Targeted Adjustable Pharmaceutical Application System (TAPAS) Catheter Assisted Thrombolysis in Cirrhotic Patient Contraindicated For Thrombolysis First in Man Case Report

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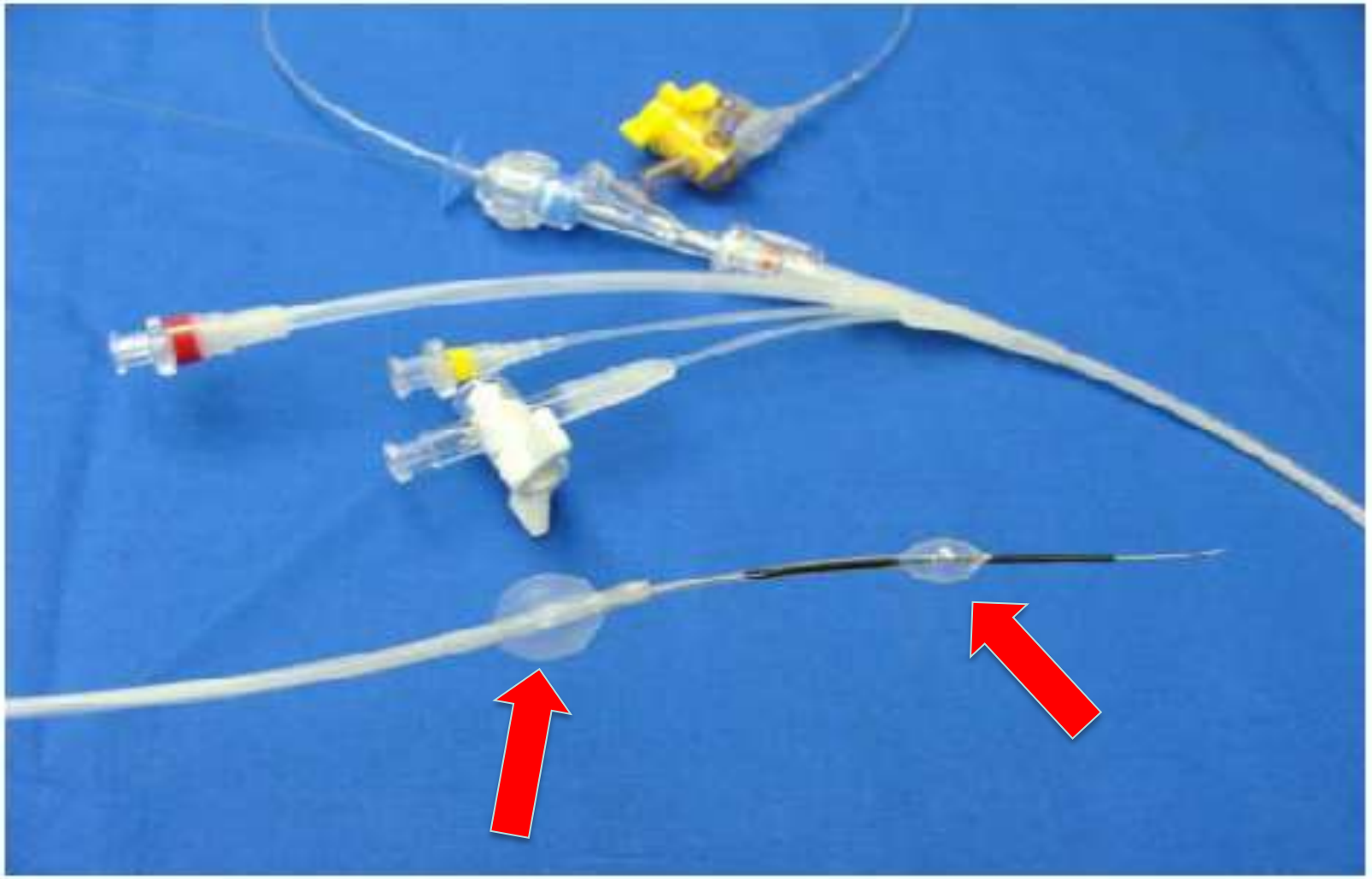


