Endovascular Treatment Of Infected Aortic Aneurysms Involving The Visceral Vessels: Case Discussion

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Disclosure

Speaker name:
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I do not have any potential conflict of interest
Case Presentation:
63 yr old male presented with acute myeloid leukemia, & Atrial fibrillation

- Chemotherapy
- Bone marrow transplantation
- Immuno-suppression

- Acute right hypochondrial pain and tenderness

- Initial U/S and CT of the abdomen were unremarkable
CTA 5 DAYS LATER
• Renal functions: normal
• Renal scintigraphy: marked decline of function in the right kidney
• Negative blood culture
• Antimicrobial therapy:
  – Meronam, Vancomycin, and Caspofungin
Management Options

• Delayed repair after control of infection?
• Immediate Repair?
  ▪ Open Repair
  ▪ Endovascular repair

Debridement – durable
++ Morbidity and mortality

Less Morbidity and mortality
Durability? No debridement
Limitations Of Open Surgery

- Thoraco-abdominal exposure
- Aortic cross-clamping (supraceliac)
- Unpredictable extent of aortic wall infection
- Difficult closure of aortic stump in case of extra-anatomic bypass
- Extremely high-risk patient for such hemodynamic stress and ischemia-reperfusion injury
Management Options

B) Endovascular repair

1. Fenestrated graft
2. Chimney/snorkel
3. Debranching
Debranching followed by EVAR in the same session
Post-deployment type 1 endoleak
Balloon dilatation
Final angiogram
Postoperative course

- Uneventful recovery
- 3 Days later: rise of creatinine to 4mg/dL, but urine output was 50-150 ml/hour
- Return to normal renal functions and urine output after two weeks
Postoperative Course

• Bone marrow depression:
  – persistent anemia (Hb: 8g/dL) inspite of blood transfusion
  – TLC: 850/mm³
  – Platelets: dropped gradually to 15000/mm³

• The patient developed circulatory collapse, no postmortem was available.
Complete resolution of infection by antibiotics
Complete regression of a symptomatic, mycotic juxtarenal abdominal aortic aneurysm after treatment with fenestrated endovascular aneurysm repair


J Vasc Surg. 2016 Sep;64(3):803-6
Cardiovascular Surgery

Endovascular Treatment of Mycotic Aortic Aneurysms
A European Multicenter Study

Sörelius et al, Circulation 2014;130:2136-2142

130 infected aneurysms
16 centers
Main findings

1. Good short-term outcome
   (91% survival at 30 days)

2. A significant number (19%) of fatal infection-related complications

3. A relatively good long-term outcome
   (55% survival at 5-years)

Conclusions—Endovascular treatment of MAA is feasible and for most patients a durable treatment option. Late infections do occur, are often lethal, and warrant long-term antibiotic treatment and follow-up. Patients with non-Salmonella-positive blood cultures were more likely to die from late infection. (Circulation. 2014;130:2136-2142.)
A palliative treatment option
A bridge to later elective radical open surgery, once the patient has recovered from the initial emergency.

However, this strategy was rarely adopted. A few were converted to emergency open repair for life-threatening complications, whereas most patients were either too well to justify a major open procedure or were too fragile to withstand such an operation.
Summary

- Infected aortic aneurysms can **progress and rupture quite rapidly**
- Endovascular exclusion with debranching of the visceral vessels is a **suitable** option in such high risk patients.
- **Less invasive** than open surgery.
- A **bridge** to open surgery or a **destination therapy**.
- The extent of aortic coverage is debatable.
Thank you for your attention!
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