



Transseptal and Transapical Antegrade Access for TEVAR

Tilo Kölbel, MD, PhD

University Heart Center
University Hospital Eppendorf
Hamburg, Germany



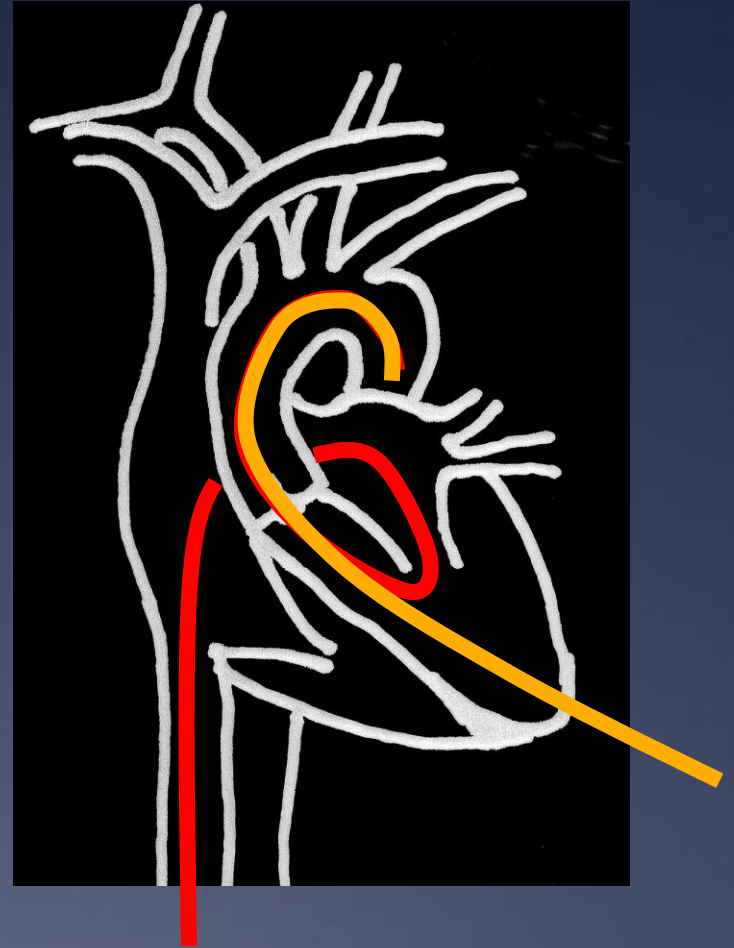
Disclosures

- * Research-grants, travelling, speaking-fees, IP with Cook.
- * Research-grant, travelling, speaking-fees with Cordis

Transcardiac Access Routes

* Transseptal access ●

* Transapical access ●



Why Transcardiac Access?

- * Bad femoral access
- * Short approach to target
- * Device control
- * Easy access to branches
- * Drainage of pericardial effusion
- * Availability (cardiac-units)
- *

How to use it?

- * Through & through wire access
- * Introduction of main stent-graft
- * Branch vessel access
- *

