



Transcaval Retrograde TAVR in Selected Patients

Technique and Outcomes

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Disclosure Statement of Financial Interest

Within the past 12 months, I or my spouse/partner have had a financial interest/arrangement or affiliation with the organization(s) listed below.

Affiliation/Financial Relationship

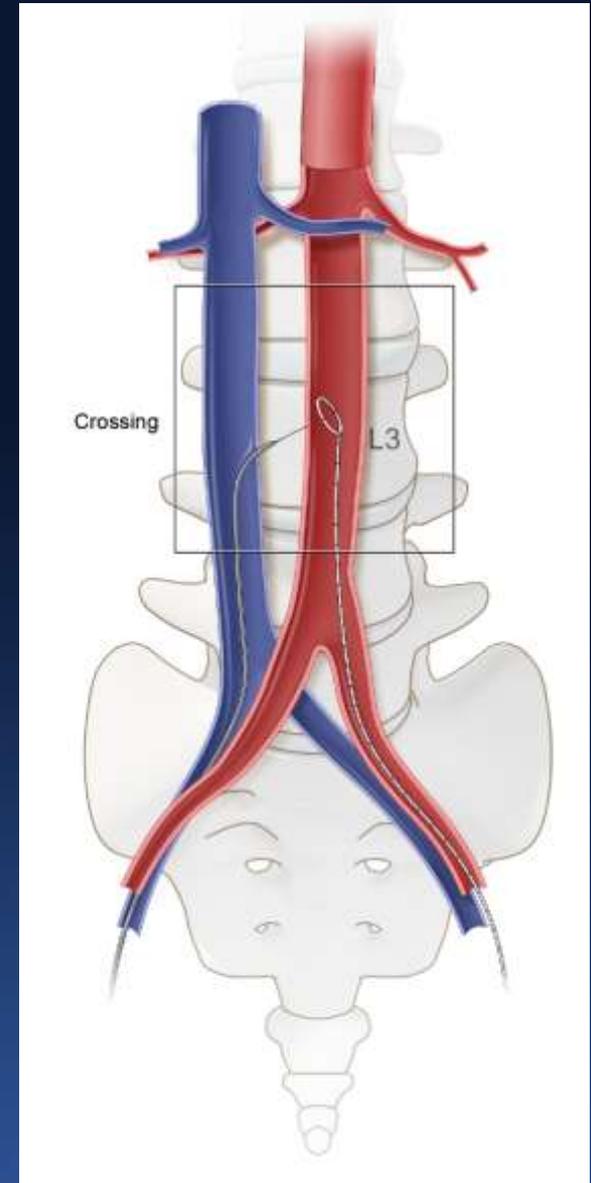
- Intellectual Property Rights

Company

- Inventor on patent applications assigned to Henry Ford Hospital on devices for transcaval access and closure

