Rifampin-Soaked Endografts for Treating Prosthetic Graft Infections: When can they work and What Associated Techniques Are Important?
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Conflicts of interest
• None

Open surgery for mycotic aneurysms is not perfect
• While logical, open approaches have a M+M of at least ~40% in abdominal operations (higher in the chest)
• Sick, old, infected patients do poorly with major open operations
• Endografts have a lower M+M overall

Theoretical reasons NOT to use endografts
• Putting a prosthetic endograft into an infected aorta will immediately get infected
• Not removing the infected tissue will create an abscess in the aorta outside the endograft
• You have to replace the aorta for aorto-enteric fistulae

Endograft in an infection = abscess
• 64 y/o with back pain
• Saccular TAA treated with TEVAR….
• 2 weeks later has fever, abdominal pain and back pain
Ilio-Celiac bypass and TAAA repair with left heart bypass and 2 arch homografts

But what about cases you can’t/shouldn’t do open?
• 44 y/o IV drug user with recurrent S. aureus endocarditis and bacteremia
• Previous aorto-bifemoral (occluded), iliac stents and many, many laparotomies for bowel obstructions resulting in an ileostomy and short bowel syndrome
• CT abdomen and Indium scan positive for >2cm mycotic AAA

OPEN REPAIR!
• We tried for hours to re-enter the abdomen and use femoral vein…

Added Rifampin to a Uni-iliac graft + Femoral-femoral bypass (Dacron with rifampin)
At 1 year

Rifampin with endografts

Selected Techniques

Rifampin Soaking Dacron-Based Endografts for Implantation in Infected Aortic Aneurysms—New Application of a Time-Tested Principle

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Theoretical reasons NOT to use endografts

- Endografts in infected aortas will immediately get infected and make it worse
- You have to resect and bypass, or replace the aorta with autologous tissue (vein/homograft) or Rifampin-Dacron grafts especially aorto-enteric fisulae
- Not removing the infected tissue will lead to worsening of the infection -> create an abscess in the aorta

63 y/o female in hemorrhagic shock

Previous Dacron patch angioplasty of the aorta 5-6 years ago

Aorto-duodenal Fistula

Occluded bilateral external iliac arteries

Aorto-enteric fistulae?

- Multiple abdominal hernias and bowel resections + skin graft on bowel
Theoretical reasons NOT to use endografts

- Endografts in infected aortas will immediately get infected and make it worse.
- You have to resect and bypass, or replace the aorta with autologous tissue (vein/homograft) or Rifampin-Dacron grafts—especially aorto-enteric fistula.
- Not removing the infected tissue will lead to worsening of the infection -> create an abscess in the aorta.

Aorto-esophageal fistula?

- 69 y/o Male in hemorrhagic shock, hematemesis from Aorto-esophageal fistula.
• Plan was to temporize and do definitive repair
• POD 9 had cervical esogagostomy and diversion
• Went home with a plan for later repair

But.....
• Returned with fever and malaise.

The problem with enteric fistulae
• 1.5 years returned with a retroperitoneal abscess
• BUT in a much better physiological state!
• Axilo-femoral and open aortic resection with a gastro-jejunostomy was needed…semi-electively!

Long term…

Theoretical reasons NOT to use endografts
• Putting a prosthetic endograft into an infected aorta implies it will immediately get infected
• You have to replace the infected autologous tissue (vein/homograft) or use in Dacron grafts for aorto-enteric fistulae
• Not removing the infected tissue will lead to worsening of the infection -> create an abscess in the aorta

Conclusions + tips
• Endografts in mycotic aneurysms save lives
• Use liberally for "bad" cases (the patient, the aorta, or the presentation)
• Treat with ABX as long as possible prior to implantation
• 60mg/mL of Rifampin on DACRON grafts may prolong the protection
• May even lead to complete resolution in primary aortic cases

Conclusions + tips
• I have also added trans-lumbar/thoracic pigtail drain and infused Rifampin into the per-endograft sac for 10 days*
• TPN on aorto-enteric fistula
• I use ABX for life (Amox/Clav or TMP/Sulfa +/- Diflucan)
• Have a good plan "B"! They may come back in 2 weeks or 2 years*
• Deploy them low, or cut off the suprarenal fixation


Thank you
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