Transapical Access



Transapical Through & Through

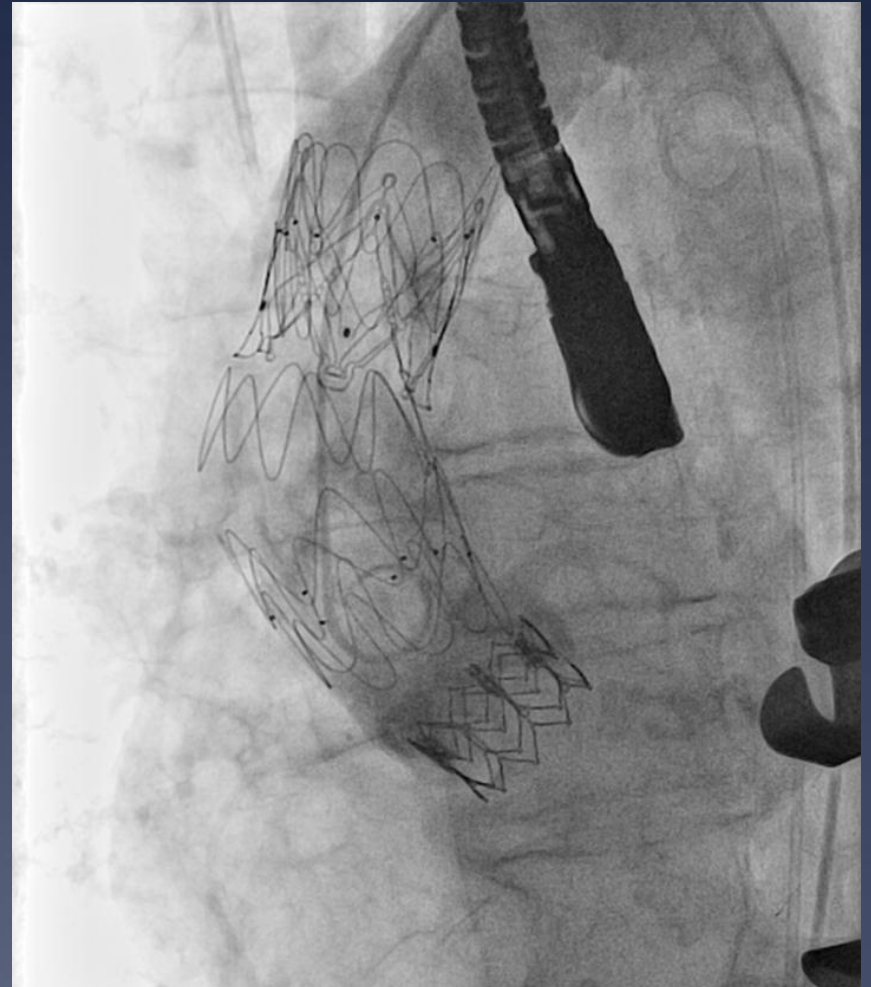
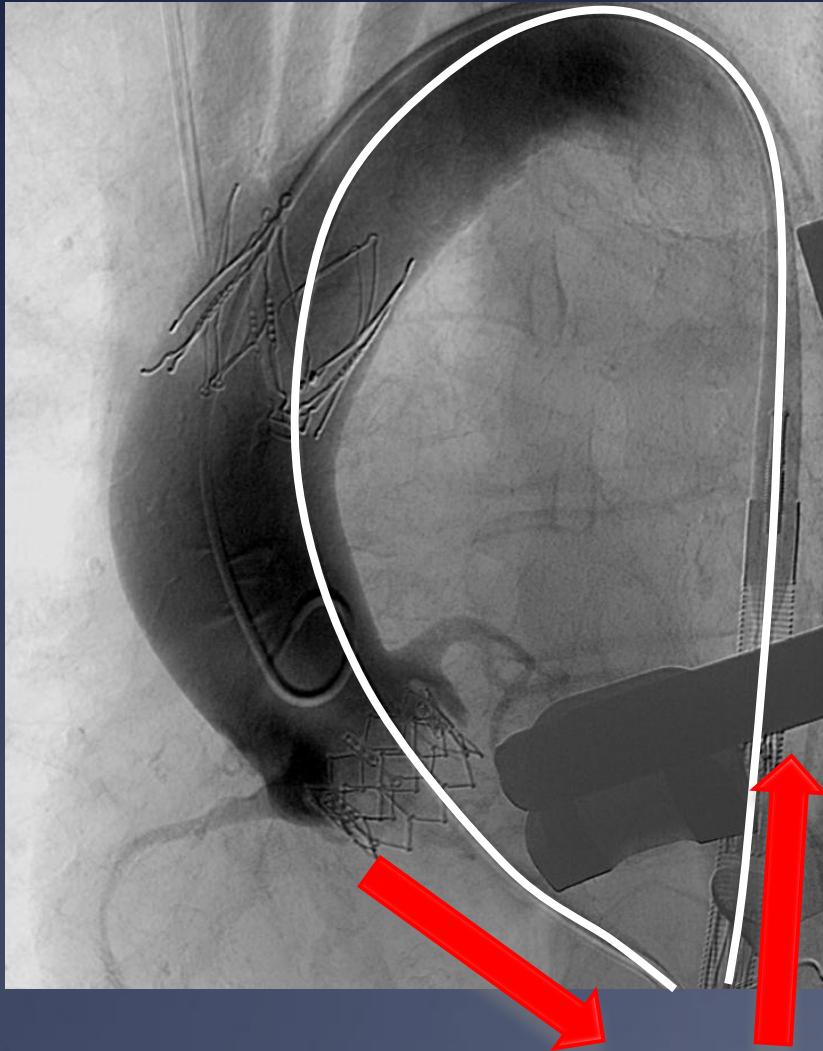
◆ CASE REPORT ————— ◆

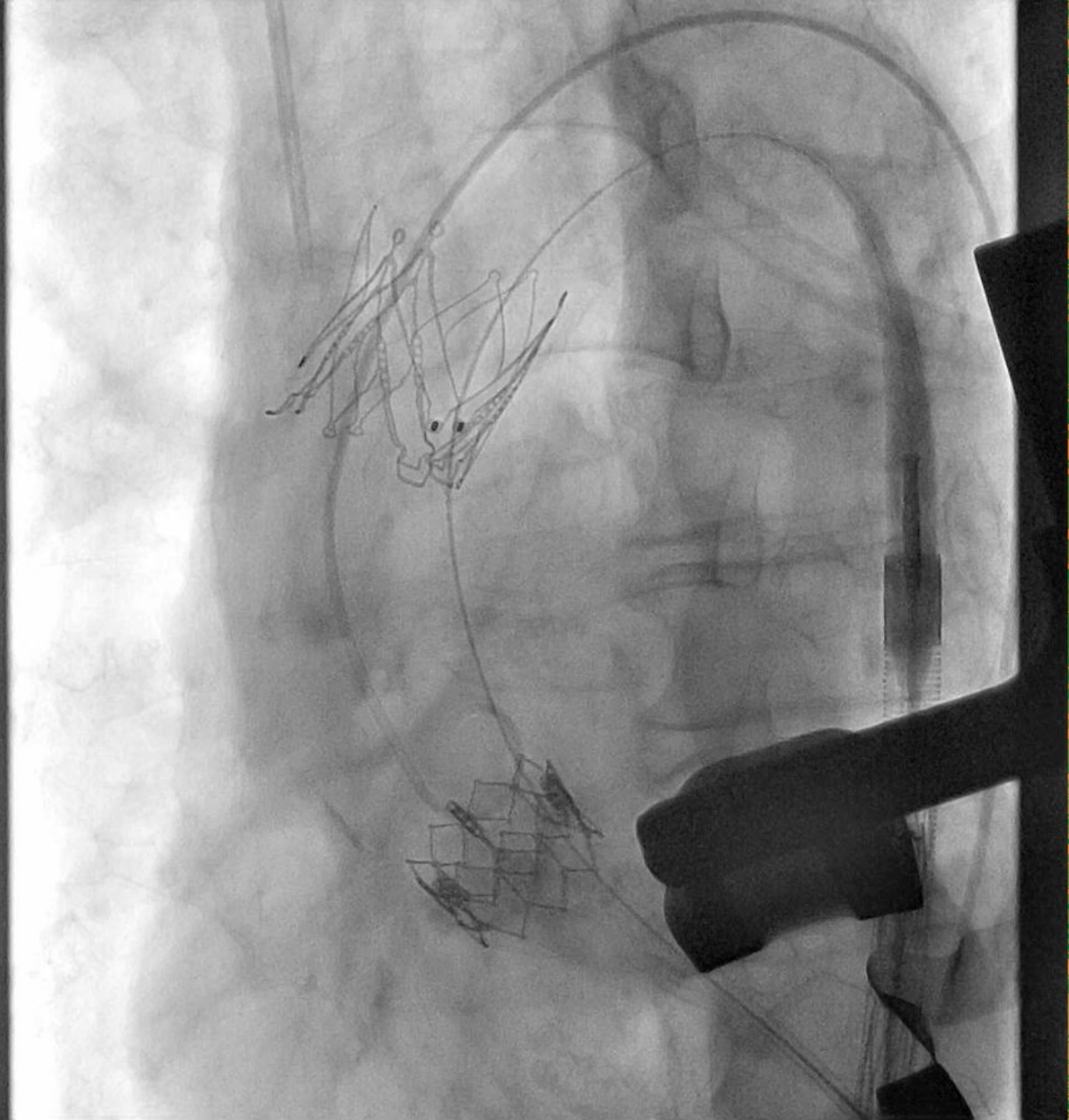
Transapical Wire–Assisted Endovascular Repair of Thoracic Aortic Dissection

