

# Carotid Intervention complication case

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# Carotid Stenting

## *Potential Benefits*

- Reduced complication rates
- Less invasive
- Can reach essentially all blockages
- Very low restenosis
- Rapid return to daily life

# YUHS Carotid intervention sys.

Sheath

Guide Wire

Catheter

Balloon

Stent

Bradycardia

Patient sensor

Protection device



~40mm

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# Stent design

Stent	Maker	Design	Free Cell Area-mm <sup>2</sup>	Tapering
Carotid Wallstent	Boston Sci	Closed	1.08	Self-tapering
Precise	Cordis	Open	5.89	Self-tapering
AccuLink	Abbott	Open	11.48	Straight or Conical
Protégé Rx	Ev3	Open	10.71	Straight or Conical
X-Act	Abbott	Closed	2.74	Straight or Conical

*Perspect Vasc Surg Endovasc Ther 2008; 20; 272*

# Protection devices

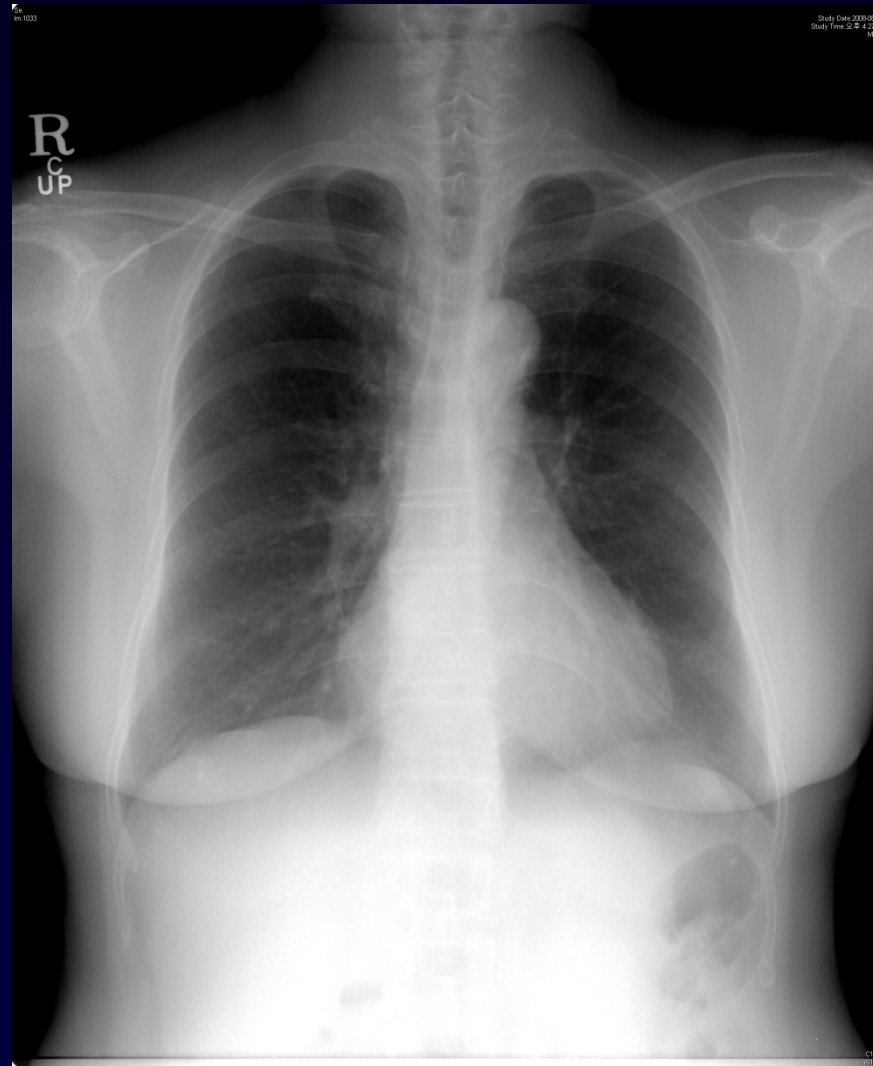
EPD	Maker	Concentric vs Eccentric	Pore size (μm)	Crossing Profile (F)	Filter Diameter
Accunet	Abbott	Concentric	125	3.5-3.7	4.5-7.5
Emboshield	Abbott	Concentric	120	2.8-3.2	2.5-4.8, 4.0-7.0
FilterWireEZ	Boston Sci	Eccentric	110	3.2	One size
Angioguard	Cordis	Concentric	100	3.2-3.9	4-8
SpiderFX	Ev3	Eccentric	167-209	3.2	3-7

# Patient history

#5453434

- Female / 65 year-old
- P.Hx: 5년전 headache로 Hypertension
- Admission : 내원 약 20일전 Rt. forearm 힘 빠지며 감각 없는 증상 약 5분 가량 있어 OO 성모병원, OO대 병원 경유 carotid artery stenosis imp. 하에 본원 ER 입원