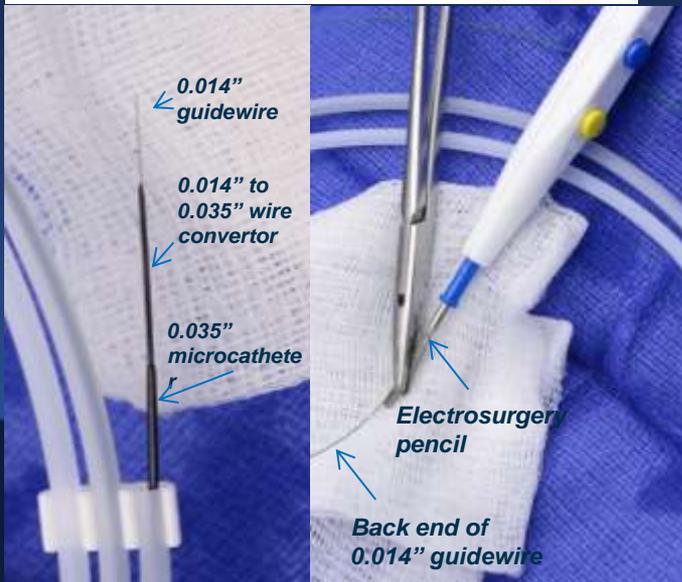
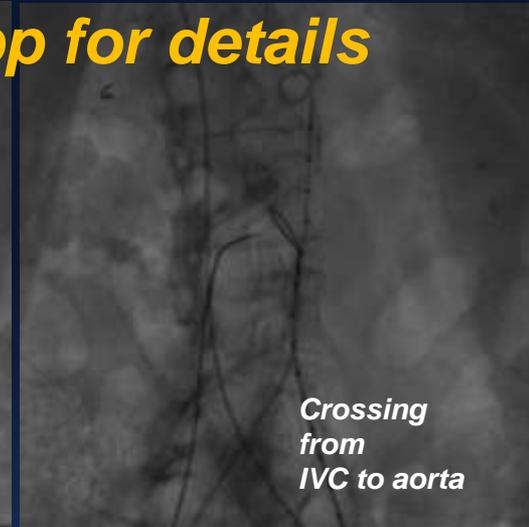
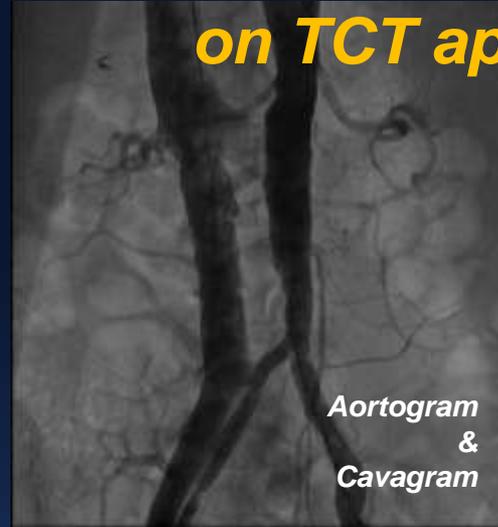
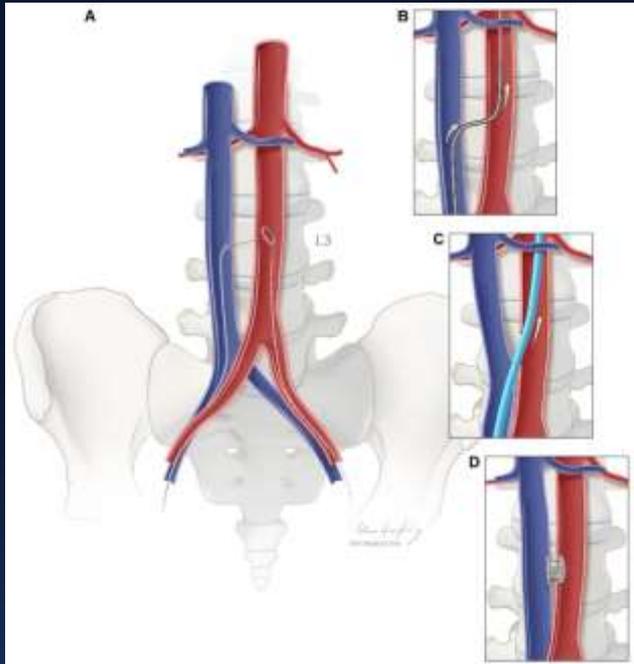
Rationale

- **Despite newer generation TAVR devices...**
 - **Significant segment of population without adequate femoral vessels for TF delivery**
 - **Transapical & transaortic access associated with significant morbidity and contraindicated in some**