Fabio Ramponi, MD^{1,3}; Michael P. Vallely, PhD, FRACS^{1,3,4}; Michael S. Stephen, FRACS²; Paul G. Bannon, PhD, FRACS^{1,3,4}; Matthew S. Bayfield, FRACS^{1,3}; and Geoffrey H. White, FRACS^{2,4}

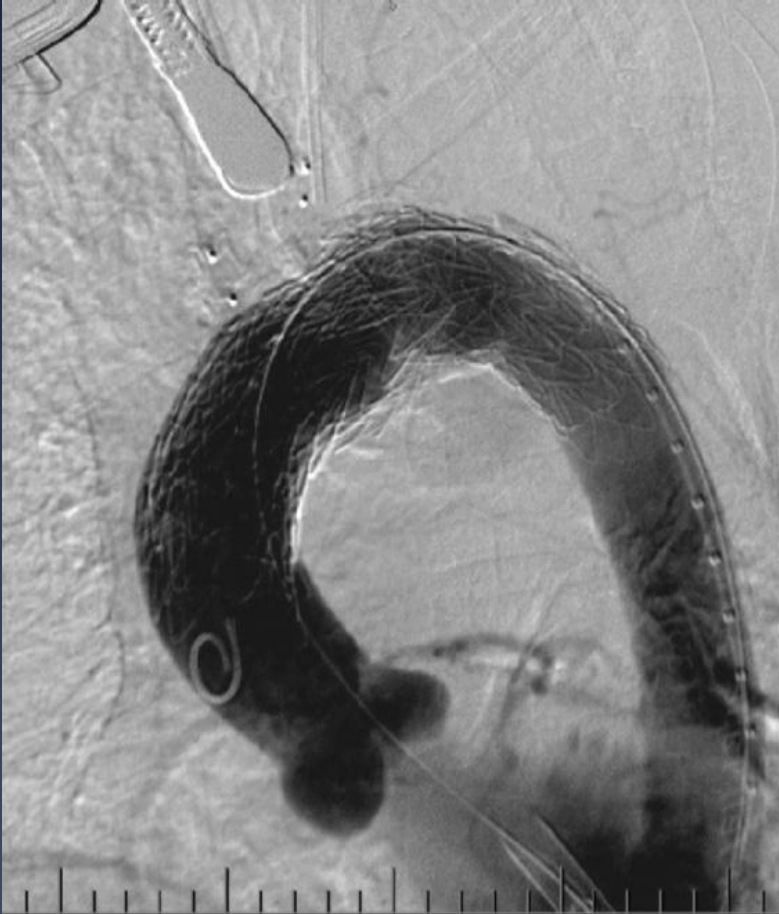
- * Single case report
- * Mini-thorakotomy