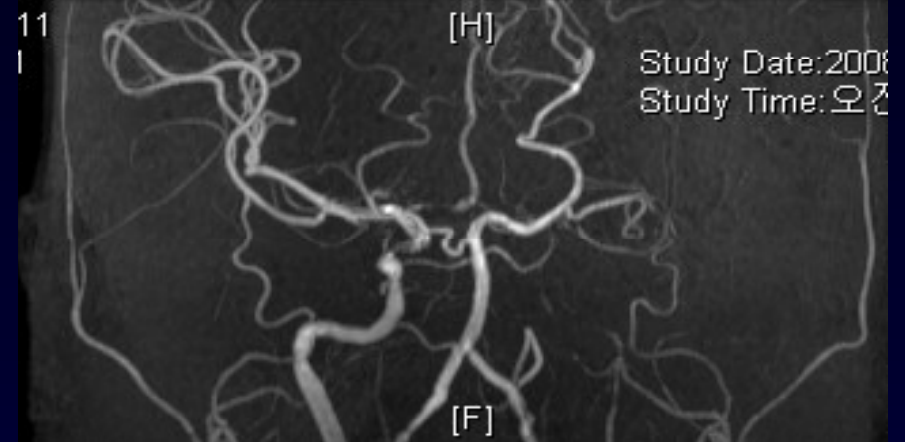
# Chest



# MRI

## No evidence of overt infarct

MEDCOM RESAMPLED, Shift Overlay from 60xx to 7FE0



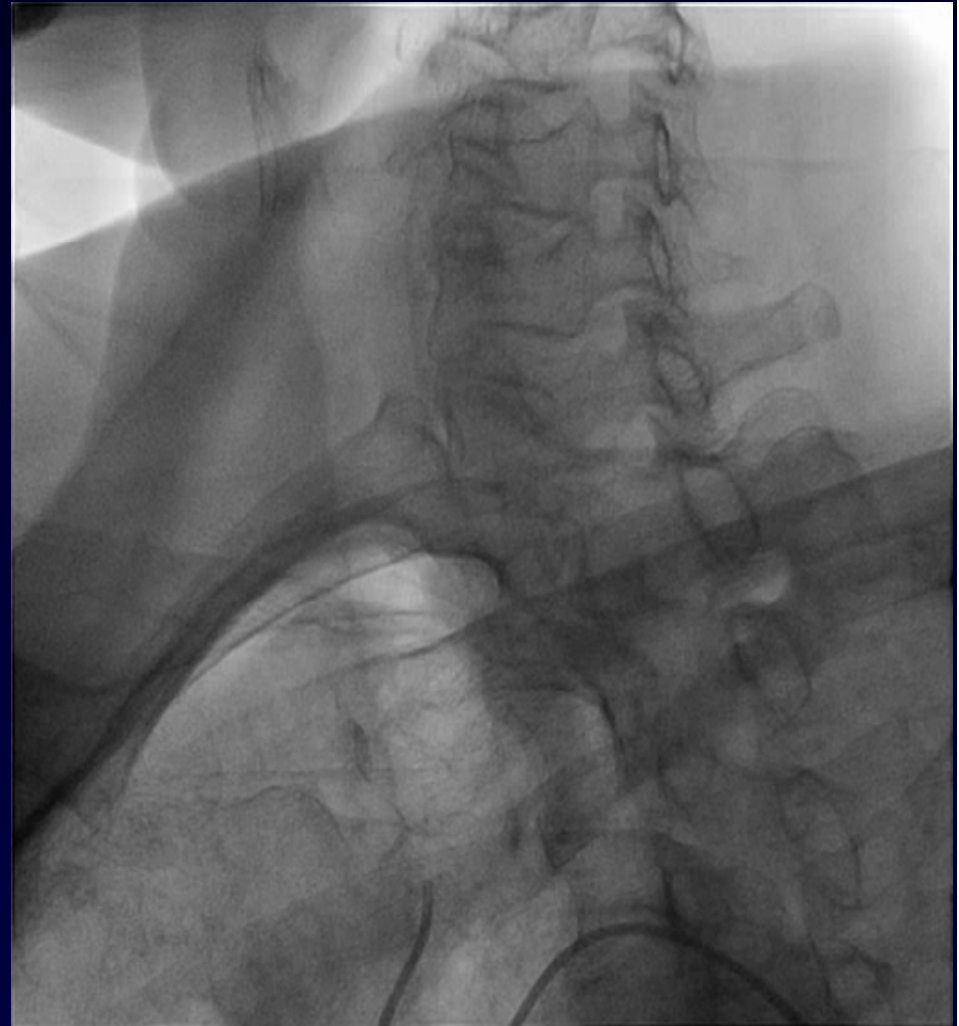
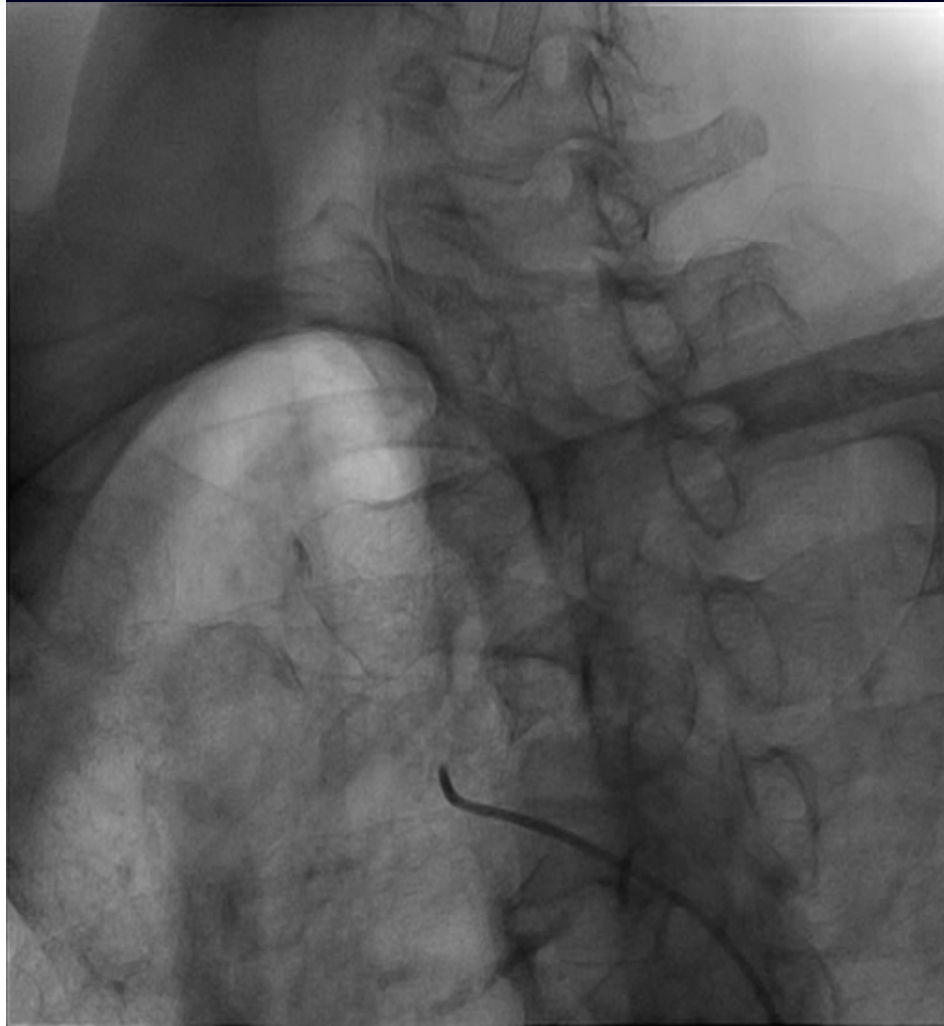


