

2 cc of contrast. A case of intravascular  
ultrasound assisted endovascular aortic  
repair

# Patient Initials or Identifier Number

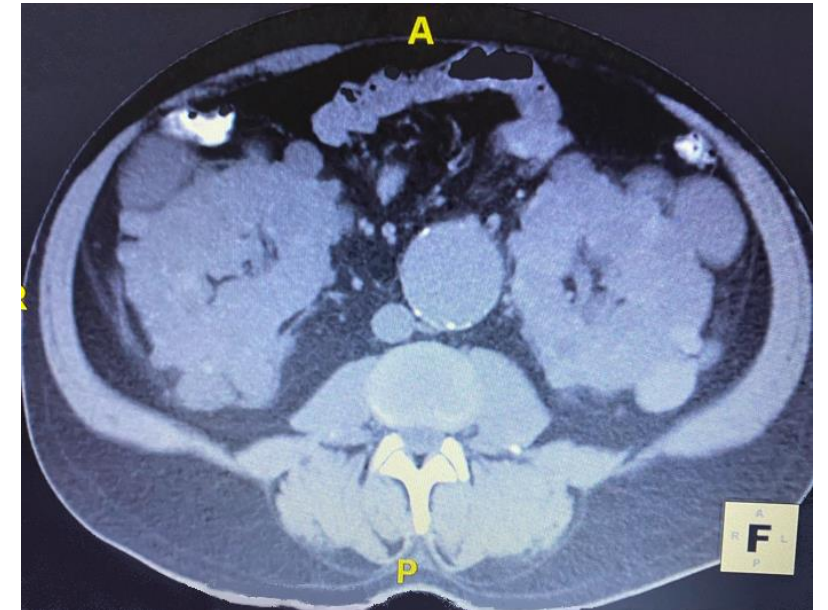
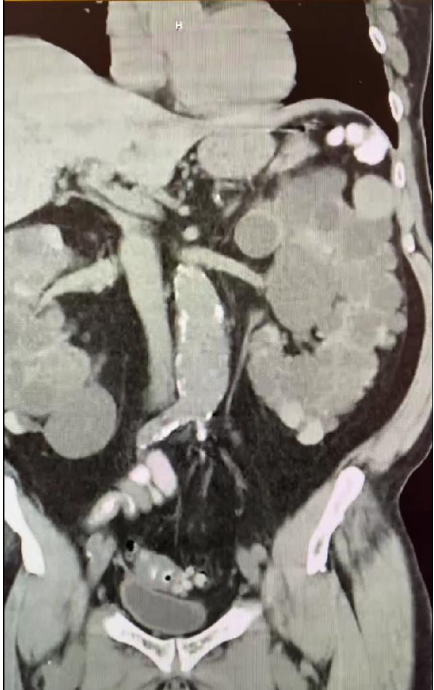
- **Patient initials:** RQ

# Clinical Presentation

- 55-year-old male with history of hypertension, dyslipidemia, abdominal aortic aneurysm (AAA), adult polycystic kidney disease (APKD) with stage IV chronic kidney disease.
- Patient presented to the office due to rapid progression of AAA.

# Relevant Test Results Prior to Catheterization

- CT abdomen and pelvis without contrast showed presence of APKD, AAA measuring 5.5 x 5.4 cm, an increase of 0.9 cm over 1 year.
- Baseline laboratory work showed BUN 36, creatinine of 3.2 with eGFR of 21 significantly limiting the ability to use contrast.