Transapical Through & Through

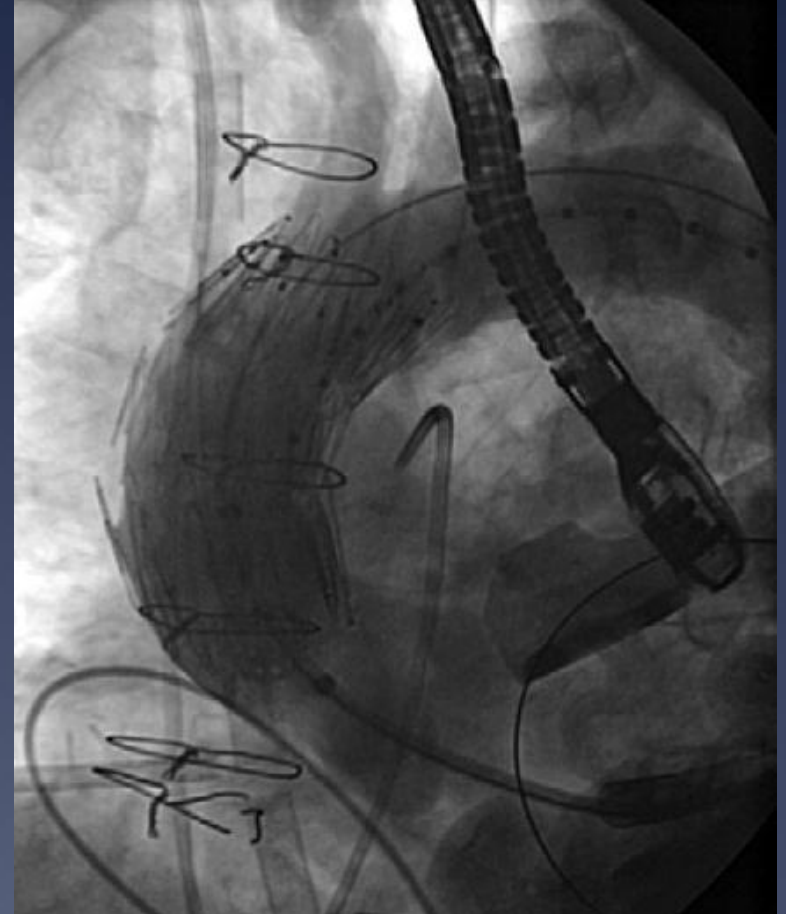




Transapical TEVAR



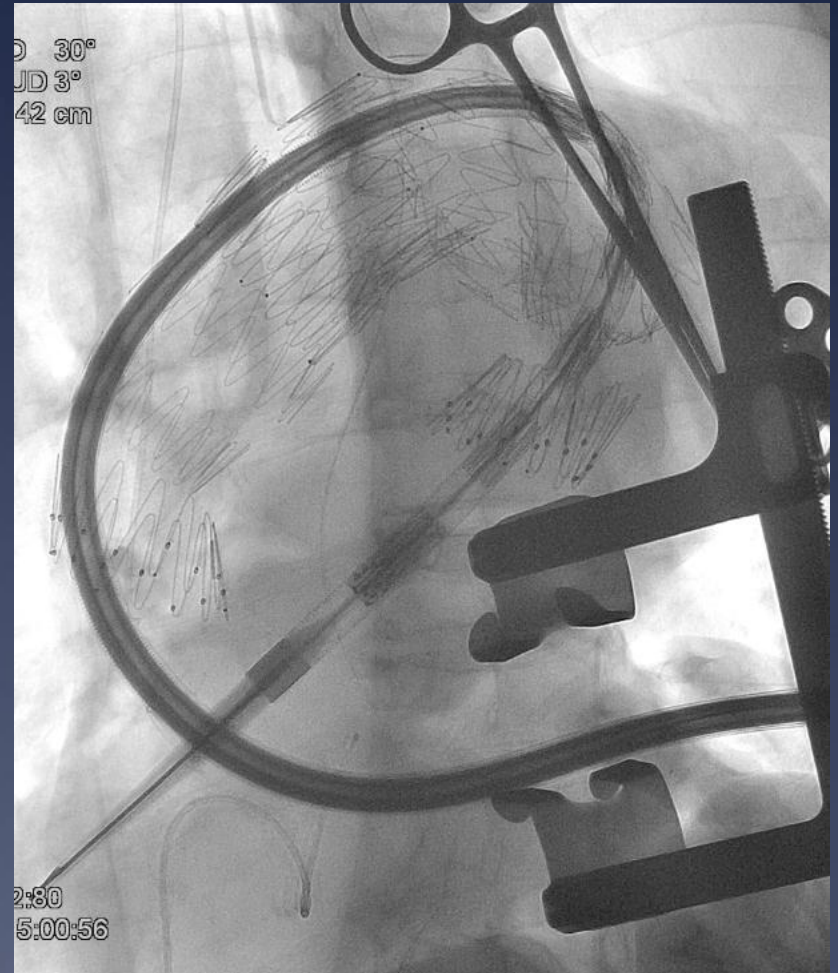