# 4-Vessel DSA



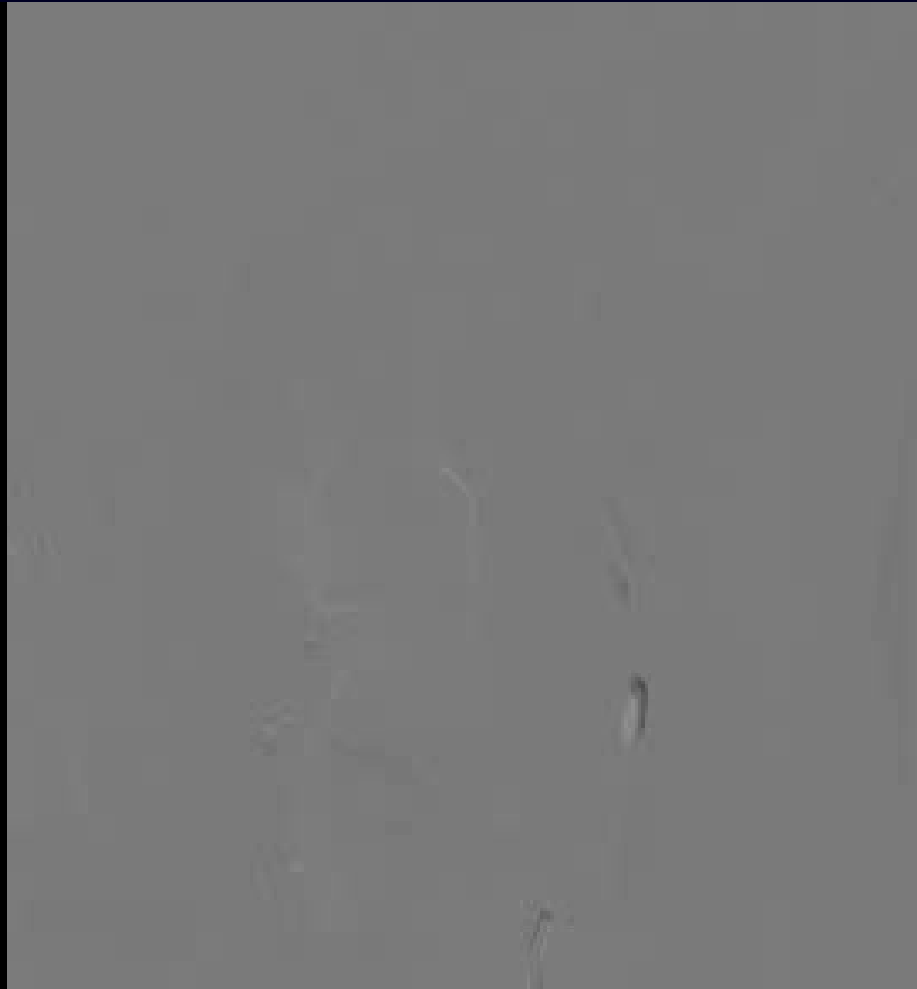
1<sup>st</sup> PTA

# Dx. Angiogram by VTK



# Perforation ECA branch.

VTK c Terumo stiff G/W

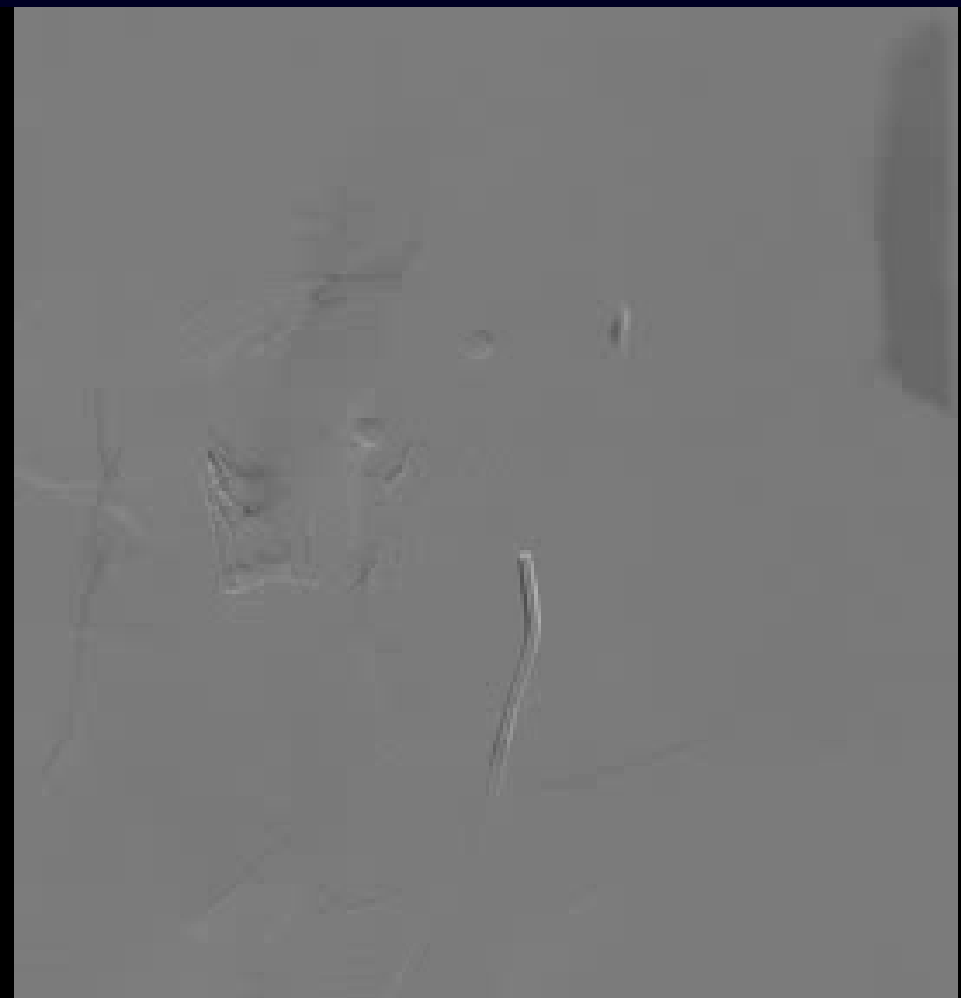


# Delayed Angiogram by H 1

10 Minute

