



TCTAP 2017, Reengineering the Art of EVAR: optimal AAA device for Asian patients-from clinical evidence to routine practice of InCraft

Challenging the Limit of Endovascular Abdominal Aortic Aneurysm Repair

Yoon-Seok Koh

Cardiology, Internal Medicine

Seoul St. Mary's Hospital, The Catholic University of Korea



Challenging cases in EVAR

- **Hostile neck**
- **AAA with iliac aneurysm extended to or nearby external iliac artery**
- **The calcification or narrowing in passage (common femoral artery or iliac artery stenosis or severe calcification)**

Hostile neck case

➤ Definition of hostile neck

- ✓ Neck length \leq 10 mm or 15 mm
- ✓ Neck angle $>$ 60°
- ✓ Neck diameter \geq 28 mm
- ✓ Conical shape
- ✓ Circumferential proximal neck thrombus \geq 50 %
- ✓ Circumferential proximal neck calcium \geq 50 %

➤ Possible technique in current situation in Korea

- ✓ Renal Chimney technique
- ✓ Additional bare metal stent implantation

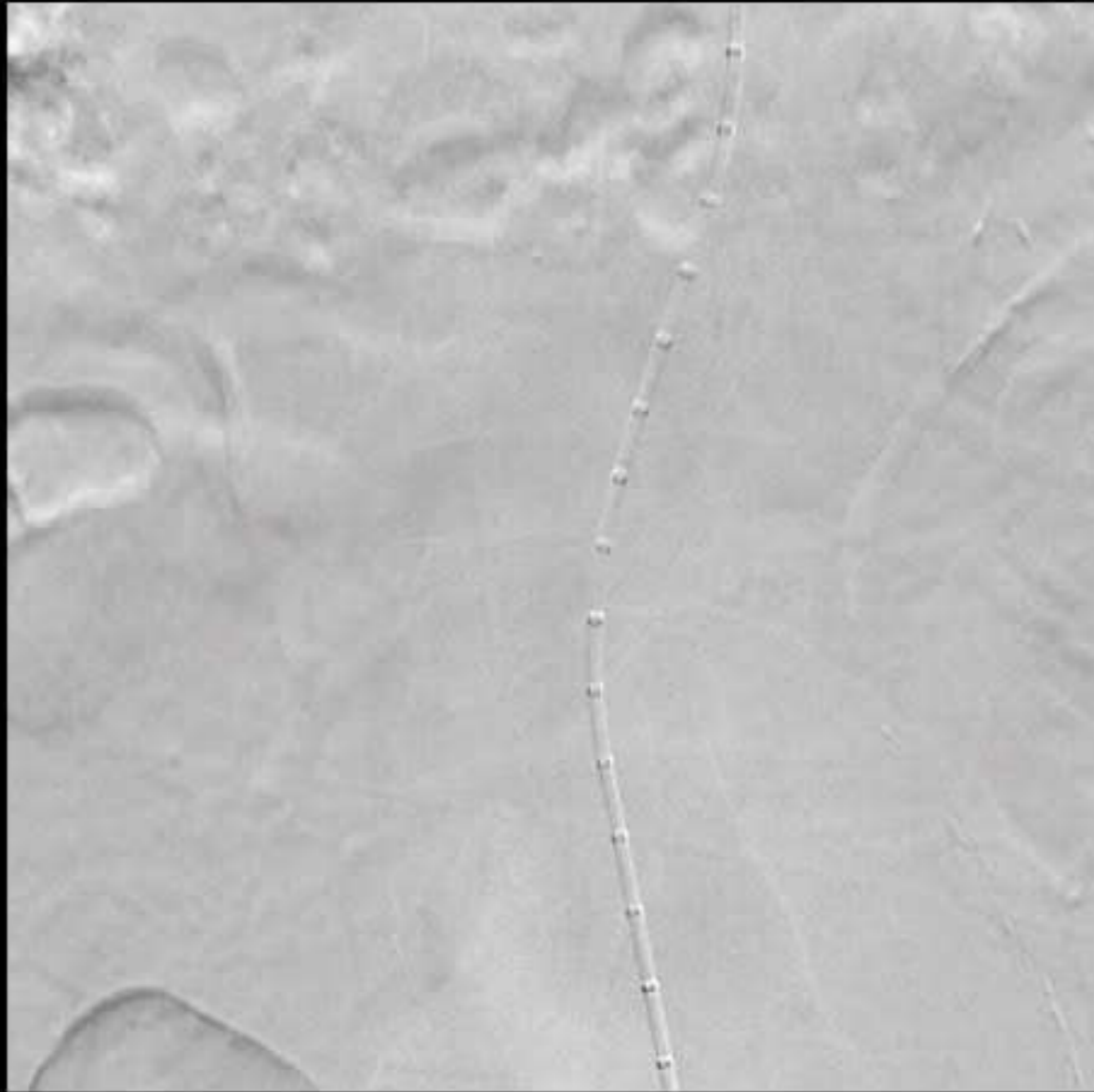
Renal chimney EVAR

69/M

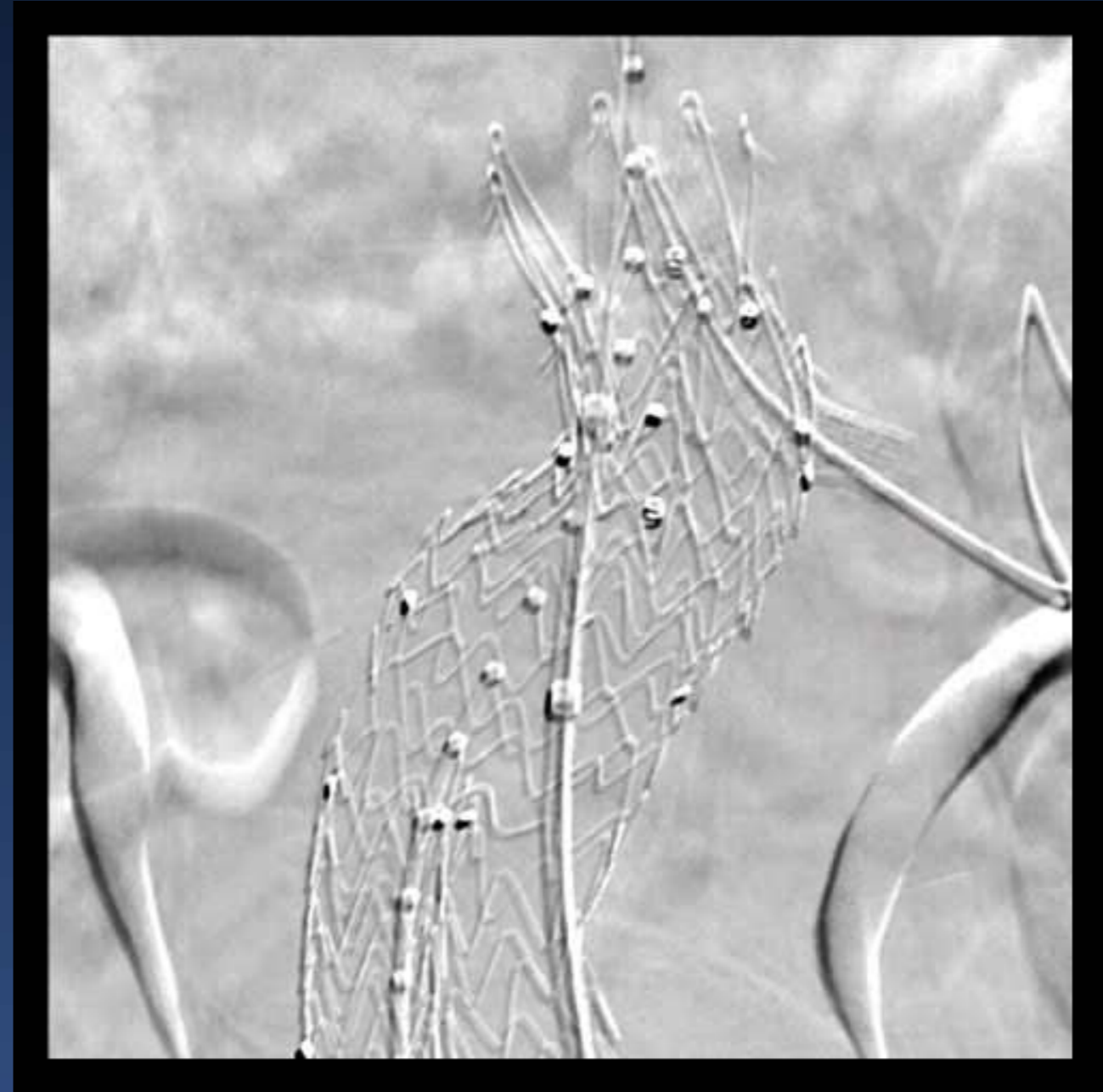
- C.C : Palpable abdominal mass
- Risk factors: Diabetes, Hypertension, Old MI



Renal chimney EVAR



Renal chimney EVAR



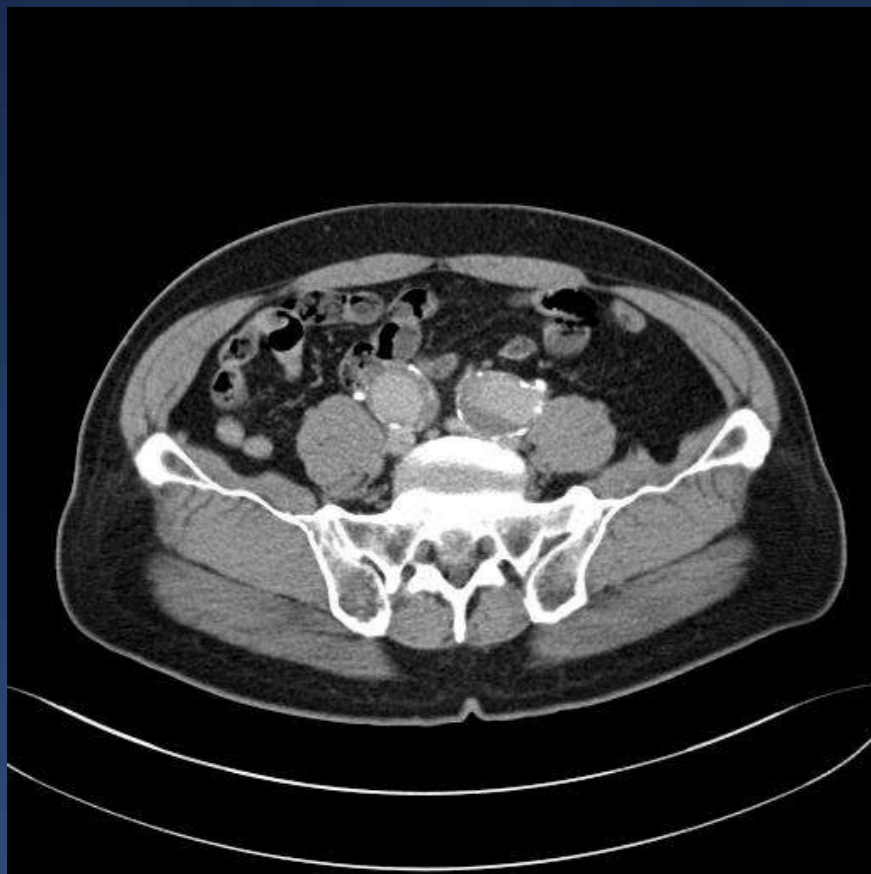
AAA with iliac aneurysm

- **How to save the internal iliac artery in current situation in Korea**
 - ✓ **If possible, Bell-Bottom aortoiliac graft**
 - ✓ **Sandwich technique**
 - ✓ **Cross-chimney technique**