MacDonald et al 2009, JVS 49: 759-62



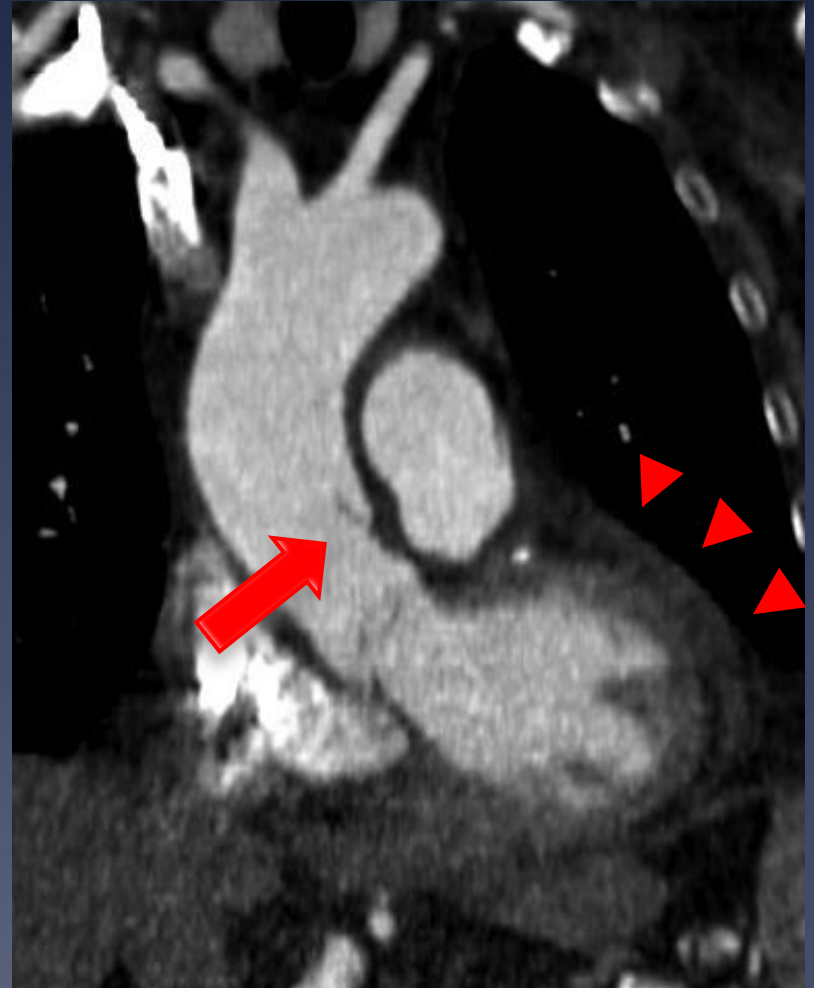
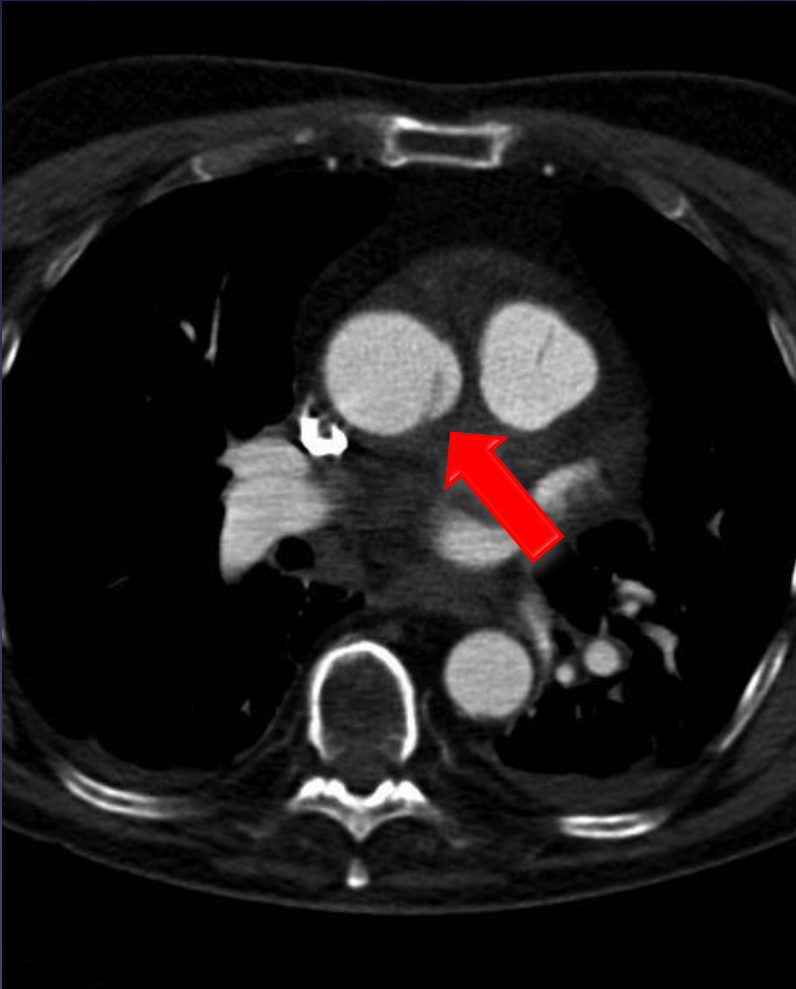
Szeto et al 2010, Ann Thorac Surg 89: 616-8