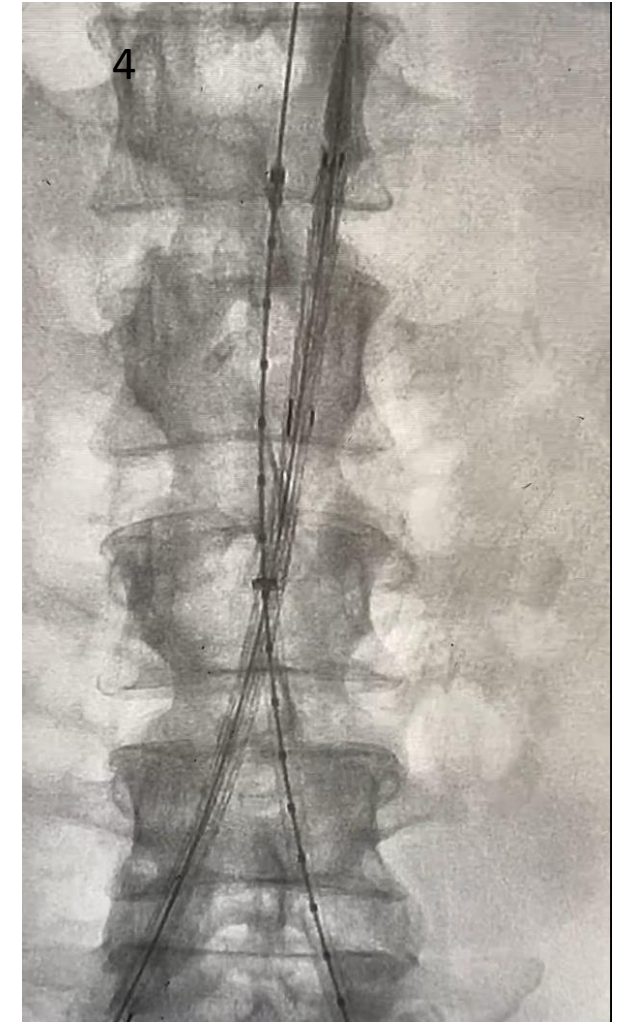
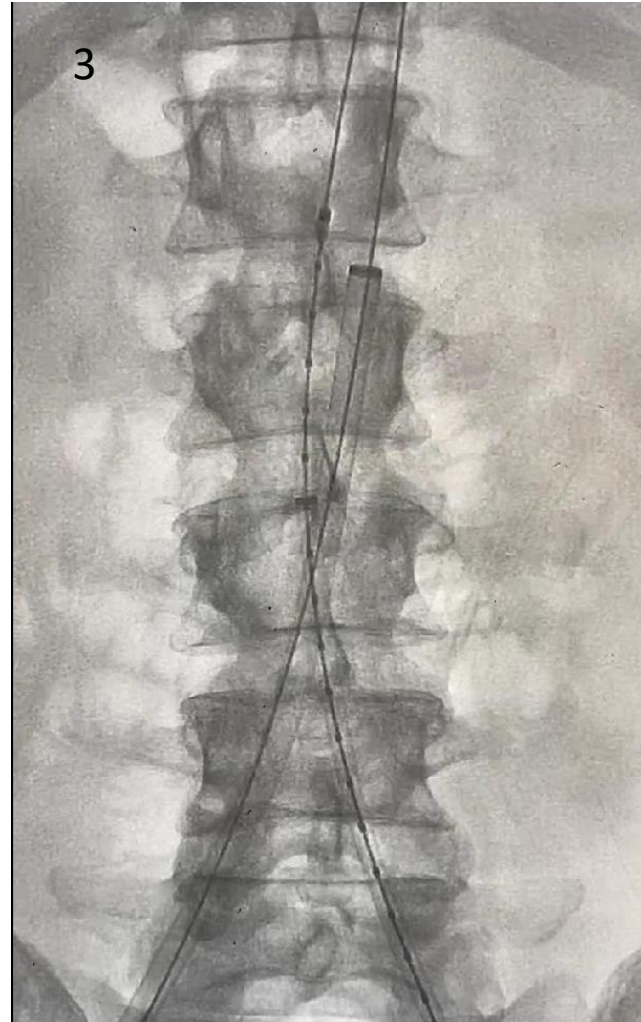
# Interventional Management

- Patient was planned for IVUS guided EVAR. An ultrasound guided access of the right common femoral artery (CFA) was obtained using 4F micropuncture kit and position of catheter was confirmed angiographically using 1 cc of contrast. Sheath was upsized to 6F, “Preclosed” using Perclose ProGlide then vessel was serially dilated up to 18 F. (figure 1)
- Access of the left CFA was obtained similarly, and position was confirmed using 1 cc of contrast. Sheath was upsized to 6 F and site was “Preclosed”, then a 12 F sheath was introduced. (figure 2)



# Interventional Management

- A 0.035" Glidewire was advanced through the 12 F sheath beyond the aneurysm. IVUS was used to identify and precisely mark the location of bilateral renal arteries, measure the size of the aneurysm, and estimate the takeoff of iliac arteries. (figure 3)
- The main body of the Gore 36 mm device was introduced through the 18 F sheath, and IVUS was advanced through the 12 F sheath to confirm location of renal arteries. (Figure 4)