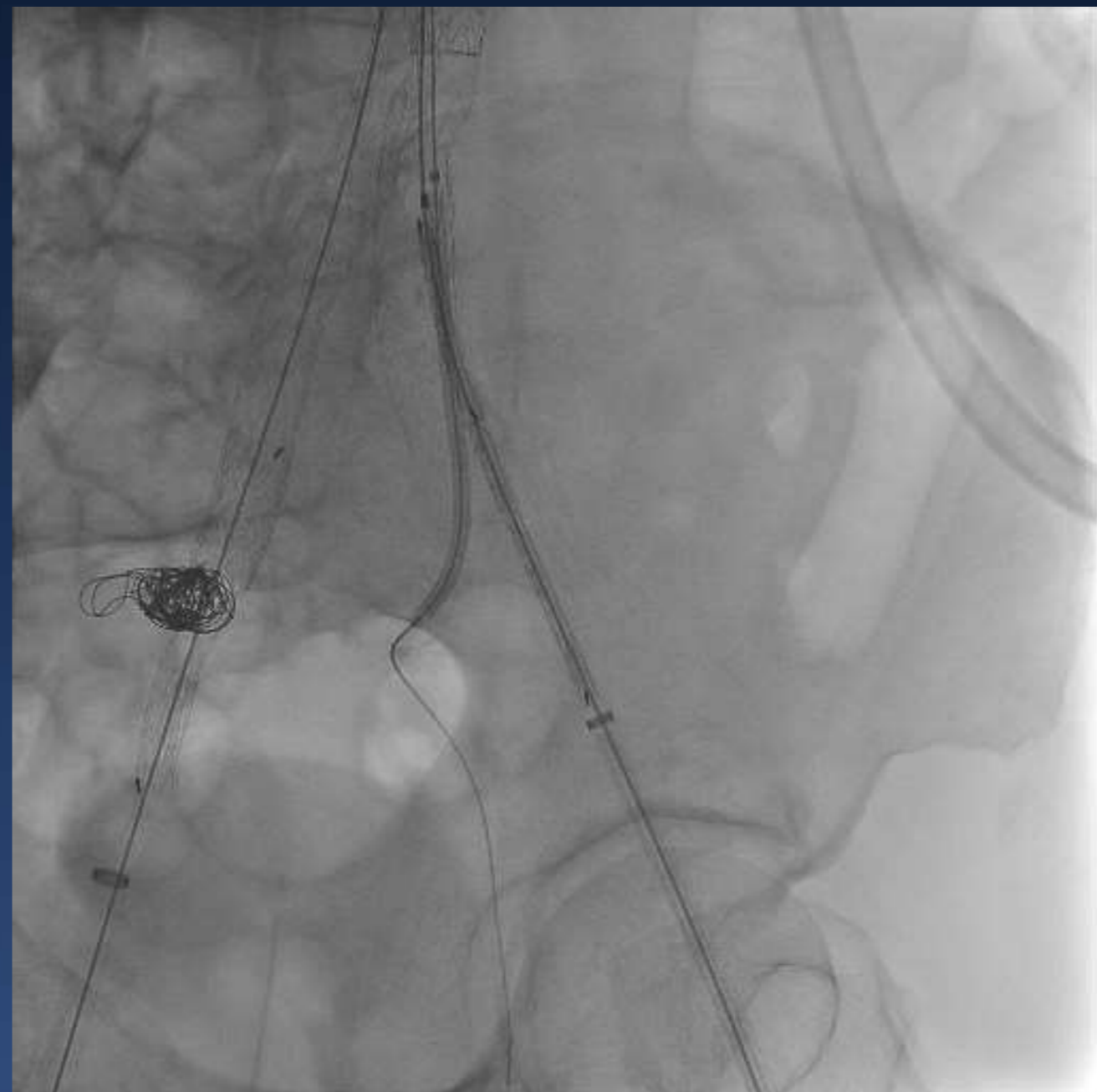
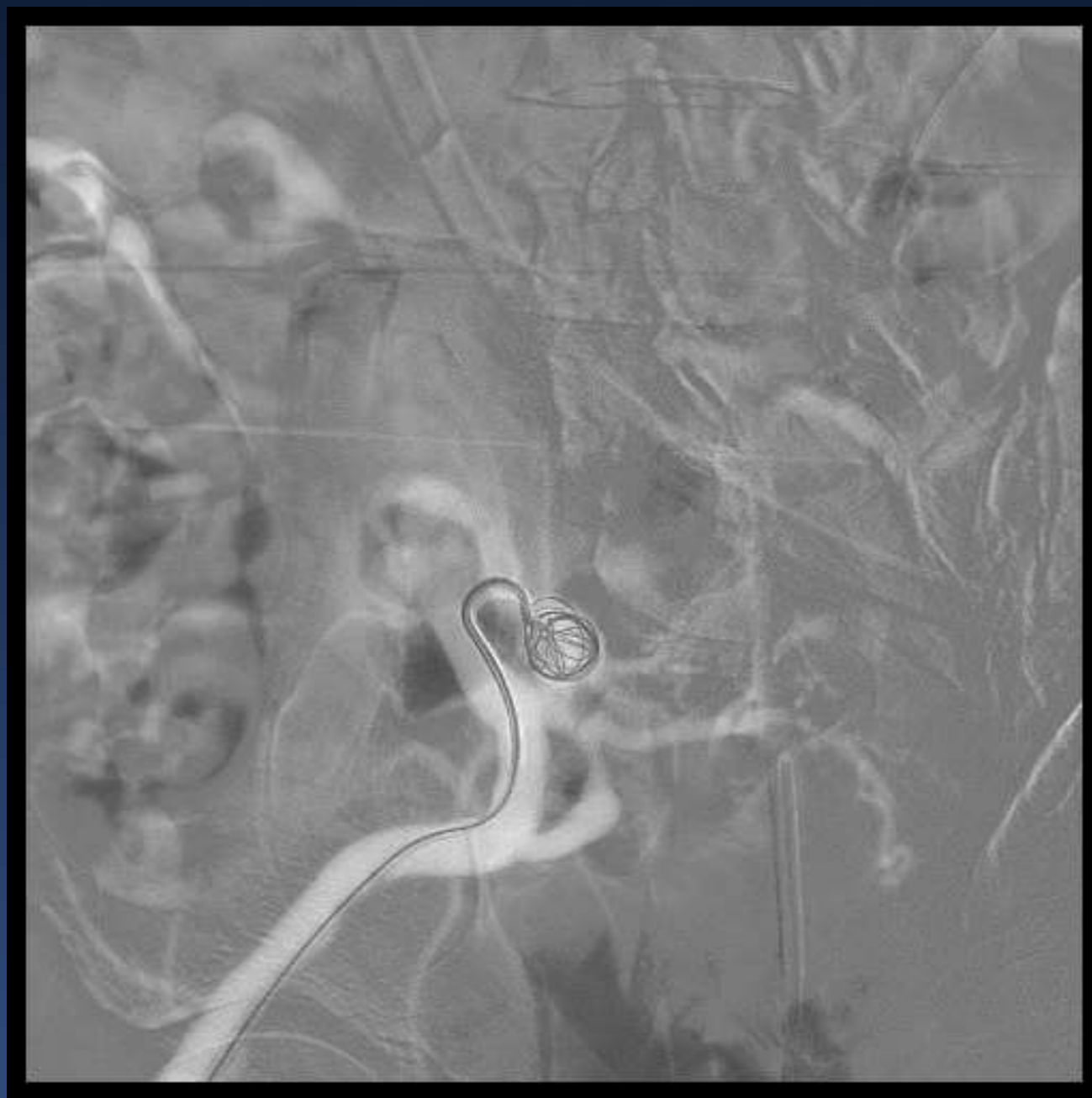
Sandwich technique