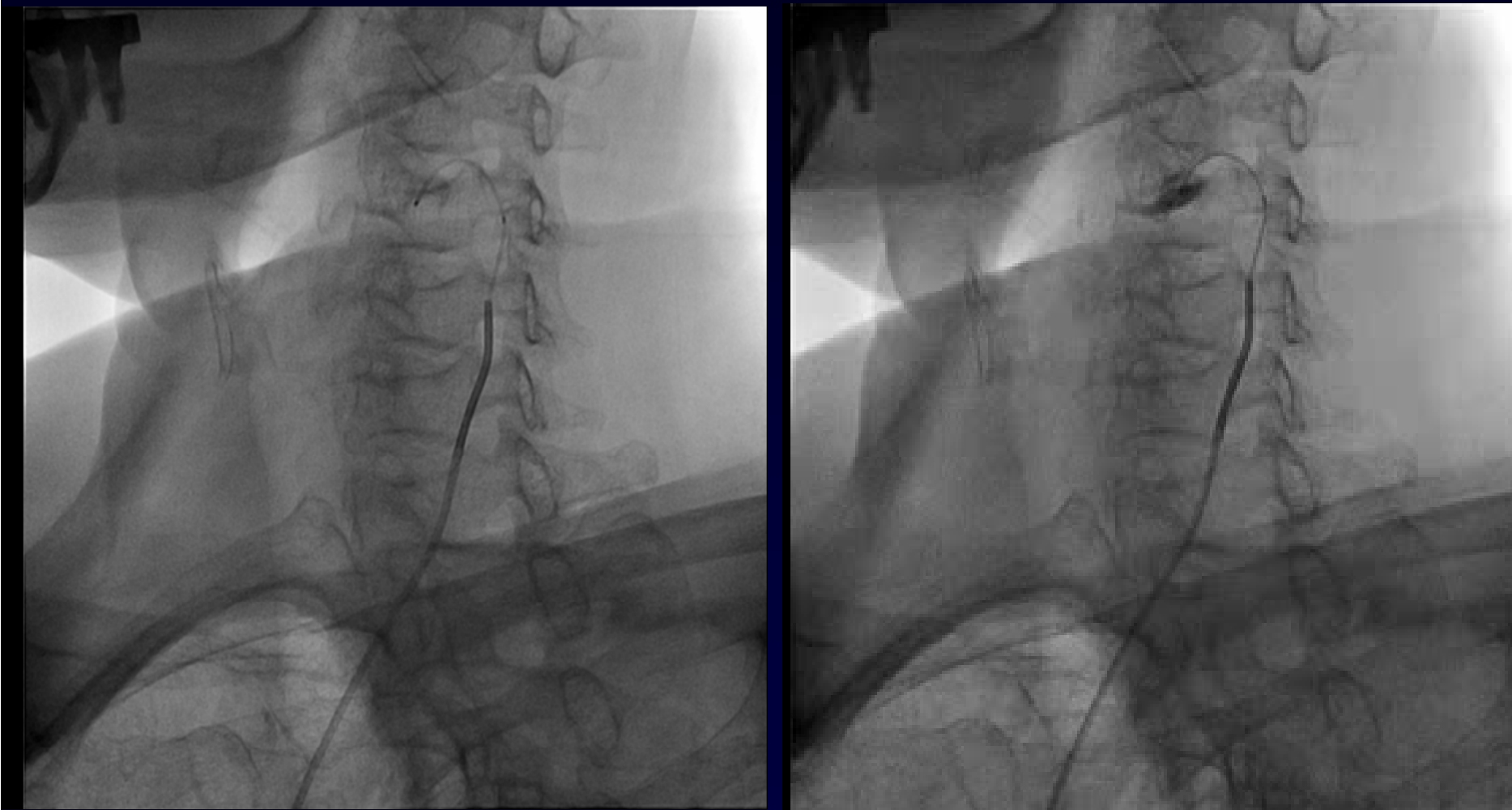


15 Minute



# Perforation site selection

H 1 & Prowler c 014" Runthrough

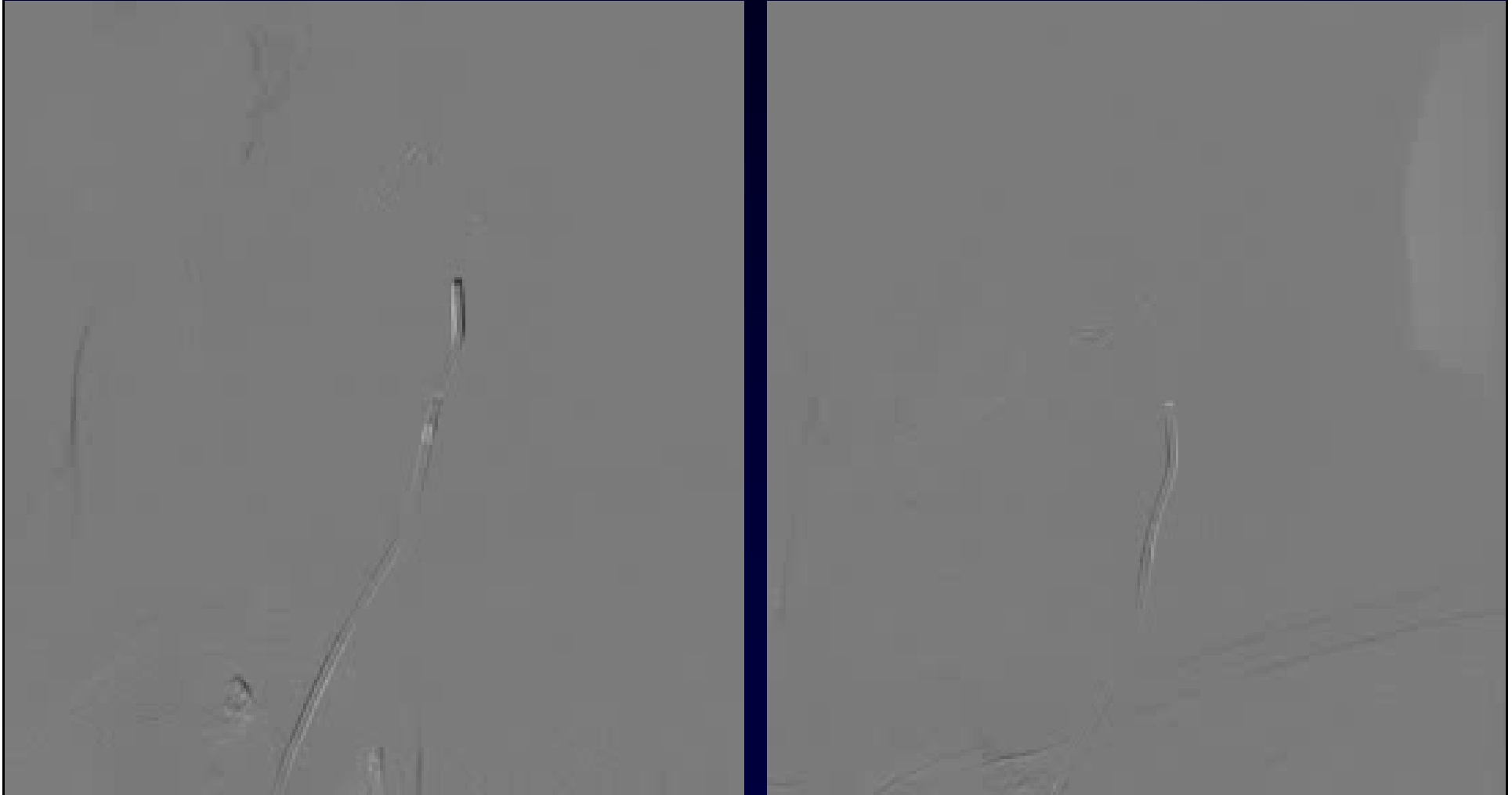


# Coil Embolization

(Detachable coil : 3x60mm)

