



**ENDOVASCULAR TREATMENT**

**Early Results and Feasibility of Total Endovascular Aortic Arch Repair Using 3-Vessel Company-Manufactured and Physician-Modified Stent-Grafts**

Cooper, manufacturer device; Physician modified endograft

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- A single center experience with 5 Cook CMD Arch Branch and 4 PMEG
- All triple branch/fenestrated design
  - 100% technical success
  - 0% CVA, SCI
  - 2 access complications, 1 AKI
  - 1 PMEG developing graft infection at 1 year
  - 6 with endoleaks at 1 month, all resolving but 1

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**PMEG FOR THE ARCH**

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**PMEG FOR THE ARCH- SIZING**

1. Adjusted centerline along the outer curve
2. Measure longitudinal distance from the proximal seal zone to the arch branch vessels

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**PMEG FOR THE ARCH- SIZING**

3. Hind-view of the aortic arch
4. 12 O'Clock defined as the trajectory between true and adjusted centerline
5. Measure clock positions and arc lengths for arch branch vessels

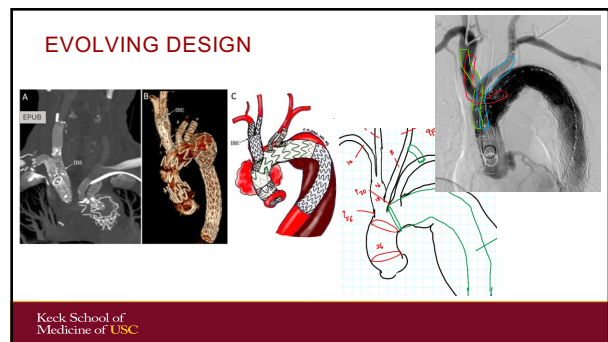
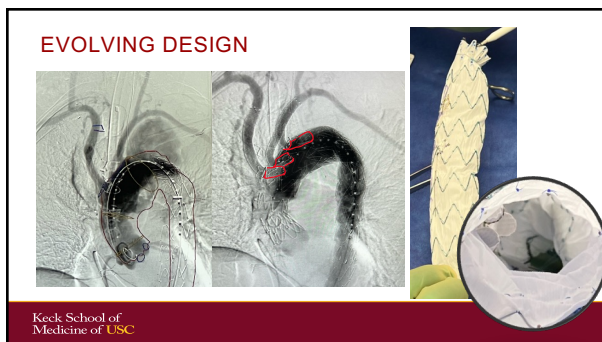
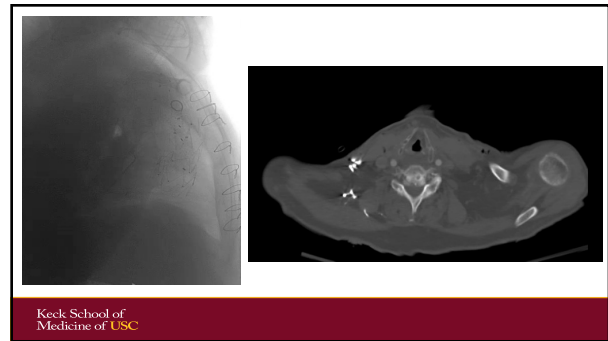
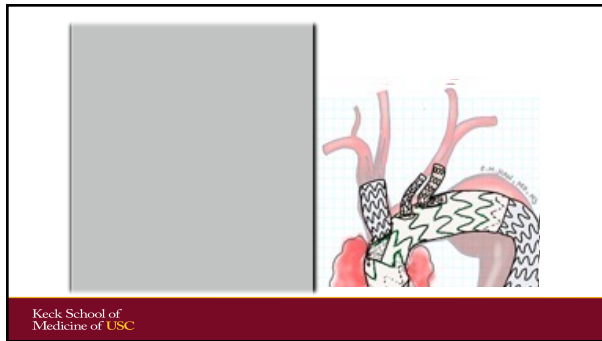
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**PMEG FOR THE ARCH- MODIFICATION**

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**PMEG FOR THE ARCH- MODIFICATION**

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### USC Experience (11/2018~10/2022)

	Endo Arch	Open TAR
Number of Subjects	21	144
Age (mean ± SD)	76.0 ± 7.2	58.6 ± 13.8
ASA		
III	12 (57.1%)	
IV	8 (38.1%)	
V	1 (4.8%)	
Chronic Obstructive Pulmonary Disease	8 (38.1%)	14 (9.7%)
Stroke or TIA	9 (42.9%)	10 (6.9%)
Peripheral Arterial Disease	3 (14.3%)	5 (3.5%)
Decline Blood Product Transfusion	3 (14.3%)	0 (0%)

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### Demographics

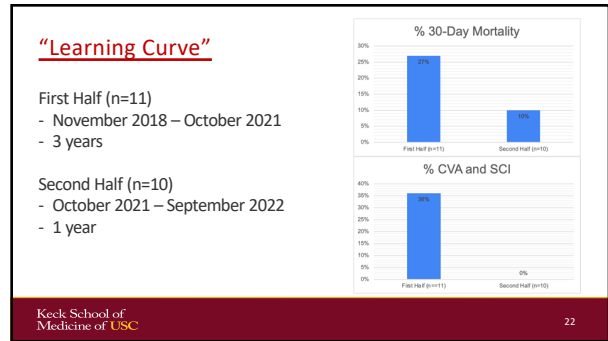
Primary Pathology	
Aneurysmal Degeneration of Residual Arch Dissection	8 (38.1%)
Degenerative Aneurysm	6 (28.6%)
Acute Aortic Syndrome (Dissection, IMH, PAU)	5 (23.8%)
Pseudoaneurysm	2 (9.5%)
Prior Aortic Repair	
Open	7 (33.3%)
Endovascular	2 (9.5%)
Open and Endovascular	2 (9.5%)
Presentation	
Asymptomatic	9 (42.9%)
Symptomatic	12 (57.1%)
Ruptured	0 (0%)
Max Aortic Arch Diameter (mm, mean ± SD)	55.5 ± 12.9
Excluding Acute Aortic Syndromes (n=16, 76.2%)	61.0 ± 8.4

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### Outcomes

Perioperative Mortality	4 (19.0%)
Technical Success	17 (80.1%)
Major Adverse Events (within 30 days)	
Myocardial Infarction	1 (4.8%)
Respiratory Failure	3 (14.3%)
Renal Failure with New Dialysis Requirement	0 (0%)
Bowel Ischemia Requiring Resection	0 (0%)
Stroke	3 (14.2%)
Paraplegia	1 (4.8%)
Intraoperative Rupture	1 (4.8%)
Median Follow-up in Days (IQR)	212 (62-343)
Aortic Reintervention	4 (23.8%)
All-Cause Mortality	11 (52.4%)

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- ### SUMMARY
- Physician-modified endografting (PMEG) provides custom, branched/fenestrated TEVAR solution
  - Trend towards inner branches, transfemoral implantation without cervical debranching/access
  - Post-dissection arch aneurysms with minimal mural thrombus, atheroma
  - Continued follow-up is mandatory to ensure freedom from device integrity issues
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