74/M

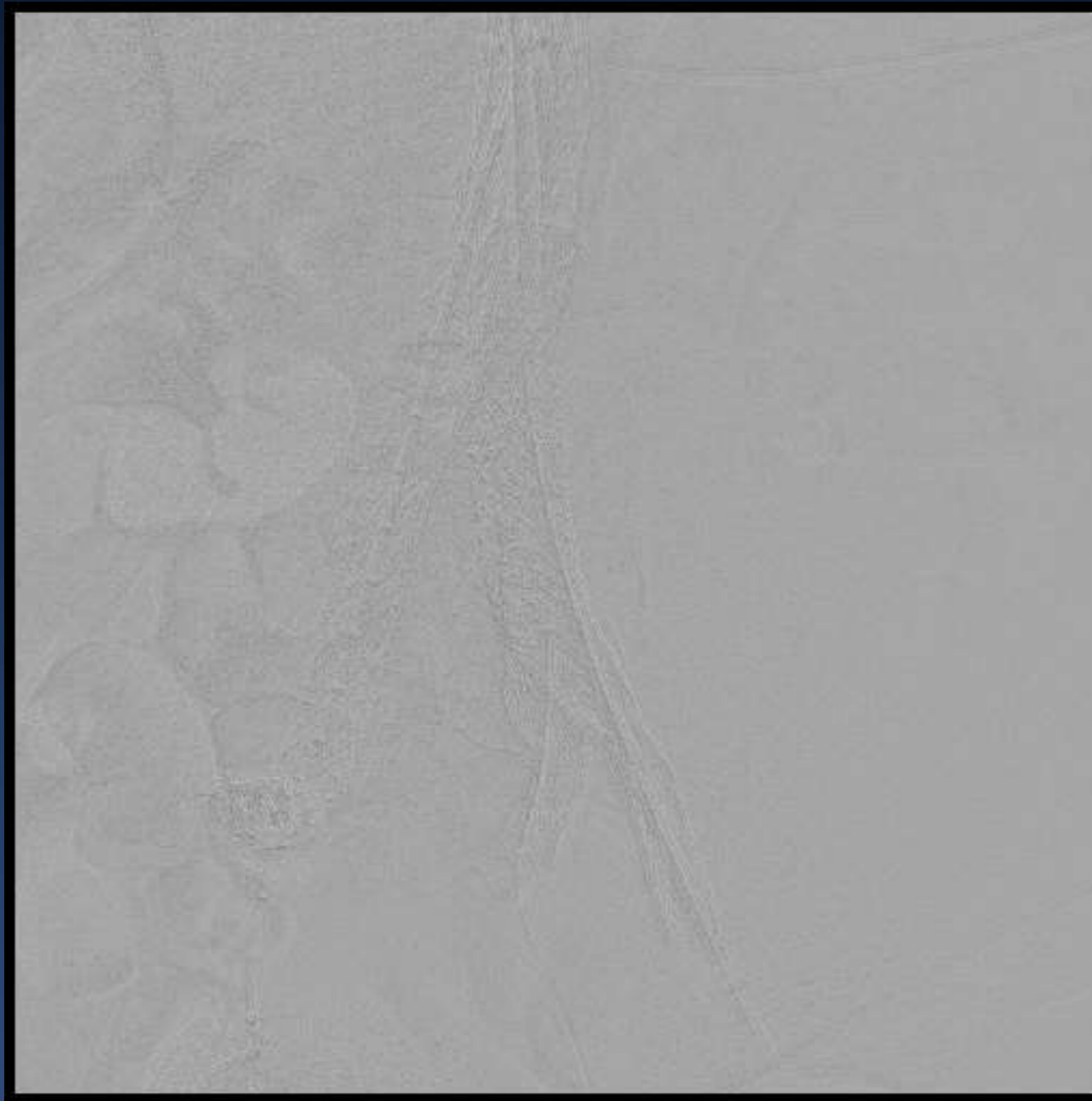
- C.C : Incidental detection of both iliac artery aneurysm
- Risk factors: Diabetes, Hypertension, CAD (LM disease)