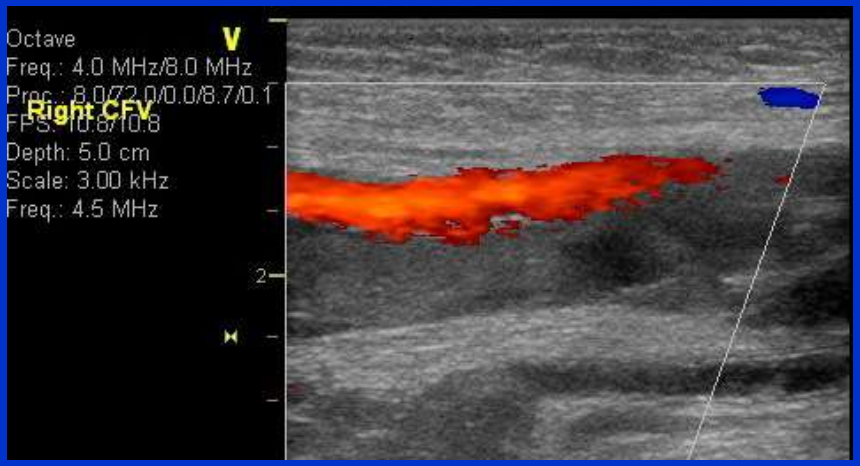
TAPAS catheter (Thermopeuti X, Inc., San Diego, CA, USA)

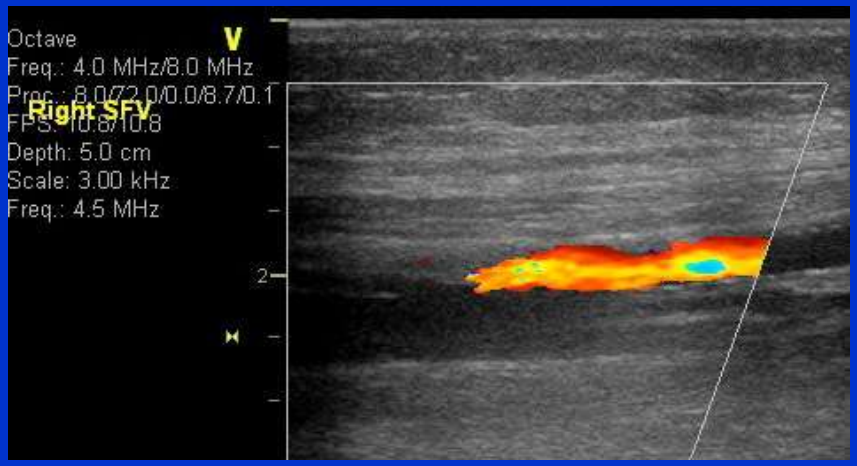
History

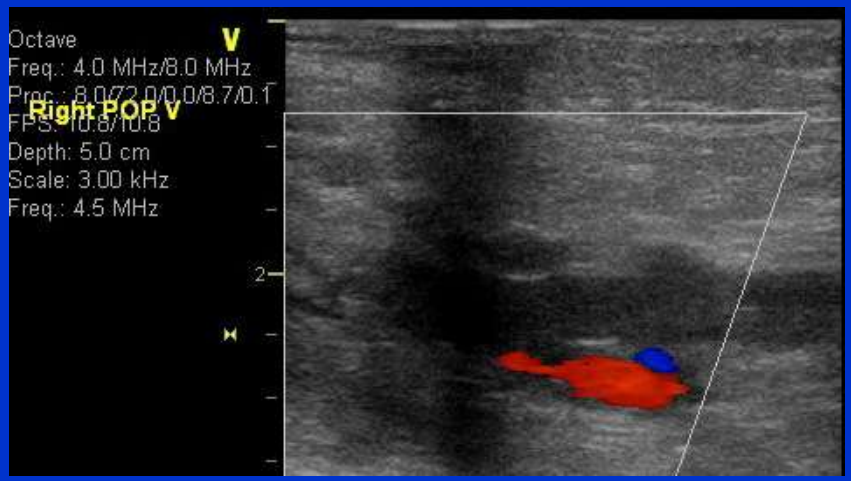
- 82 y/o woman
- HCVD, DM, IHD, liver cirrhosis, HBV related, Child C (hypoalbuminemia, ascites, hepatic hydrothroax, hepatic encephalopathy, coagulopathy, splenomegaly with thrombocytopenia, EV), chronic renal insufficiency, peptic ulcer disease
- Bilateral legs edema, especially right side for two weeks