Transapical TEVAR

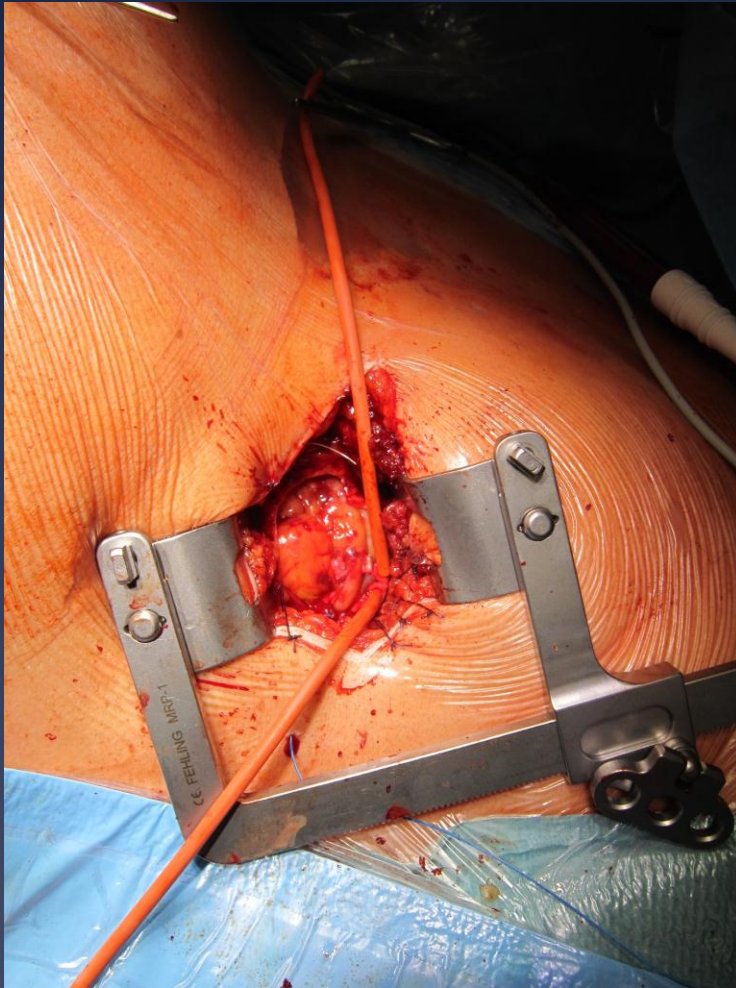
- * Few casereports
- * Well established Access
- * Cardiac axis



Transapical TEVAR in Acute Type A Dissection



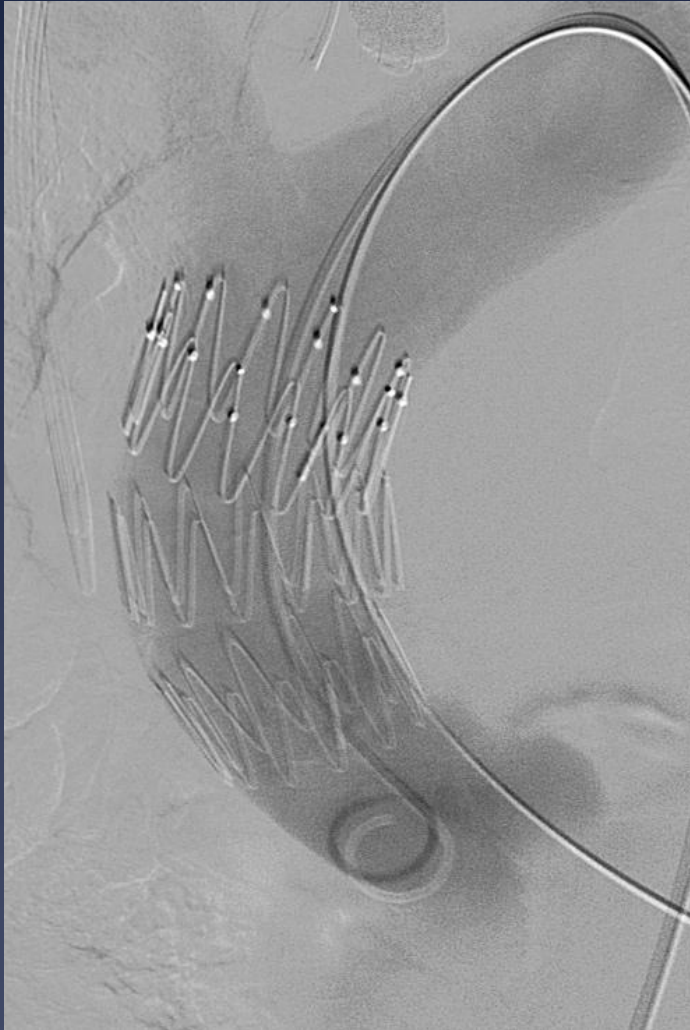
Transapical TEVAR in Acute Type A Dissection



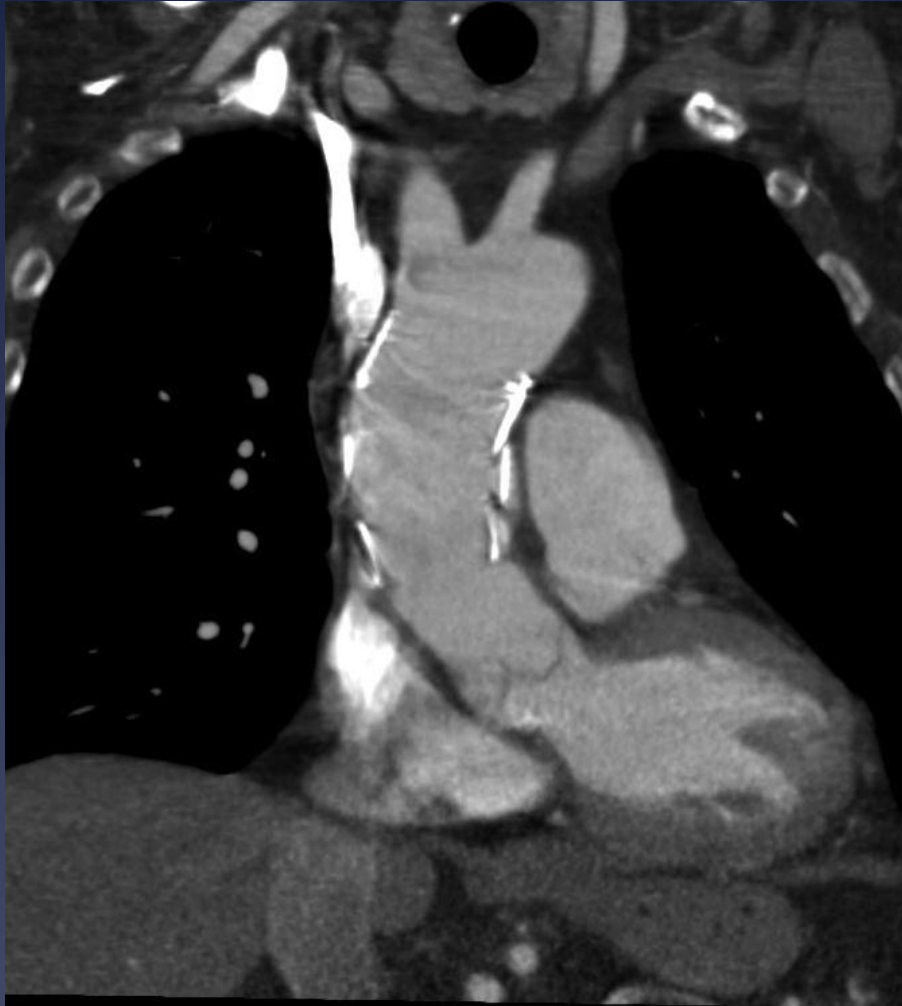
Transapical TEVAR in Acute Type A Dissection