Sandwich technique



Sandwich technique



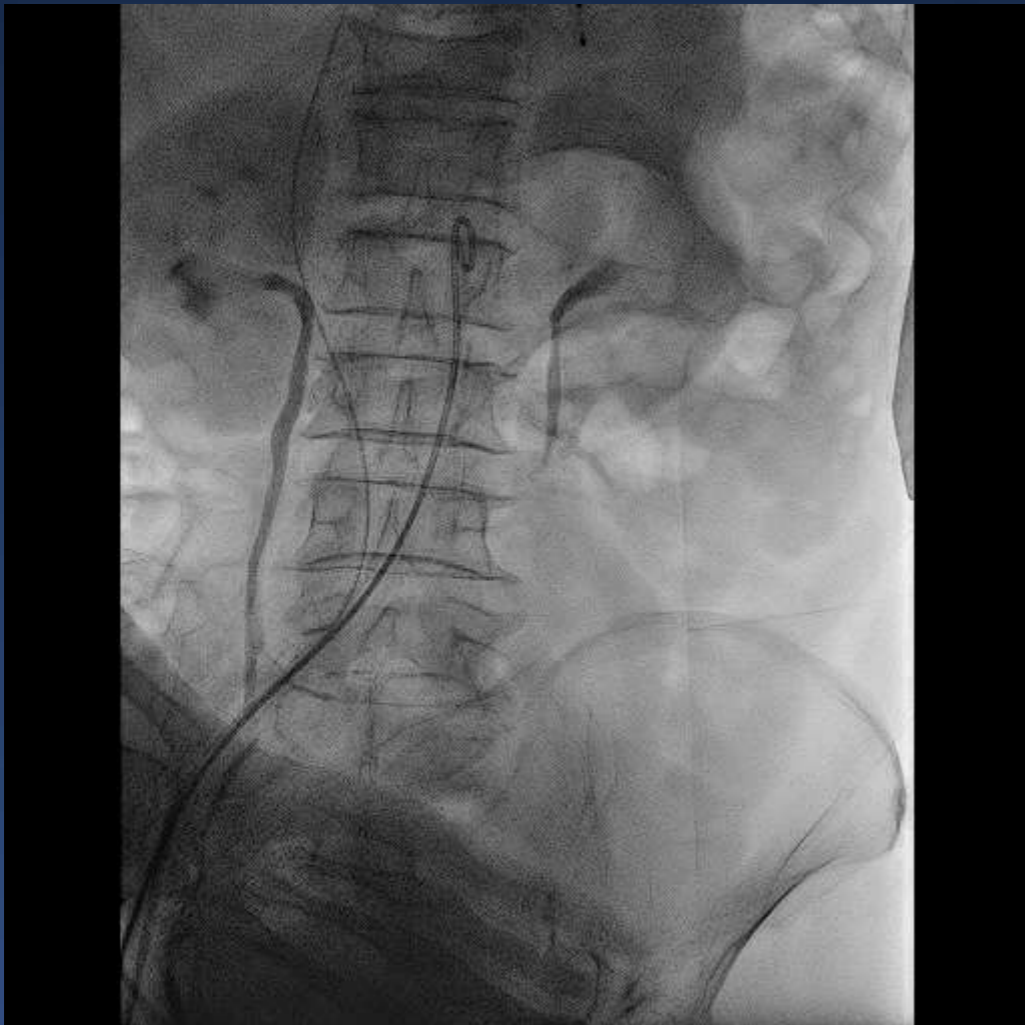
The calcification or narrowing in passage

- **The calcification or narrowing in passage**
 - ✓ **Minimal diameter < 5mm**
 - ✓ **Circular calcification**
- **The only pathway of EVAR is femoral or iliac different from TEVAR (direct aortic) or TAVR (transapical or direct aortic)**
- **How to overcome this problem**
 - ✓ **Iliac conduit**
 - ✓ **EVAR after PTA: this is very dangerous in some cases such as circular severe long calcified lesion**
 - ✓ **Open surgery**
 - ✓ **InCaraft**

Iliac artery perforation

84/F

- C.C : Exertional dyspnea
- Risk factors: Diabetes, Hypertension, CAD (3VD), CKD
- Diagnosis: Severe AS → TAVR
- Lt. common femoral diameter: 4.5 mm, Lt. external iliac artery diameter: 5 mm