- D-dimer 2800 (cutoff value < 500) Plt 85000/ul Prothrombin time (INR 1.5-2.1), Cr 1.8 md/dl
- Echo: DVT over right proximal femoral vein
- Start heparin pump but in vain (aPTT 50-60 sec), later DC due to black color stool, high risk of bleeding, stool OB 1+

Ultrasound

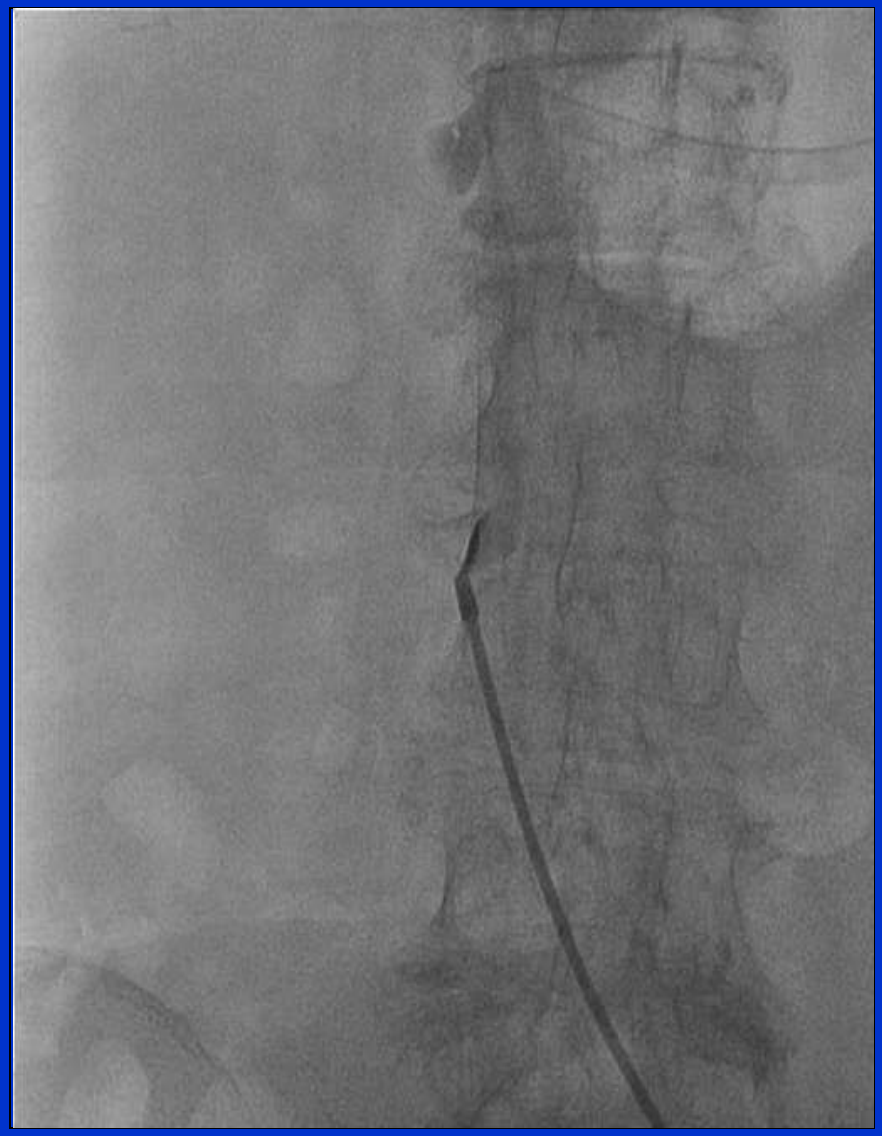