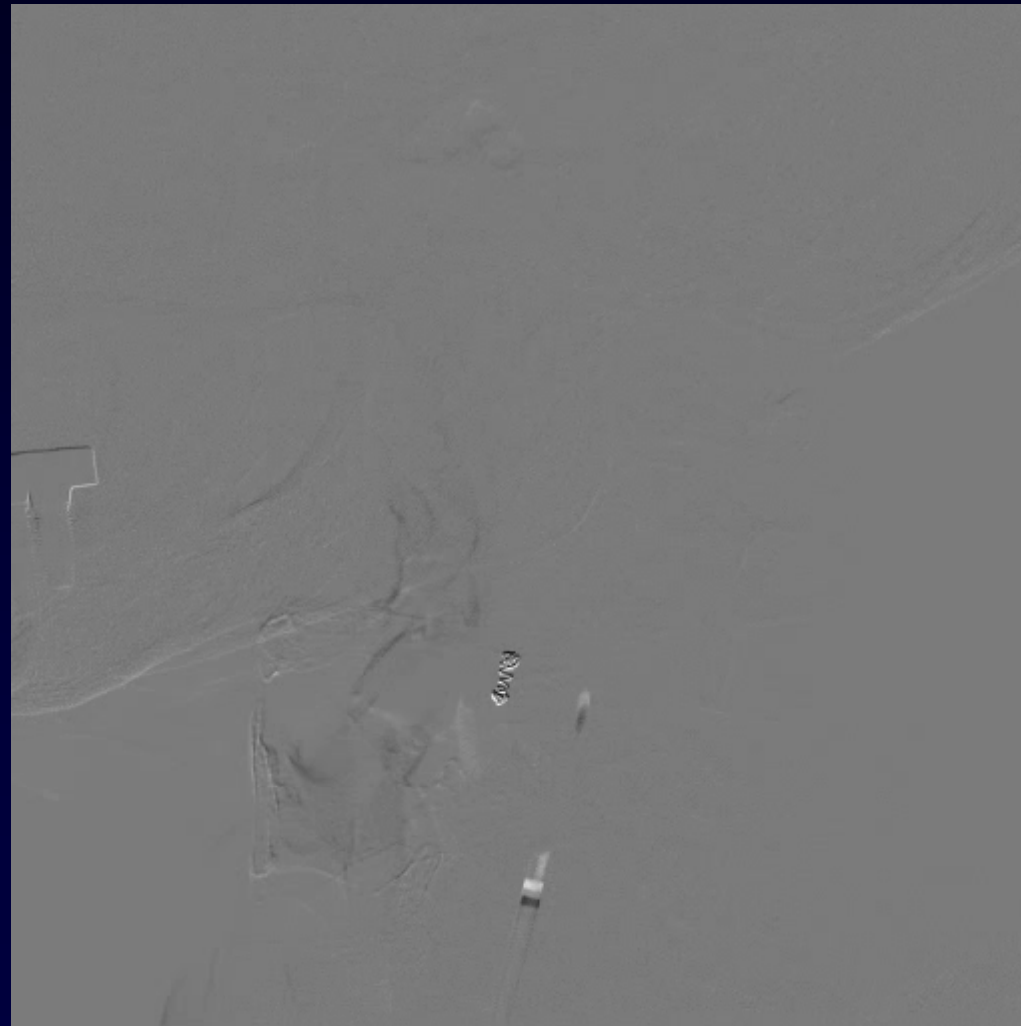


# Post Embolization



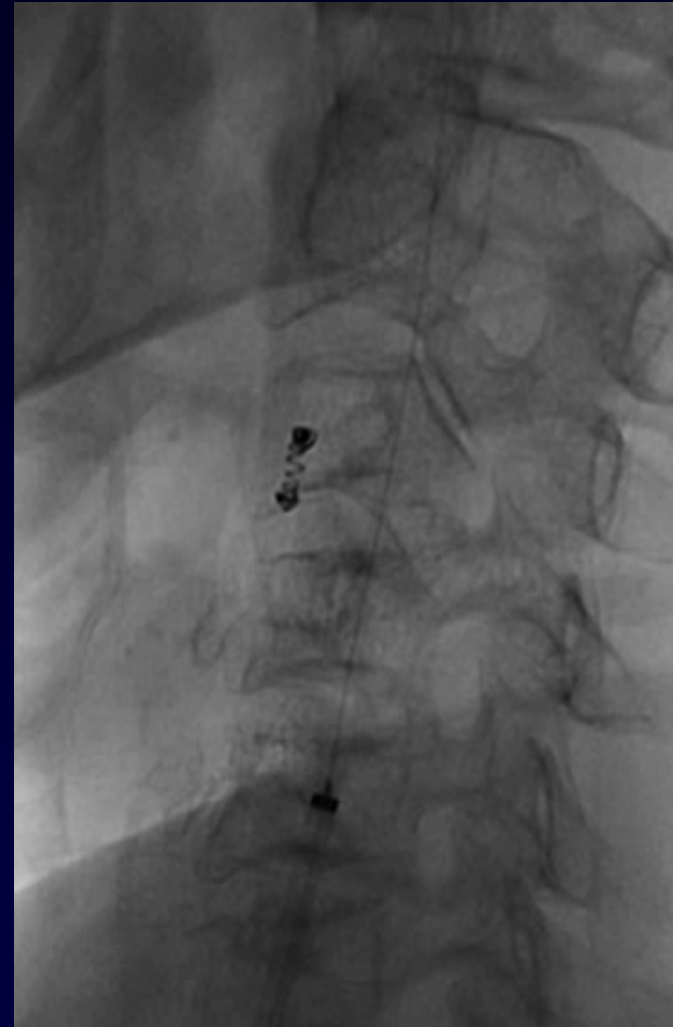
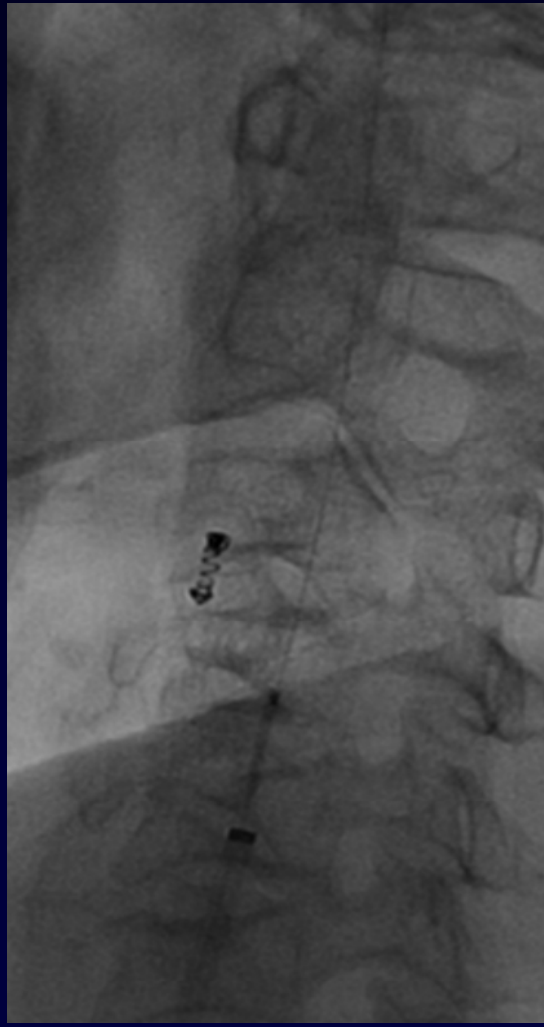
