

# Physician-Modified Fenestrated Endovascular Aortic Aneurysm Repair After Failed EVAR Offers Promising Results Compared to Open Conversion

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## Background

- Incidence of EVAR failure from poor proximal seal is occurring with greater frequency
- EVAR conversion (EVAR-c) is gold standard therapy
- Physician-modified F/BEVAR (PM-F/BEVAR) offers endo salvage by gaining proximal seal, preserving renal/viscerals, relining of prior EVAR, and no manufacture time

## Purpose

- Compare outcomes of PM-F/BEVAR to EVAR-c in failed EVAR due to type Ia endoleak
- Evaluate changes in our practice pattern over time

## Methods

- Retrospective review of failed EVAR due to type Ia endoleak
- Infected/thrombosed EVARs excluded
- Patients stratified by treatment strategy: 35 PM-F/BEVAR vs 41 EVAR-c compared using univariate and Kaplan-Meier analysis

Table I: Preoperative characteristics and aneurysm details of PM-F/BEVAR vs EVAR-c

Variable	Total (n=76)	PM-F/BEVAR (n=35)	EVAR-c (n=41)	P-value
<b>Aneurysm Extent</b>				.06
Infrarenal	5 (7)	0 (0)	5 (12)	
Juxtarenal	13 (11)	3 (9)	10 (24)	
Pararenal	26 (34)	13 (37)	13 (32)	
Extent I TAAA	0 (0)	0 (0)	0 (0)	
Extent II TAAA	1 (1)	1 (3)	0 (0)	
Extent III TAAA	6 (8)	3 (9)	3 (7)	
Extent IV TAAA	24 (32)	14 (40)	10 (24)	
Extent V TAAA	1 (1)	1 (3)	0 (0)	
Max aneurysm diameter	72.3 (17.0)	68.2 (14.7)	75.7 (18.3)	.053
<b>Presentation</b>				.02
Elective, intact	61 (80)	33 (94)	28 (68)	
Urgent, symptomatic	7 (9)	1 (3)	6 (15)	
Emergent, rupture	8(11)	1 (3)	7 (17)	

Figure I: 2-year survival of PM-F/BEVAR vs EVAR-c

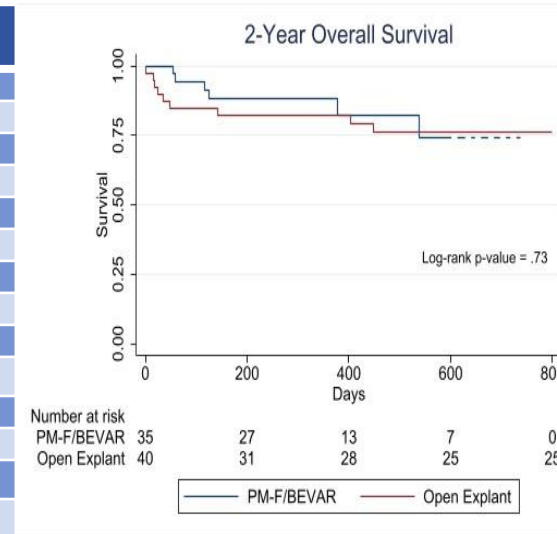


Table II: Perioperative outcomes PM-F/BEVAR vs EVAR-c

	Total (n=76)	PM-FEVAR (n=35)	EVAR-c (n=41)	P-value
Overall length of stay, days	10.3 (10.3)	6.2 (4.0)	13.9 (12.6)	.001
30-day mortality	6 (8)	0 (0)	6 (15)	.03
Any postoperative complication	38 (50)	8 (23)	30 (73)	<.001
Major stroke	2 (3)	0 (0)	2 (5)	.50
Permanent spinal cord ischemia	1 (1)	1 (3)	0 (0)	.72
Acute renal failure	28 (37)	3 (9)	25 (63)	<.001
Renal replacement therapy	8 (11)	1 (3)	7 (18)	.07
Bowel ischemia	3 (4)	0 (0)	3 (8)	.24
Respiratory complication	15 (20)	3 (9)	12 (30)	.02
Discharge to home	59 (77)	34 (97)	25 (60)	.001

## Results

- EVAR-c more likely to undergo urgent/emergent repair
- PM-F/BEVAR had significantly decreased
  - Blood loss
  - RBC transfusion
  - Length of stay
  - 30-day mortality
  - Postop complications (renal/pulmonary failure)
- PM-F/ BEVAR more likely to be discharged to home
- Practice pattern is PM-F/BEVAR first, doubling EVAR-c annually since inception

## Conclusion

- PM-F/BEVAR is safe and effective with better perioperative outcomes compared to EVAR-c
- Using PM-F/BEVAR should be considered as first-line therapy in failed EVAR due to type Ia endoleaks