HONORHEALTH Primary Clinical Affiliate

ASU School of Medicine and Advanced Medical Engineering
Arizona State University

Spinal Cord Ischemia Rescue Following Thoracoabdominal Branched Endoprosthesis with Bilateral Iliac Branch Endoprosthesis for a Pararenal Abdominal Aortic Aneurysm and Bilateral Common Iliac Artery Aneurysms : A Case Report

Shiv Patel, D.O[1], Hasan A. Aldailami , M.D.[1,], Mitri K. Khoury, M.D.[1]

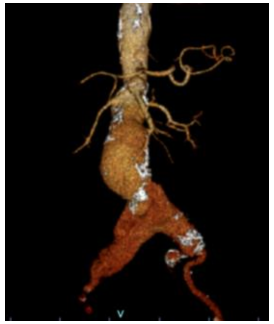
[1]HonorHealth Heart Care Scottsdale, AZ

Introduction

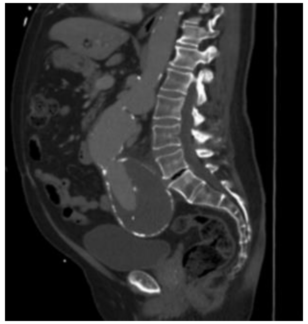
Gore Thoracoabdominal branched endoprosthesis (TAMBE) has become an attractive modality for the treatment of pararenal abdominal aortic aneurysms. TAMBE is available off the shelf and has shown excellent results in short-term studies. Additionally, liac branch endoprosthesis (IBE) has permitted endovascular repair of iliac artery aneurysms while preserving pelvic circulation.

Here, we describe a case of TAMBE with bilateral IBE placement in a patient who developed post-operative spinal cord ischemia utilizing our rescue protocol.

A



B



C

D

Figure 1. (A) pre-op 3D reconstruction, **(B)** preop sagittal CTA showing right common iliac aneurysm and superior mesenteric artery aneurysm, **(C)** post-op 3D reconstruction, **(D)** post-op axial images demonstrating patent bilateral iliac branch endoprostheses.

Case Report

65-year-old male with a history of tobacco use was incidentally found to have a **6.1 cm pararenal abdominal aortic aneurysm (AAA), superior mesenteric artery (SMA) aneurysm,** and **bilateral large common iliac artery aneurysms.**

Procedure:
Devices used: 37mm TAMBE, bifurcated device, and bilateral 23 mm IBEs
Access:
- Right common femoral artery cutdown (22F sheath)
- Right axillary artery cutdown (14F sheath)
- Left common femoral artery percutaneous access (16F sheath)

TAMBE and bilateral IBE performed without incident
Completion angiogram: no endoleaks; bilateral internal iliac arteries preserved

Operative details:
- Femoral sheaths in place for 3.5 hours
- Patient extubated, normotensive, and moving all extremities post-op

Postoperative course:
ICU admission for monitoring
8 hours post-op: Bilateral leg paralysis, no signs of stroke
Spinal cord ischemia speculated

Interventions:
- Lumbar drain placement
- 1000mg methylprednisolone x1
- Naloxone infusion (1 mcg/kg over 48 hours)
- Hemoglobin maintained >12 mg/dL
- MAPs >100

Outcome:
Lumbar drain removed on post-op day 4
Discharged to rehab on post-op day 7 with motor recovery
Ongoing outpatient physical therapy
Patient now ambulates independently without a walker

Conclusion

In conclusion, despite preservation of internal iliac arteries during bilateral IBE with concurrent TAMBE procedure, patients may still have significant risk of spinal cord ischemia. Here we described a case of a patient who was rescued from spinal cord paralysis with expeditious diagnosis and treatment with drainage, naloxone and high dose steroids. Post operative scans at 1 month showed patent endograft without any endo-leaks and no apparent graft complications.