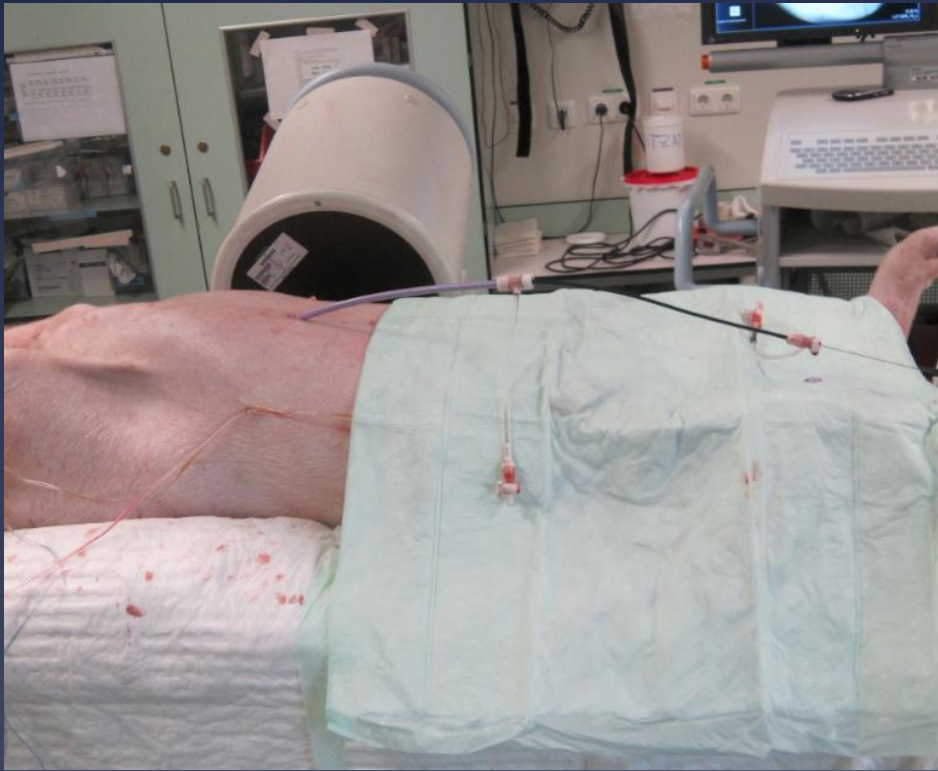
Transapical TEVAR in Acute Type A Dissection



Transapical TEVAR in Acute Type A Dissection



Percutaneous Transapical TEVAR



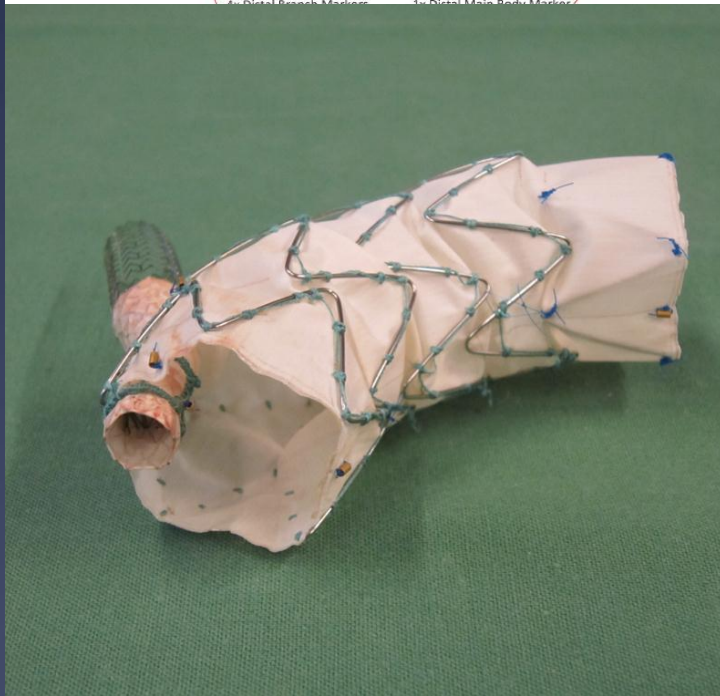
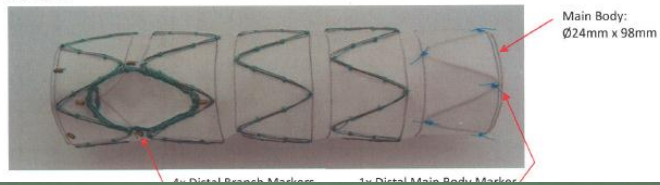
Transapical Branchvessel-access

