
• Residual thrombus was macerated with 0.035" Guide Wire
RESULTS

PRE-OP
- PASP – 104 mmHg
- SPO2 – 70% (on 6 L/min of oxygen)
- BP     – 80/40 mmHg

POST-OP
- PASP – 44 mmHg
- SPO2 – 99% (on room air)
- BP    – 130/80 mmHg

Procedure Time = 37 minutes
Fall of Haemoglobin = 2gms
Patient was discharged on the 11th post-op day

CONCLUSION

- To the best of our knowledge this is probably the first reported case in the world of massive pulmonary embolism with shock and absolute contraindication to thrombolytic / anticoagulant therapy to be successfully treated by this simple technique

- Percutaneous pulmonary thromboaspiration in massive pulmonary embolism is a safe, effective and cheap technique for treating massive pulmonary embolism with shock in patients who have contraindication to thrombolytic / anticoagulant therapy

Personal experience of Catheter Directed Thromboaspiration for massive pulmonary embolism where thrombolytic/anticoagulant therapy was contraindicated

N = 26
Procedural success – 26/26
Death – 01/26 (because of cerebral haemorrhage)
>50% drop in PAP = (25/26)
>50% drop in clot burden (25/26)
Post procedural SPO2 >95% (24/26)
Post procedural SBP >100 mmHg (24/26)
Mean procedural time = 26 minutes
Mean fall of haemoglobin = 2.2 gm %

The AngioJet® System
Has Three Components
Drive Unit
Single-Use Pump Set
Family of Catheters

PERCUTANEOUS PULMONARY THROMBECTOMY AND THROMBOLYSIS FOR PTE:
PERSONAL EXPERIENCE

- NO OF PATIENTS : 45
PERCUTANEOUS PULMONARY THROMBECTOMY AND THROMBOLYSIS FOR PTE : PERSONAL EXPERIENCE

- >50 % DROP IN PAP : 44/45
- SIG IMPR IN spO2 : 43/45
- > 50% RED IN CLOT BURDEN : 44/45
- POST PROC SBP > 100 mmHg : 41/45
- MEAN PROC TIME : 1227.8min
- MEAN FALL IN Hb : 2 gm %
- DEATH : 1/45

CONCLUSION

- Percutaneous catheter directed thrombolysis and thrombectomy is a very useful, life saving procedure for treatment of acute / massive pulmonary embolism with cardiogenic shock. It is a better alternative to Surgical Thrombectomy or Thrombolysis alone.