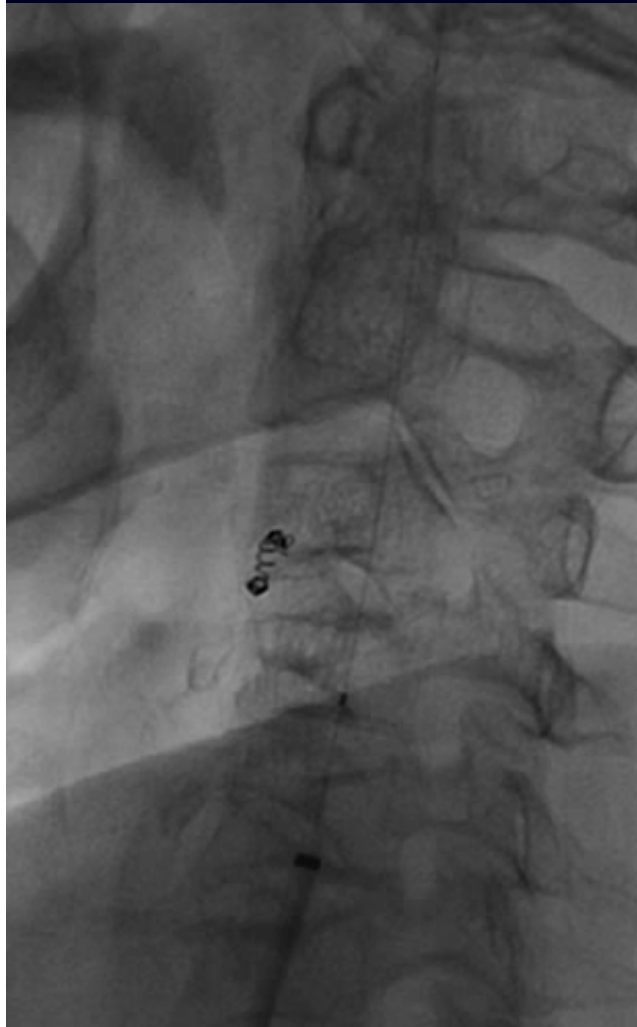
2<sup>nd</sup> PTA

# After 3 months

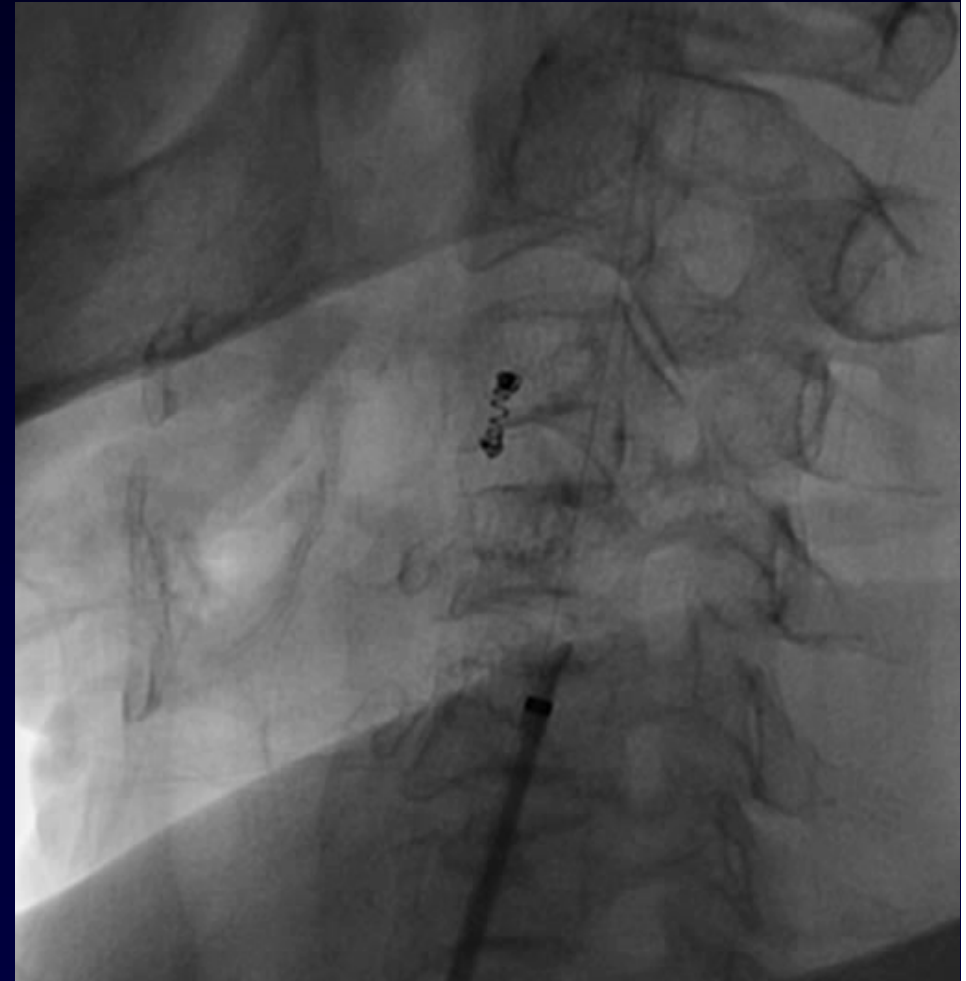
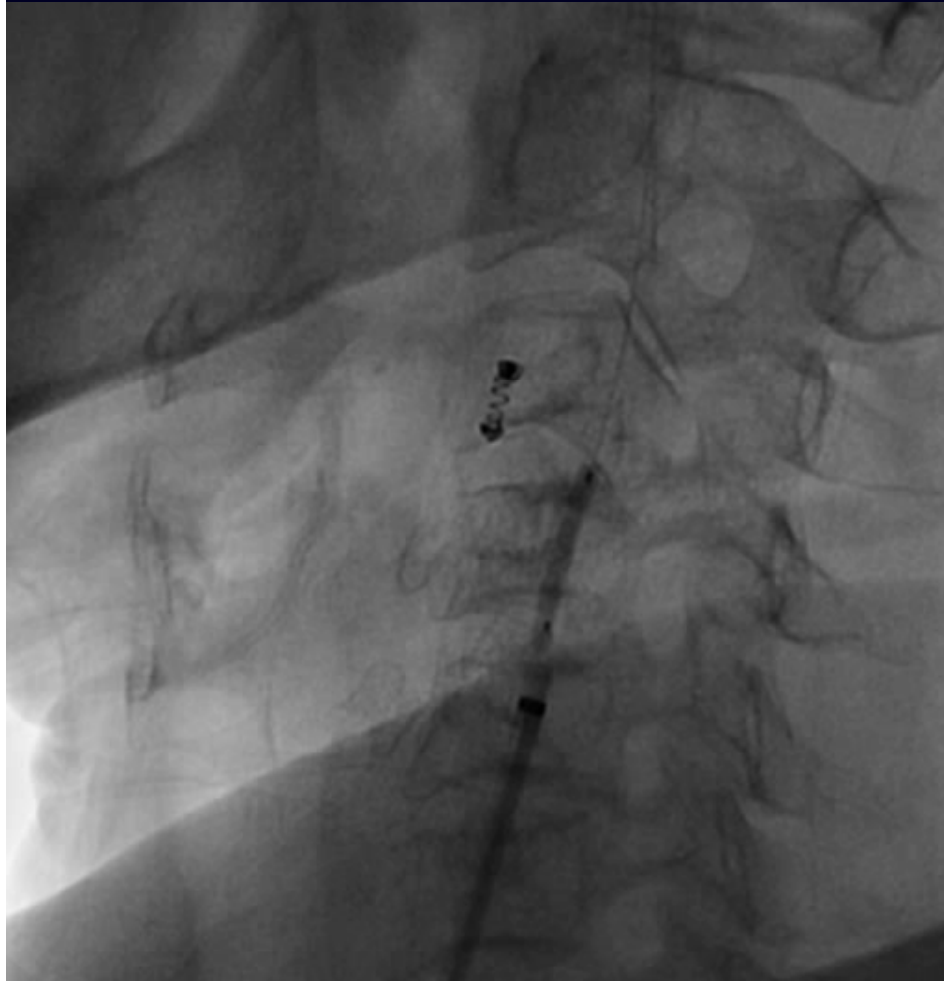