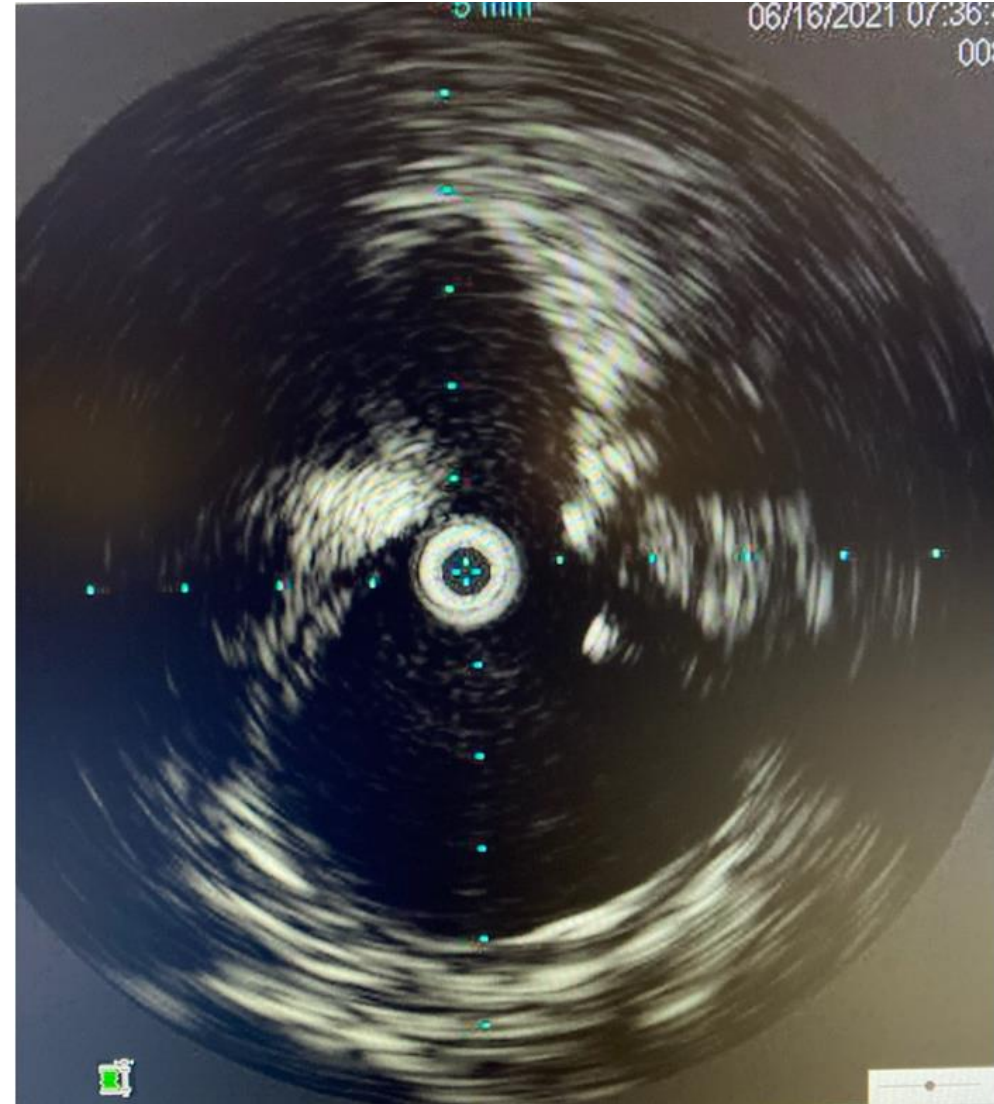
# Interventional Management

- The main body of the stent graft was deployed and a 4 F Omniflush was advanced through it and used to engage bilateral renal arteries confirming infrarenal deployment of the stent. (Figure 5)
- The contralateral limb was then introduced through the 12 F sheath and was deployed successfully. (figure 6)



# Intervention Outcomes

- Final IVUS images were obtained confirming the infrarenal deployment of stent graft with excellent apposition. Location of stent grafts in both iliac arteries was also confirmed.
- No further angiography was performed due to patient's renal dysfunction. Total contrast used was 2 cc.



IVUS confirming the infrarenal deployment of Stent Graft, left renal artery is seen at 12 o'clock position



# Conclusion

- Patients with advance renal disease pose significant limitation on ability to use contrast for endovascular interventions.
- Using IVUS technology and fluoroscopy, endovascular repair was performed, with contrast only used to confirm safe access.
- The sole use of IVUS imaging without any contrast for EVAR deployment can be safely performed in patients with advanced renal disease, minimizing risk of progression to end stage renal disease.