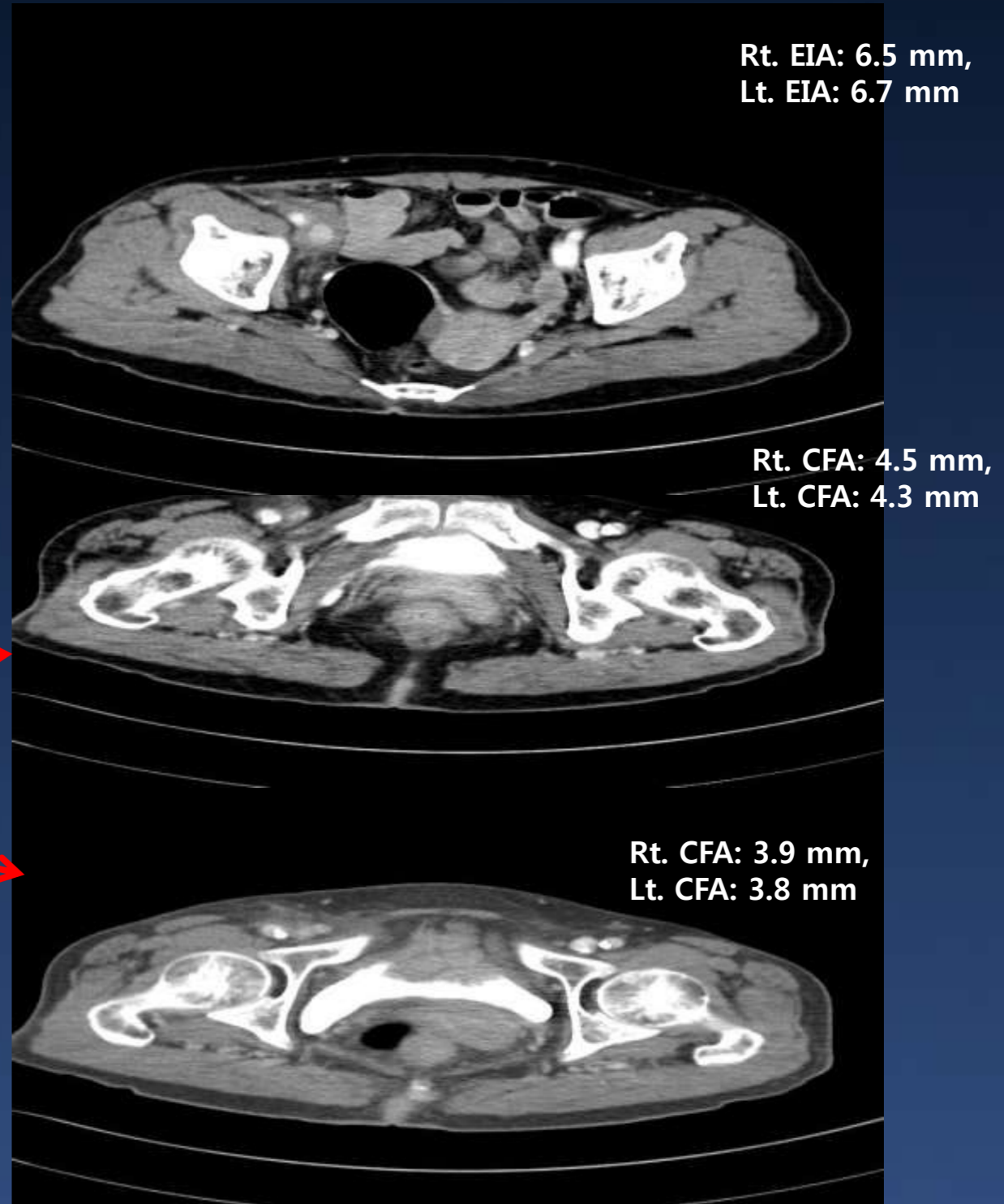
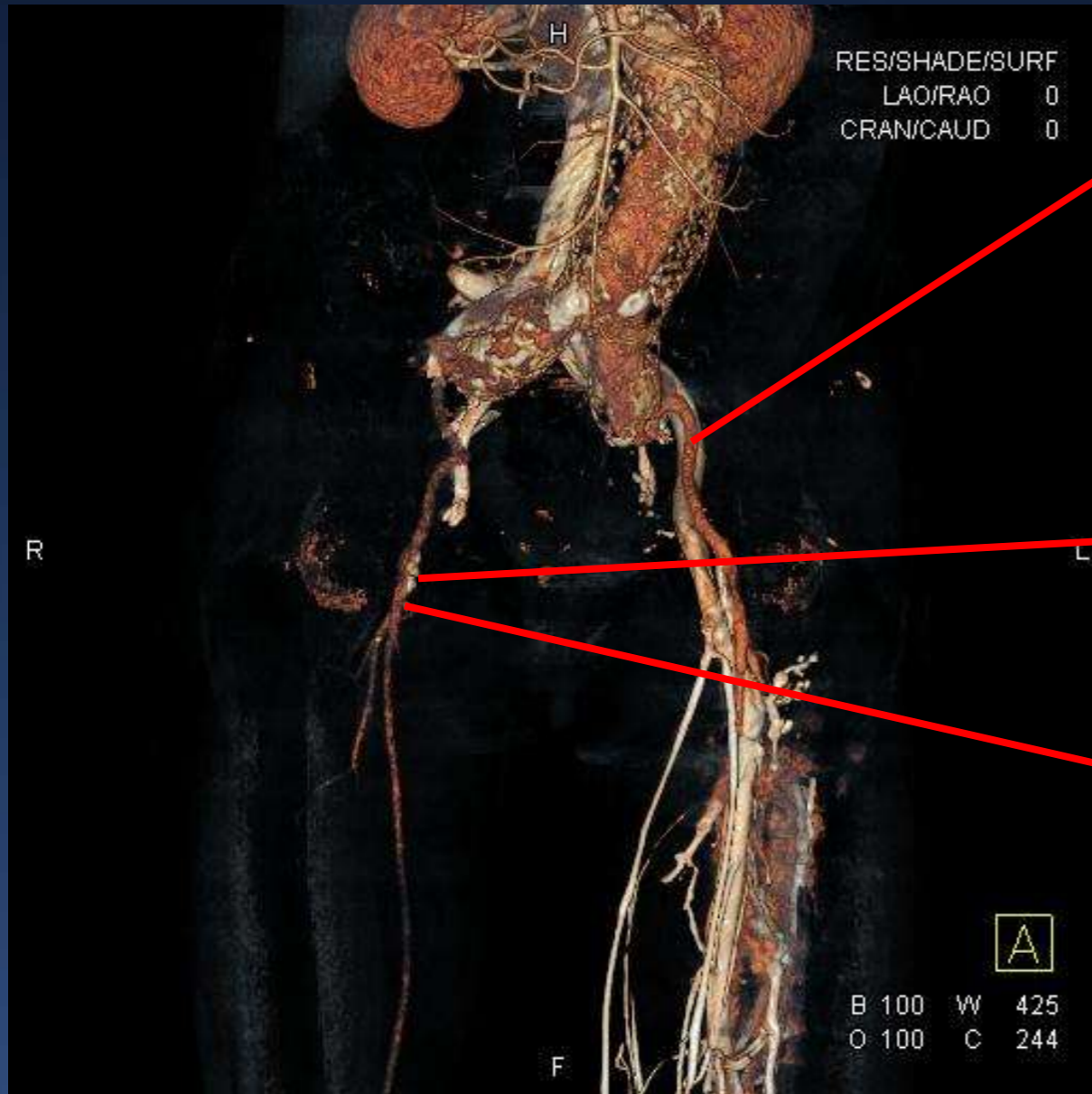
Iliac and femoral artery narrowing case