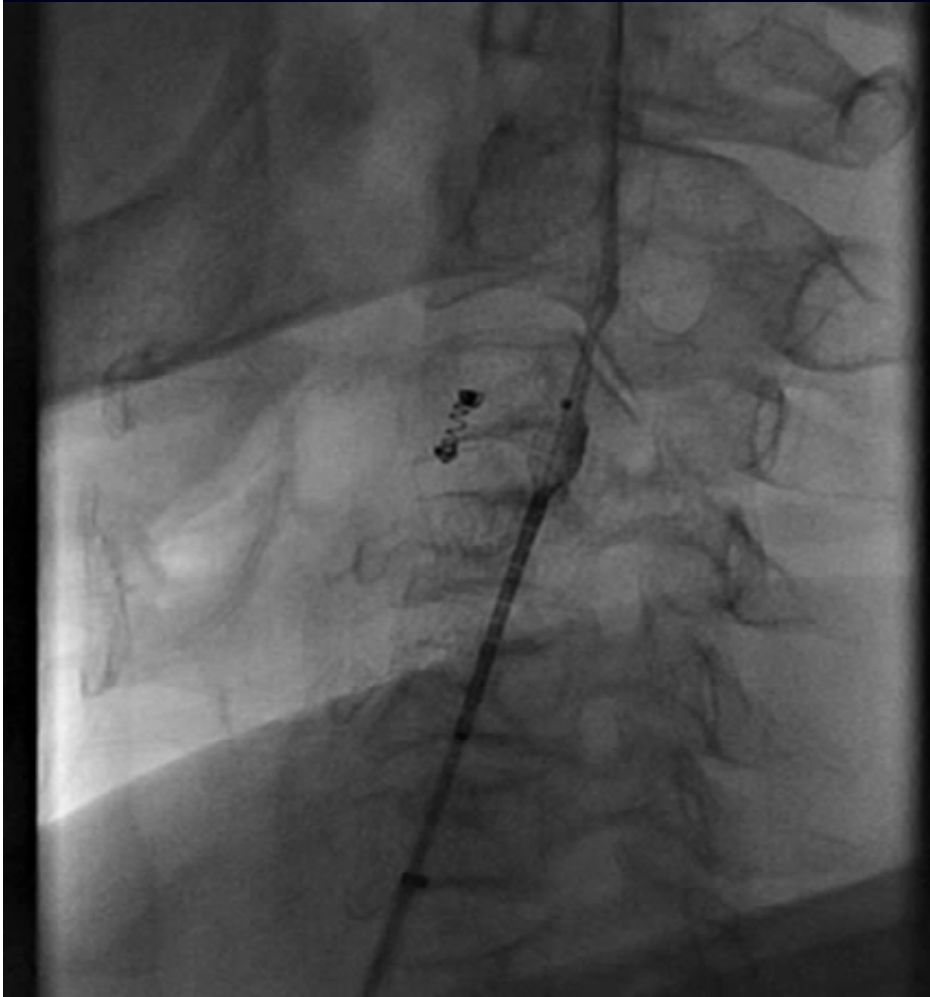
# 1<sup>st</sup> Balloon 1.5\*20mm



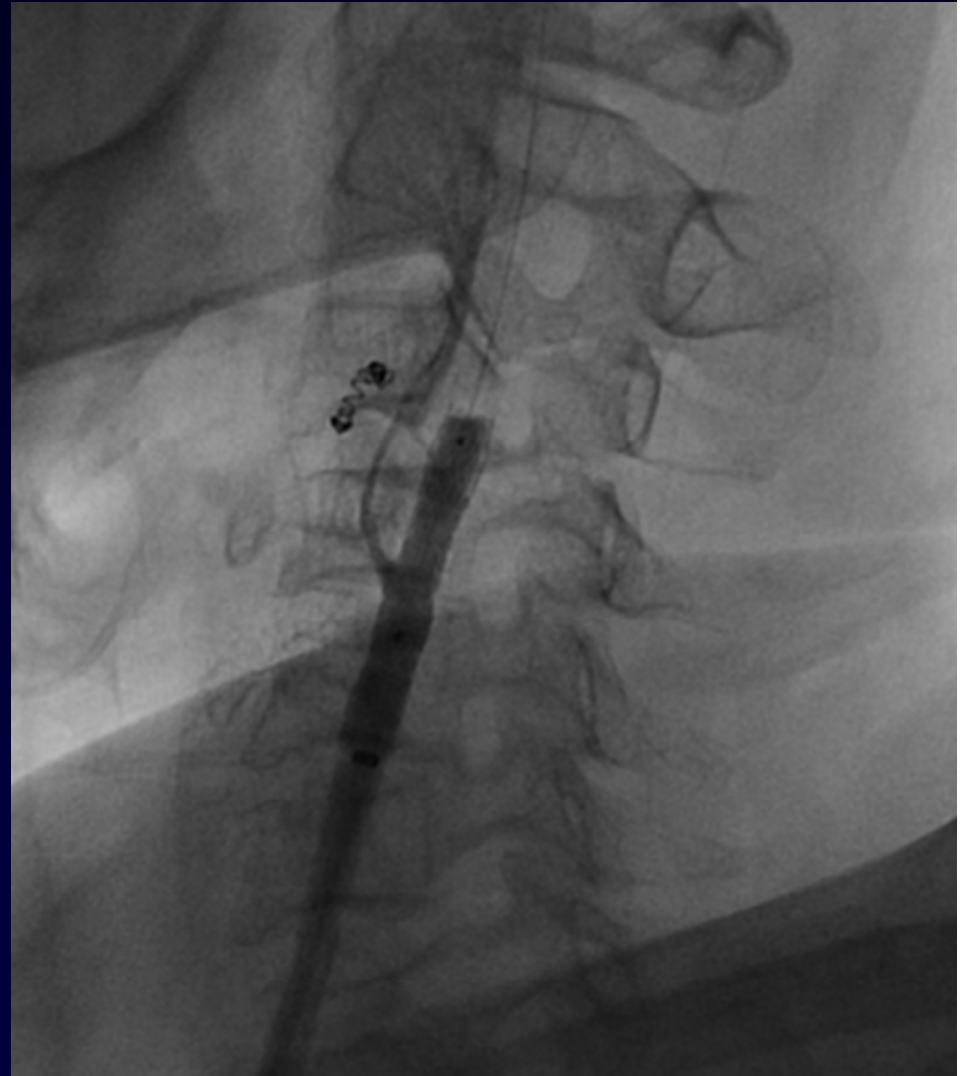
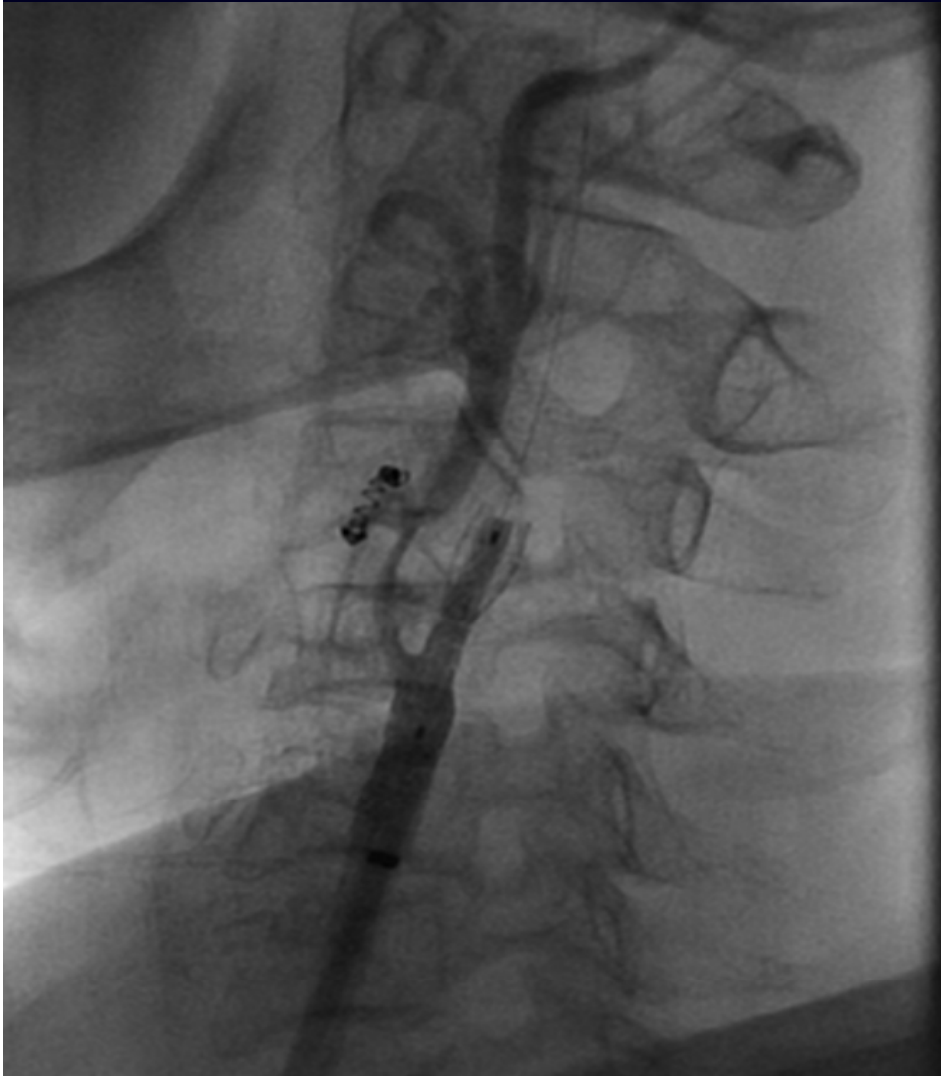
# 2<sup>nd</sup> Balloon 2.5\*20mm



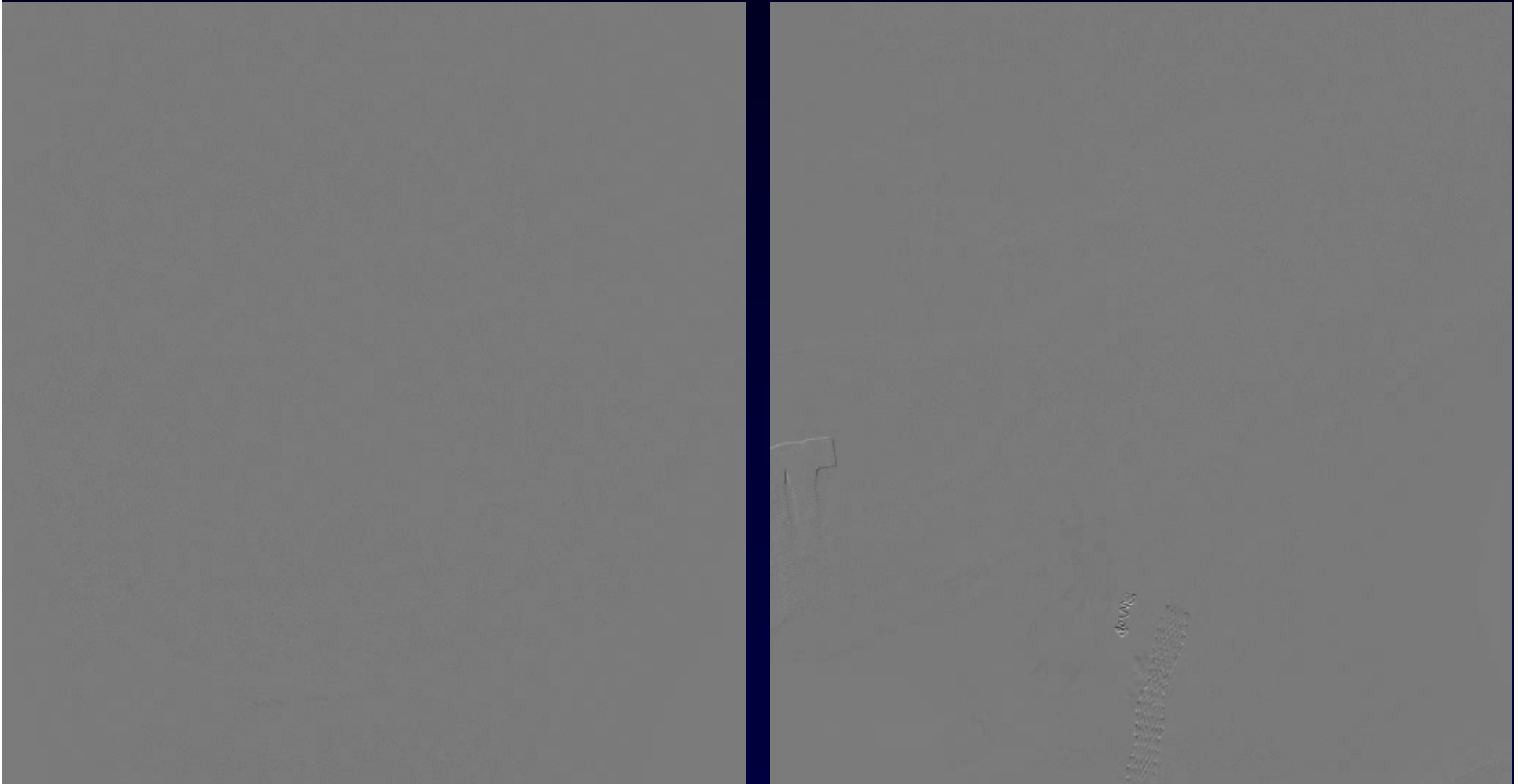
# Stent implantation (Precise 6 \* 30mm)