Transcaval Technique

*Watch live case from 9/13
on TCT app for details*



Halabi .. Lederman, JACC, 2013
Greenbaum .. Lederman, JACC, 2014

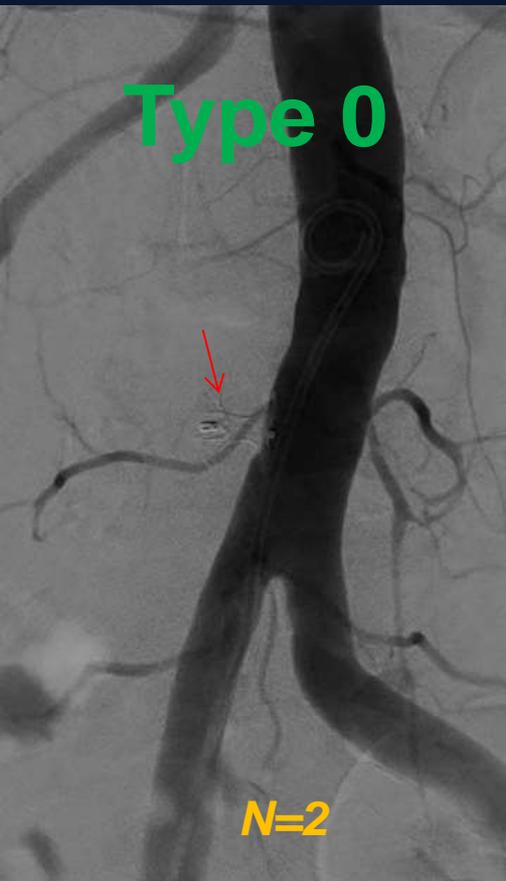


Transcaval TAVR

Worldwide Experience

Center	Total
Henry Ford Hospital ¹ Detroit, MI	36
Angiografia de Occidente ² Cali, Colombia	11
Detroit Medical Center Detroit, MI	2
Spectrum Health Grand Rapids, MI	1
Emory University Atlanta, GA	3
University of Utah Salt Lake City, UT	1
TOTAL	54

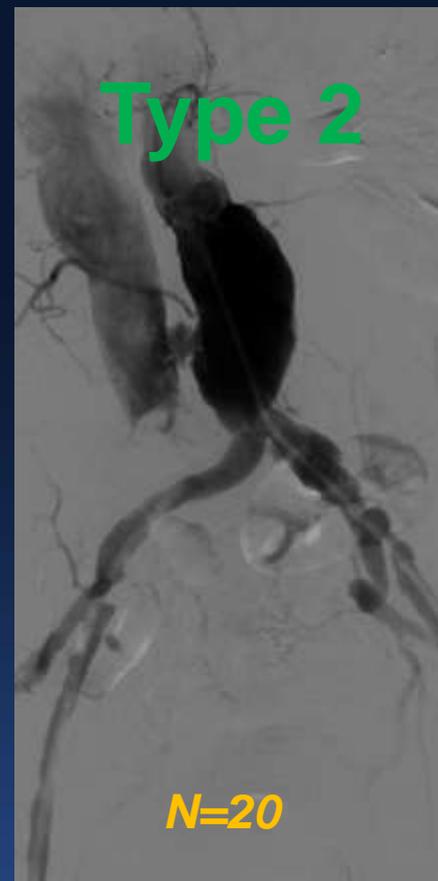
Patterns of Completion Angiography



Complete occlusion



Caval-aortic fistula
with long tunnel,
no extravasation



Caval-aortic fistula +
"cruciform" extra-
aortic contrast.

Most common pattern



Extravasation
(Endograft 7 hrs. later)

Henry Ford Transcaval Results

In-hospital (n=36)

Transcaval success, n	36 (100%)
Transfusion during or post	23 (64%)
Endografts, n	7 (19%)
Immediate, n	2
Delayed, n	5
In-hospital death*, n	2
Length of stay – days	8 ± 7

Follow up (n=34)

Follow-up – days	128 ± 107
Death*, n	3
Vascular complication	0
Tract closure (n=29)	24 (83%)
Time to tract closure (d)	34 ± 45