➤ Initial aorta CT angiogram



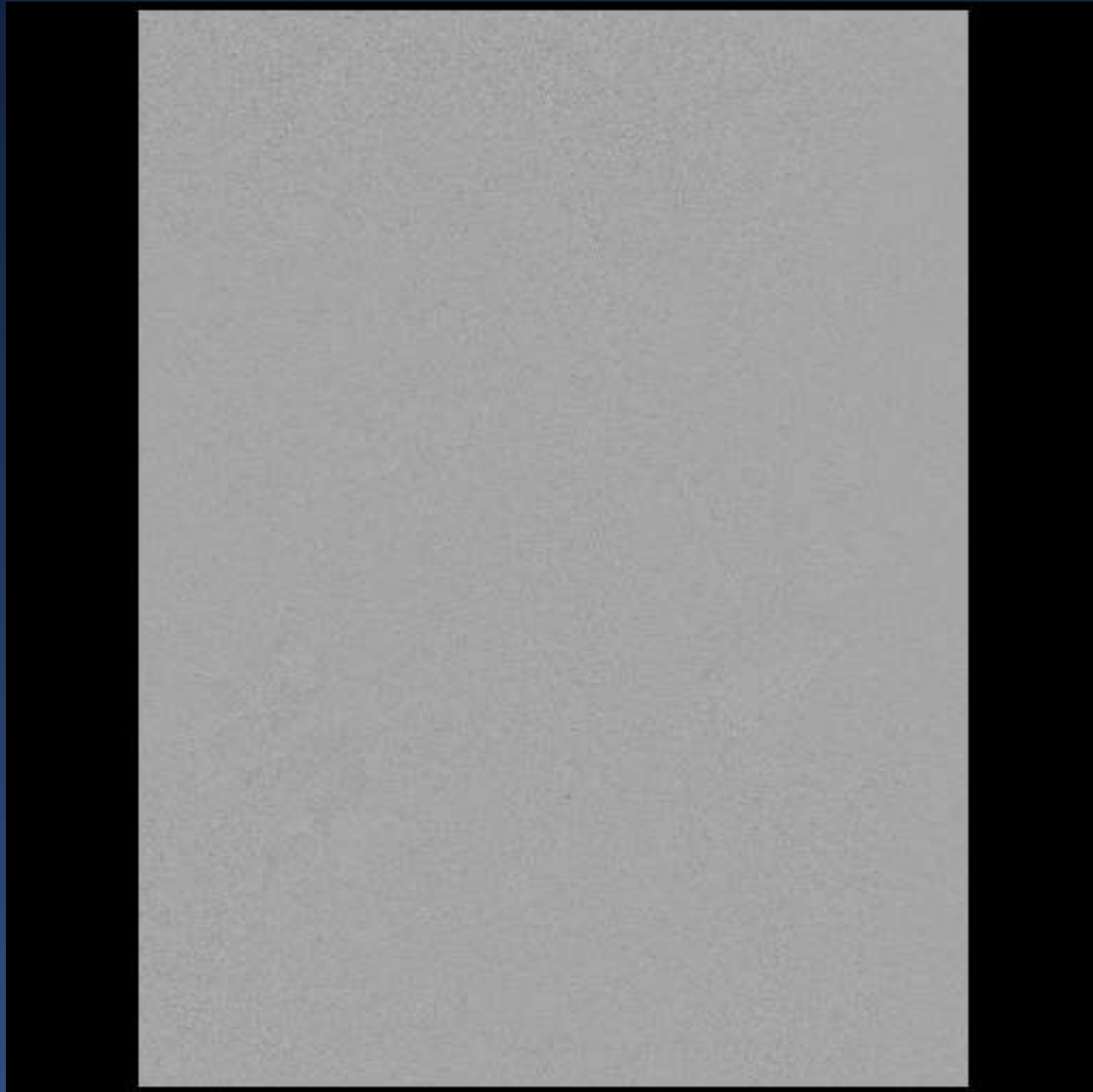
Iliac and femoral artery narrowing case

➤ Initial aorta CT angiogram



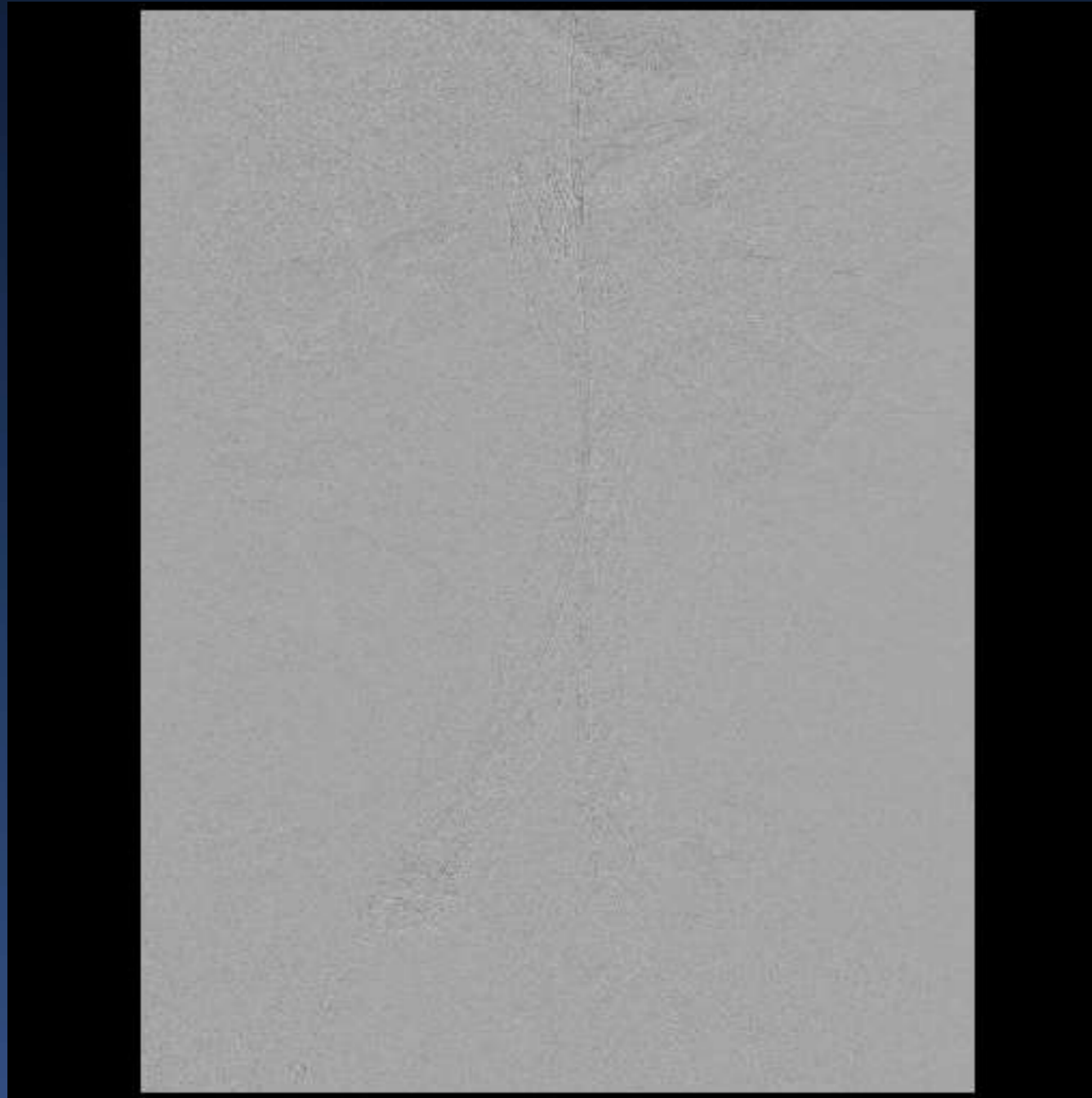
Iliac and femoral artery narrowing case

➤ EVAR procedure



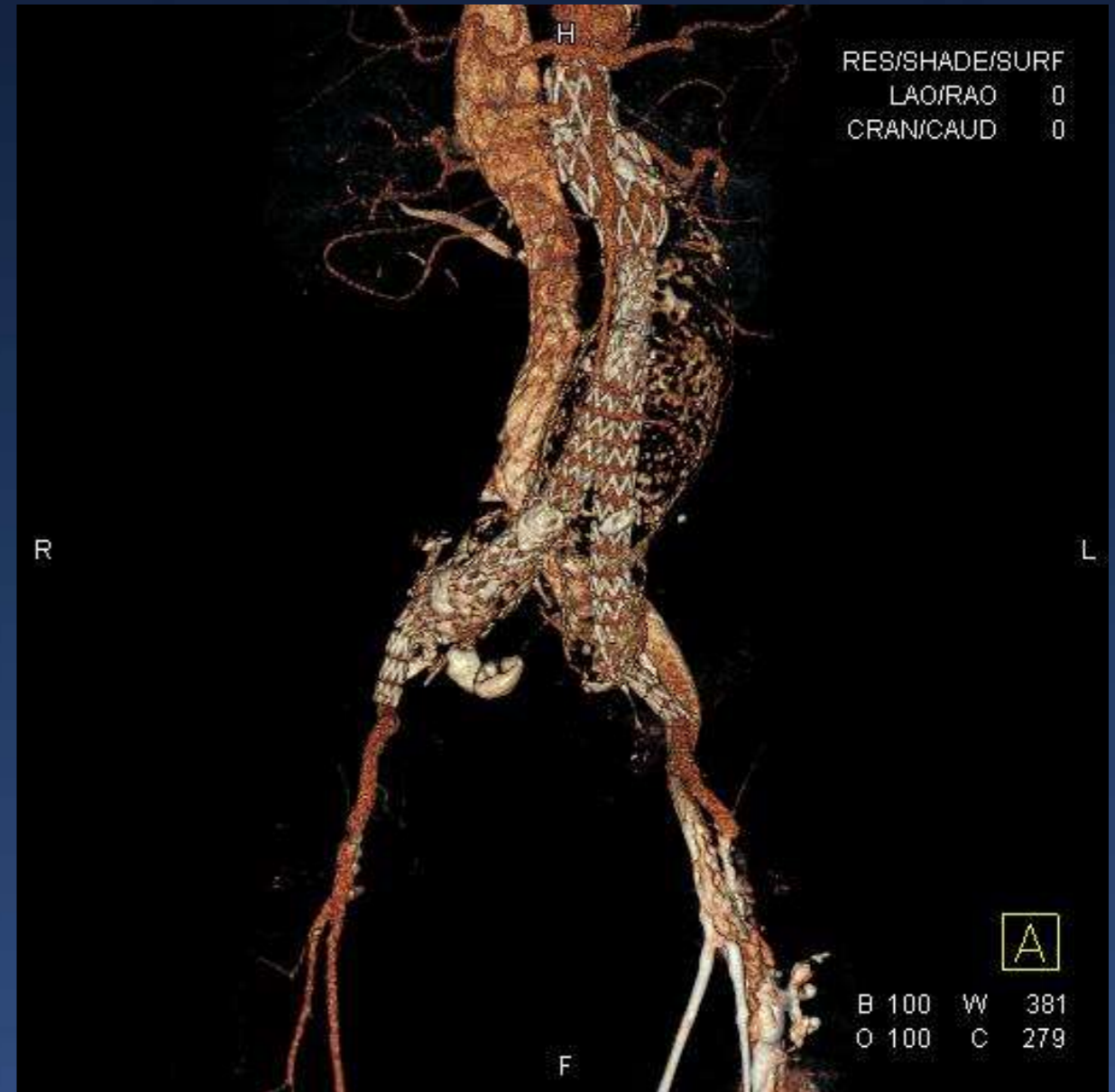
Iliac and femoral artery narrowing case

➤ EVAR procedure



Iliac and femoral artery narrowing case

➤ Aorta CT angiogram before discharge



Take home message

- **We can overcome of hostile anatomy during EVAR procedure**
 - ✓ **Hostile neck: Chimney technique, additional bare stent implantation**
 - ✓ **AAA with iliac artery aneurysm extended to or nearby external iliac artery: Bell-Bottom aortoiliac graft, sandwich technique**
 - ✓ **The narrowing or calcification of passage: iliac conduit**
- **InCraft is very useful in case of the narrowing or calcification of femoral or iliac artery**