# Adjuvant Balloon 4\*20mm

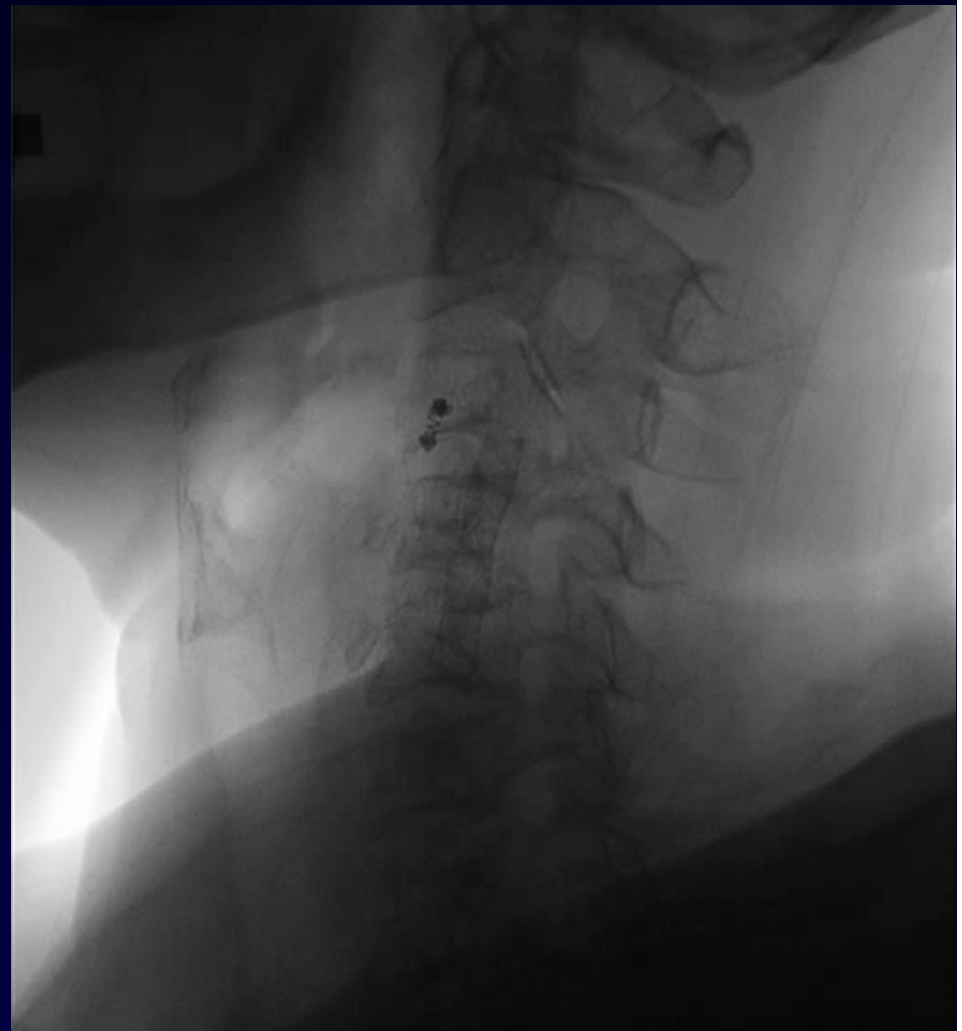


# Post stent



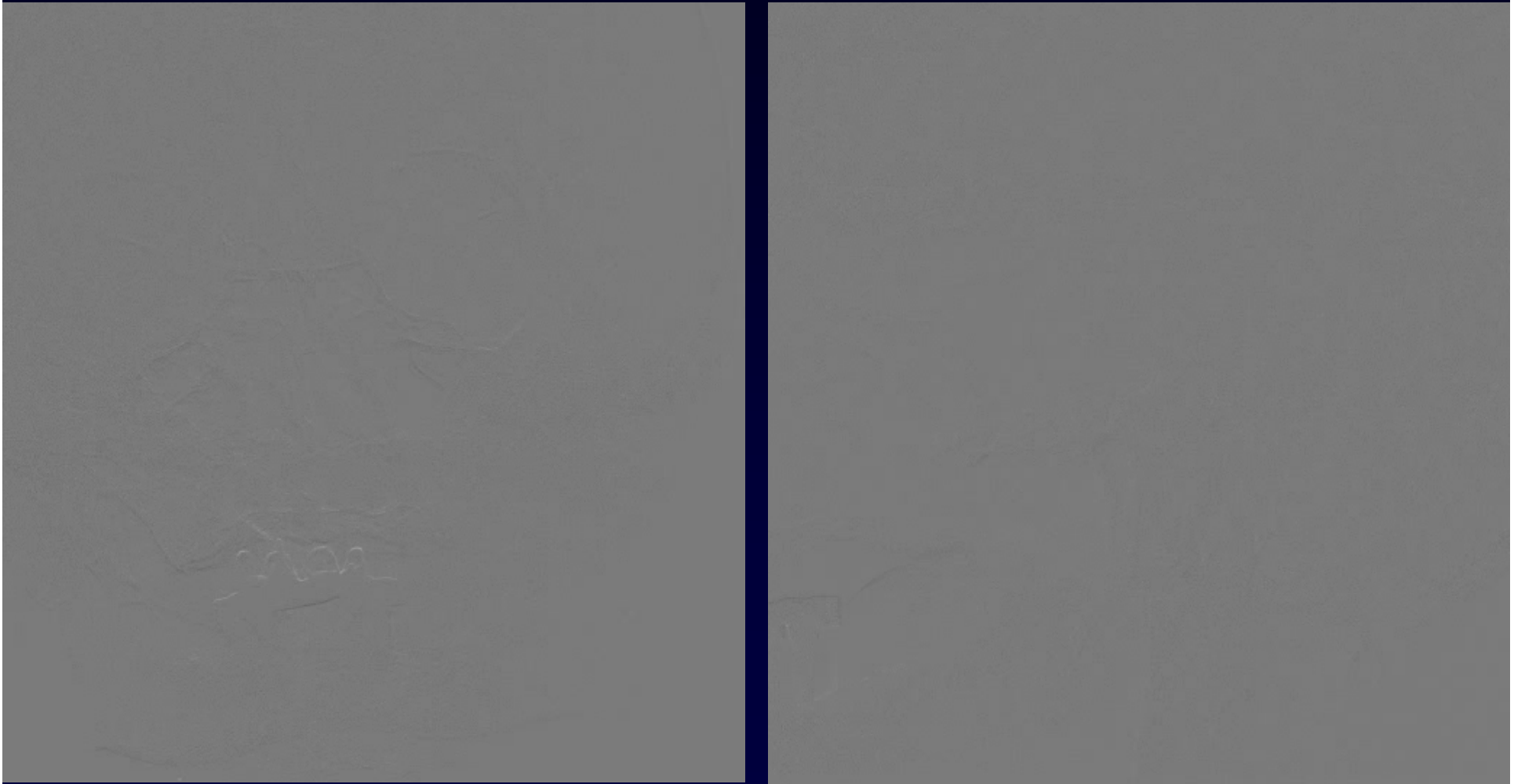
6M F/U

# F/U angiogram



6M F/U

# F/U angiogram



# Carotid Stenting

- Symptomatic stenosis  $\geq 50\%$
- Asymptomatic stenosis  $\geq 60\%$
- ***Contraindications***
  - Severely tortuous, calcified and atheromatous aortic arch vessels
  - Pedunculated thrombus at the lesion site
  - Severe renal impairment
  - Recent stroke (3 weeks)
    - *should be placed on anticoagulants and antiplatelets or for 1 month*
  - Unable to tolerate antiplatelet agents



# Carotid Stenting

## Anatomic high risk

- High(C2) carotid bifurcation
- Prior neck irradiation or radical neck dissection
- Restenosis following prior CEA
- Contralateral occlusion
- Ostial common carotid lesion
- Spine immobility

## Surgical high risk

- Severe CAD  
--Not revascularized or awaiting CABG
- Class III or IV CHF
- Severe COPD
- Age > 80