**None related to transcaval access*



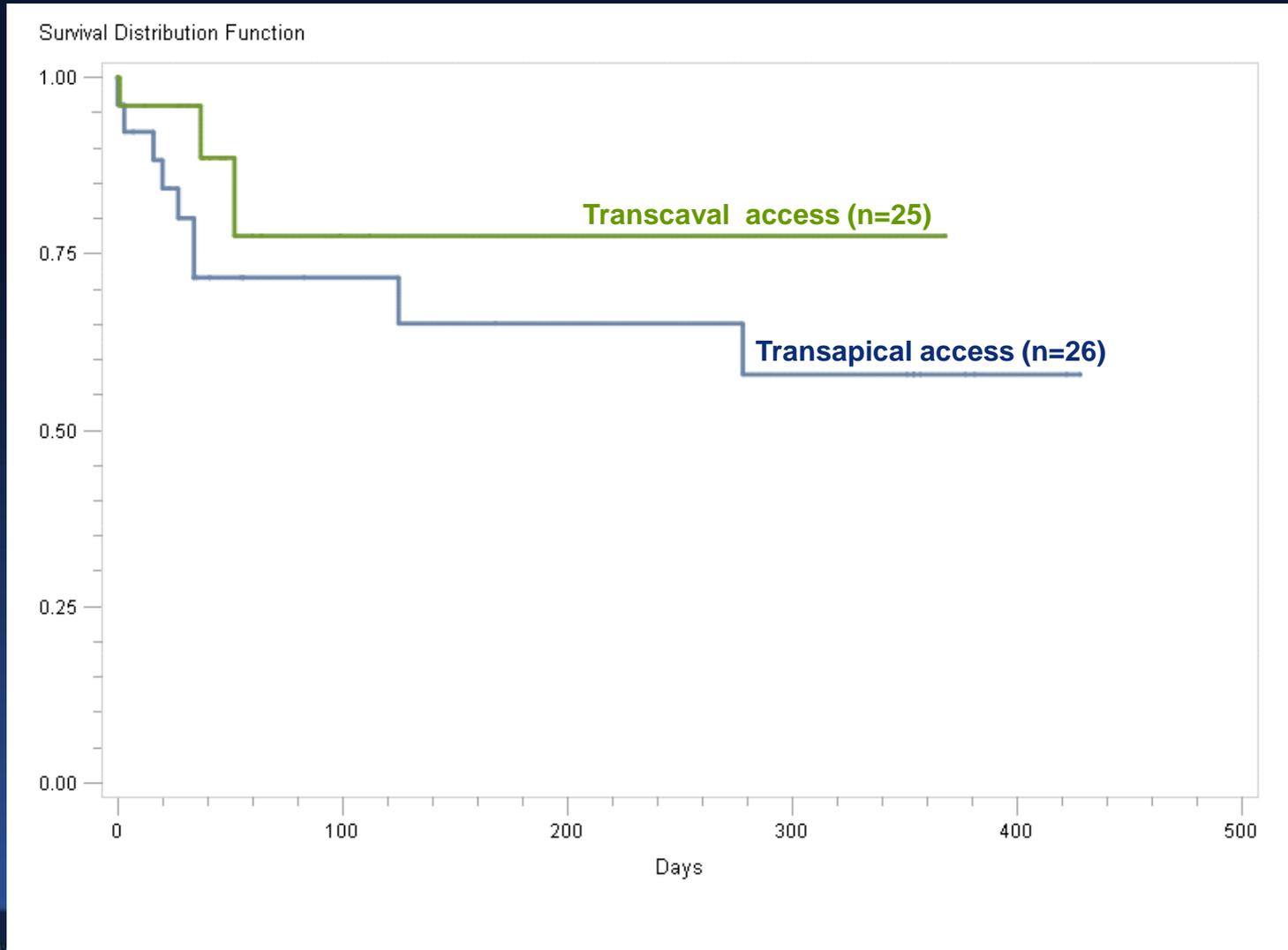
Results

*Latest
closure
algorithm*



	HFH Early (n=28)	HFH Recent (n=8)	Other US Centers (n=7)
Transcaval success	100%	100%	100%
Completion angio pattern	1.8 ± 0.7	1.4 ± 0.7	0.7 ± 1
Transfusion during or post, n	22 (79%)	1 (12%)	-
Endografts, n	6	1	0
Immediate, n	2	0	0
Delayed, n	4	1	0
Length of stay – days	9 ± 8	5 ± 7	-
Death*, n	4	1	1

Comparison to Transapical TAVR



Conclusions

- **Transcaval access is simple, teachable, and effective. It must be planned carefully.**
- **Bleeding and transfusion were common earlier, and are now much less common**
- **Outcomes appear comparable to trans-apical access**
- **US multicenter IDE underway**
- **With refinement, transcaval access may supplant trans-aortic and trans-apical access**