Thrombus over right common and proximal superficial femoral vein

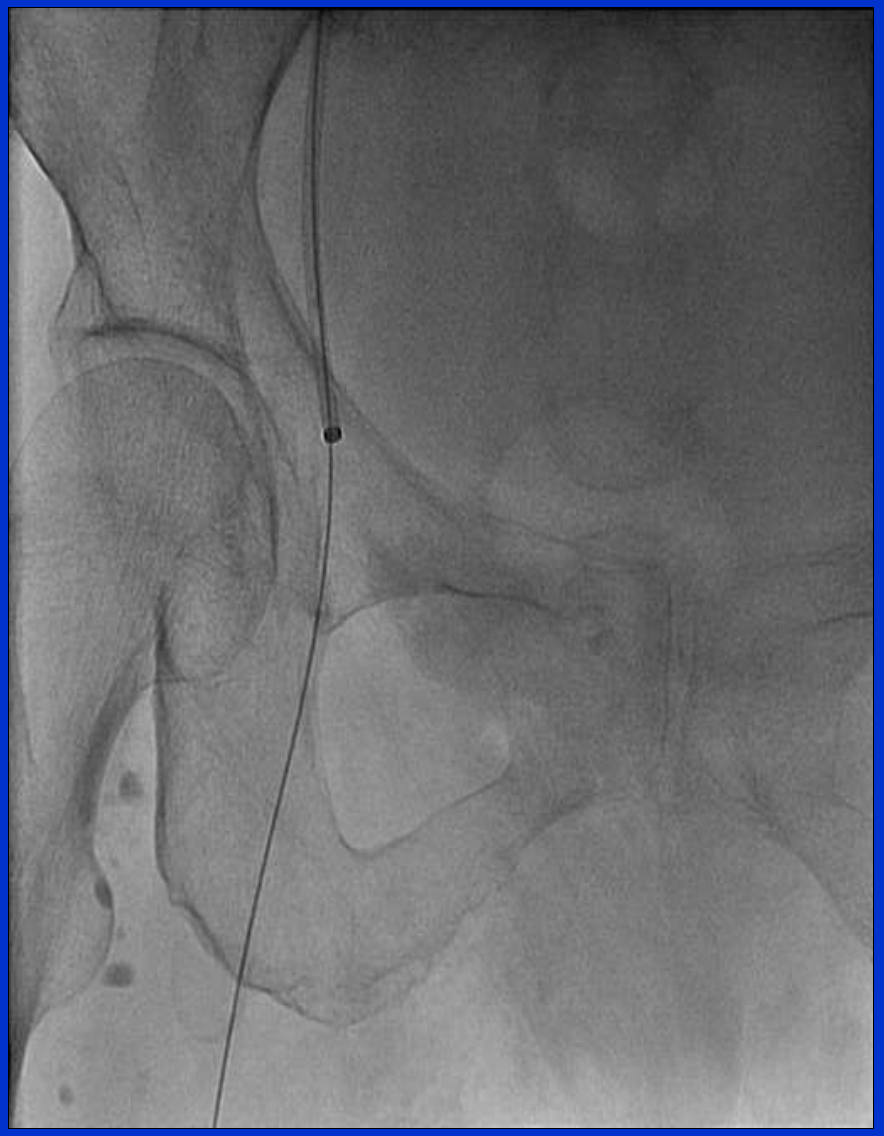
PTA



7Fr sheath, Retrievable G2X IVC Filter

CMUH

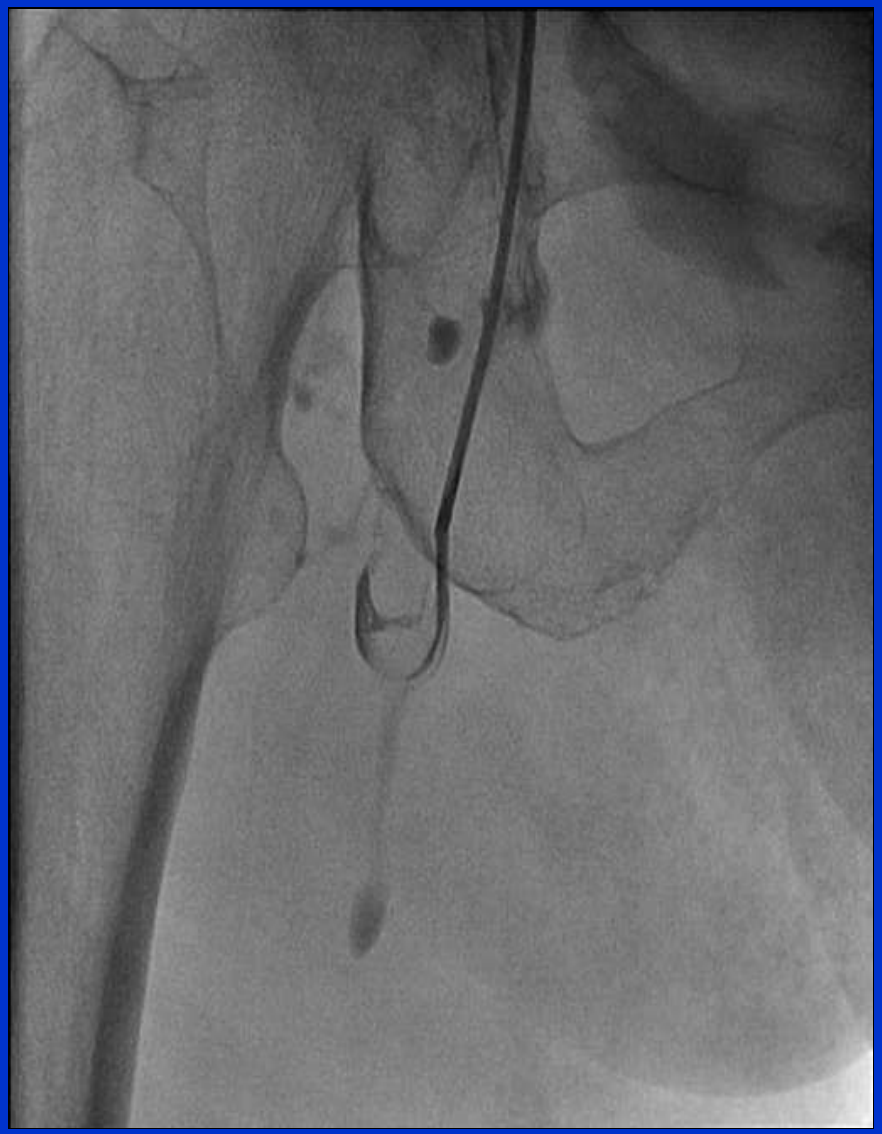
6Fr JR4 catheter,
.035” Terumo wire



8Fr Cook Crossover sheath

TAPAS catheter, Heparin 5000 units, urokinase 240000 units

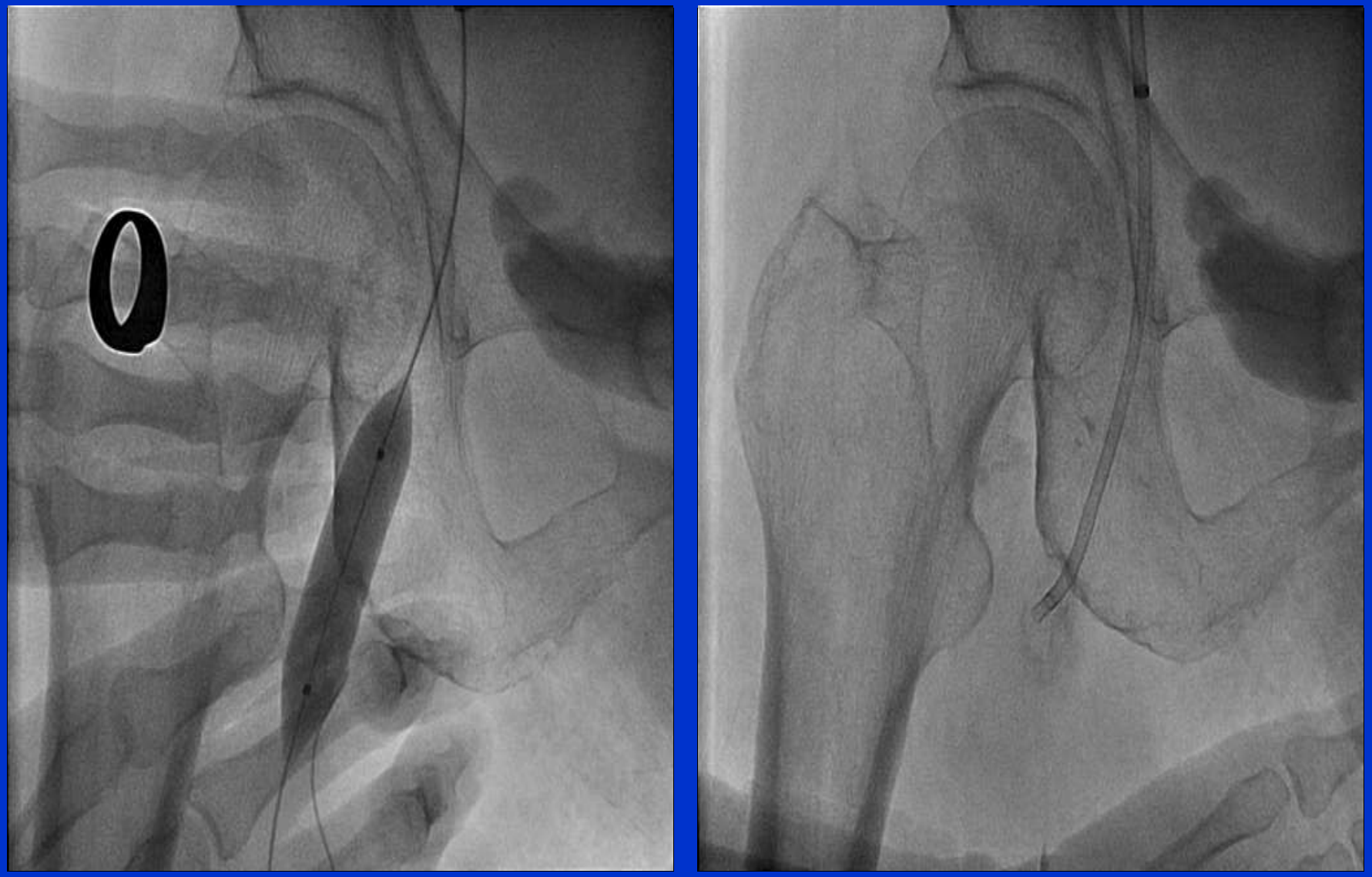
Balloon fragmentation with 8.0 x 40 mm Admiral Balloon at 6 atm



Urokinase 240000 units

Balloon fragmentation with x 12.0/40 mm Admiral Balloon at 6 atm

CMUH



8Fr RESS guiding catheter for thrombus suction

After PTA

- Right leg edema resolved in one day
- No bleeding event was noted

Conclusion

- For patient with DVT who is contra-indicated for anticoagulation and thrombolysis, what can we do is little in the past… maybe just set IVC filter with close observation
- TAPAS infusion balloon catheter directed thrombolysis can be applied safely without bleeding complication
- It's a first in man case report. We need large trial to prove the efficacy and safety of this approach