Management of a AAA with Obstructive Uropathy by EVAR Using 20ml of Contrast

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Disclosure

Speaker name: Ahmed Sayed

I do not have any potential conflict of interest
Case presentation

- 58 yr old DM, dilated cardiomyopathy
- Obstructive uropathy from an 8cm diameter AAA
- Ureteric stents inserted
- 3 Hemodialysis sessions
- but serum Cr: 3.5 mg/dL
Endurant II 28mm, 145mm
Location of lowest renal by IVUS
Adjustment of the device at the lowest renal under fluoroscopy marked by IVUS catheter.

Endurant II 28mm, 145mm
Confirmation of position by CO2 angiography using Angiodroid® Injection System
Deployment
Control CO2 angiogram prior to device release
Conventional angiogram using 20ml of Ultravist
Iliac bifurcation marking using IVUS
Deployment of contralateral limb
Ipsilateral iliac bifurcation marking
Control CO2 angiogram
Control CO2 angiogram after ballooning
Conclusions: The injection of nontoxic CO₂ through an automated device allowed to perform EVAR procedures effectively, in the majority of cases. In some cases, a single injection of a minimum amount of conventional contrast medium can be used to overcome the lack of renal artery visualization by CO₂. ELIs are more frequently visualized with CO₂ compared with standard contrast medium. Although the CO₂ injection technique needs further amelioration particularly in the renal arteries detection, this technique appears promising and possibly substitutive of the standard contrast medium, with significant benefit for the renal function.
3 months follow up
Clinical Study
The Assessment of Carbon Dioxide Automated Angiography in Type II Endoleaks Detection: Comparison with Contrast-Enhanced Ultrasound

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Detection. Conclusion. CO₂-A is safe and effective method for ELII detection in EVAR, with a significantly higher agreement with CEUS if compared with ICM-A. This trial is registered with 155/2015/U/Oss.

CONCLUSION

CO₂-EVAR is technically feasible and demonstrates a prominent protective effect on renal function. Our findings indicate that CO₂-EVAR is a promising treatment option for patients with severe renal dysfunction or IC allergy. However, it demands careful consideration of the status of the aortic lumen, which cannot be determined by CO₂ angiography and simple CT alone, to avoid severe complications.
Carbon Dioxide as Contrast Medium to Guide Endovascular Aortic Aneurysm Repair

Cynthia de Almeida Mendes,¹,² Alexandre de Arruda Martins,¹,² Marcelo Passos Teivelis,¹ Sergio Kuzniec,¹ Andrea Yasbek Monteiro Varella,¹ and Nelson Wolosker,¹ Morumbi, Jardim Ângela, São Paulo, and Brazil


Conclusions: The use of CO₂ as a contrast medium for EVAR is an alternative in patients with no restriction for ICM, with similar outcomes when compared to ICM, regarding duration of surgery, duration of fluoroscopy, and endovascular material costs. Using CO₂, there were no changes in creatinine clearance and no risk of hypersensitivity reactions; moreover, there was a reduction in contrast-related costs for EVAR procedures. However, in our study, additional use of ICM to visualize the internal iliac artery was needed in most procedures.
Summary

Planning + intervention + follow up with <20ml

>>>>>> feasible

- Good quality MRA dicom images can be used for EVAR sizing & planning
- Train your eyes on CO2 images. Prepare the abdomen well!
- Good aortic images with the new software of Angiodroid®
- IVUS is an excellent tool for marking of locations. Get used to its images!
- Ultrasound surveillance
Thank you for your attention
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