PRE-LOADED ARCH DEVICE WITH SUBCLAVIAN BRANCH

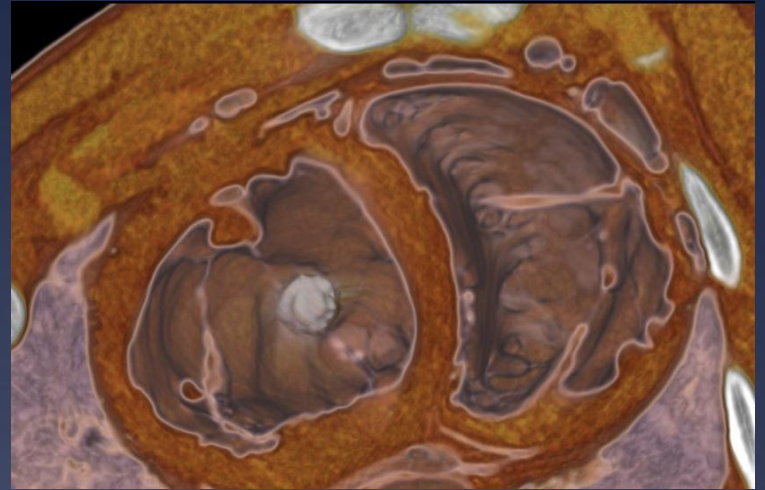
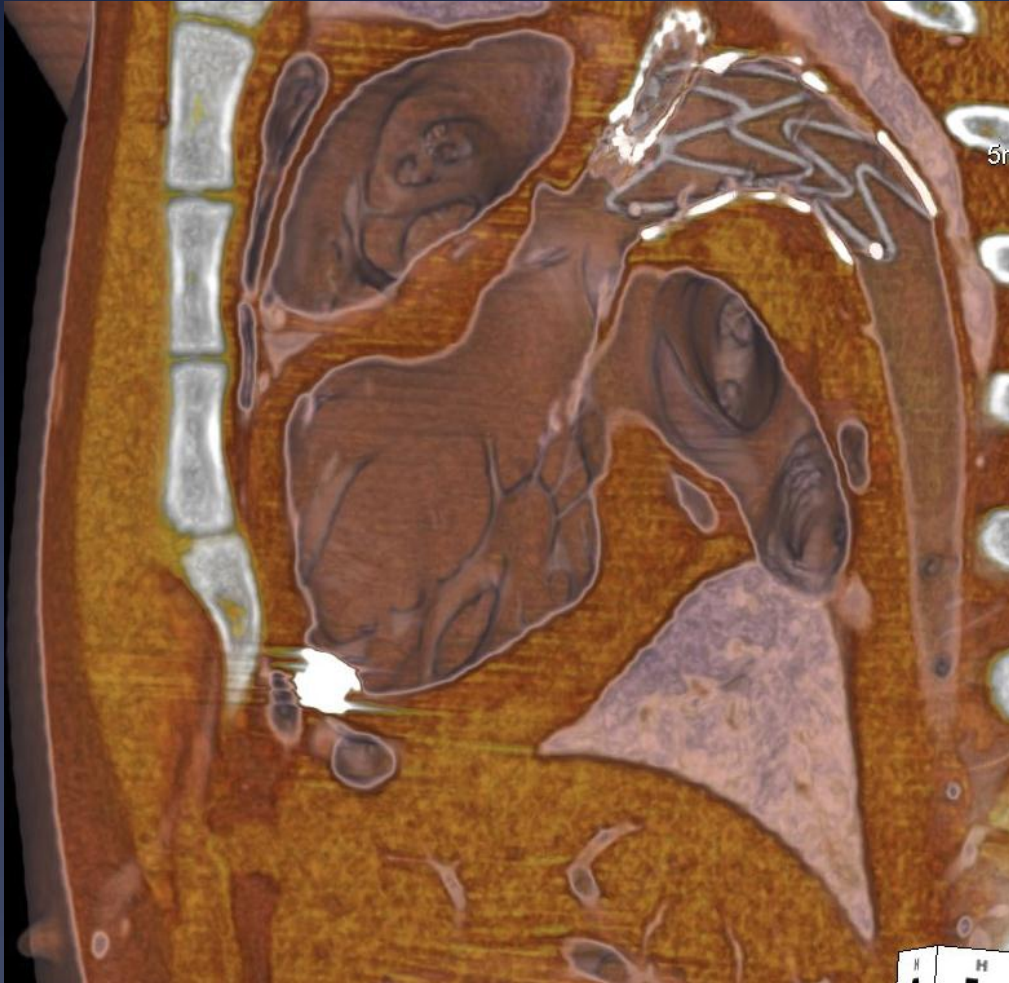
Physician: Dr. Tilo Kölbel

Patient ID: NOT FOR HUMAN USE

As Made



Perc. Transapical Closure



Perc. Transapical Closure

Clinical Experience With Percutaneous Left Ventricular Transapical Access for Interventions in Structural Heart Defects

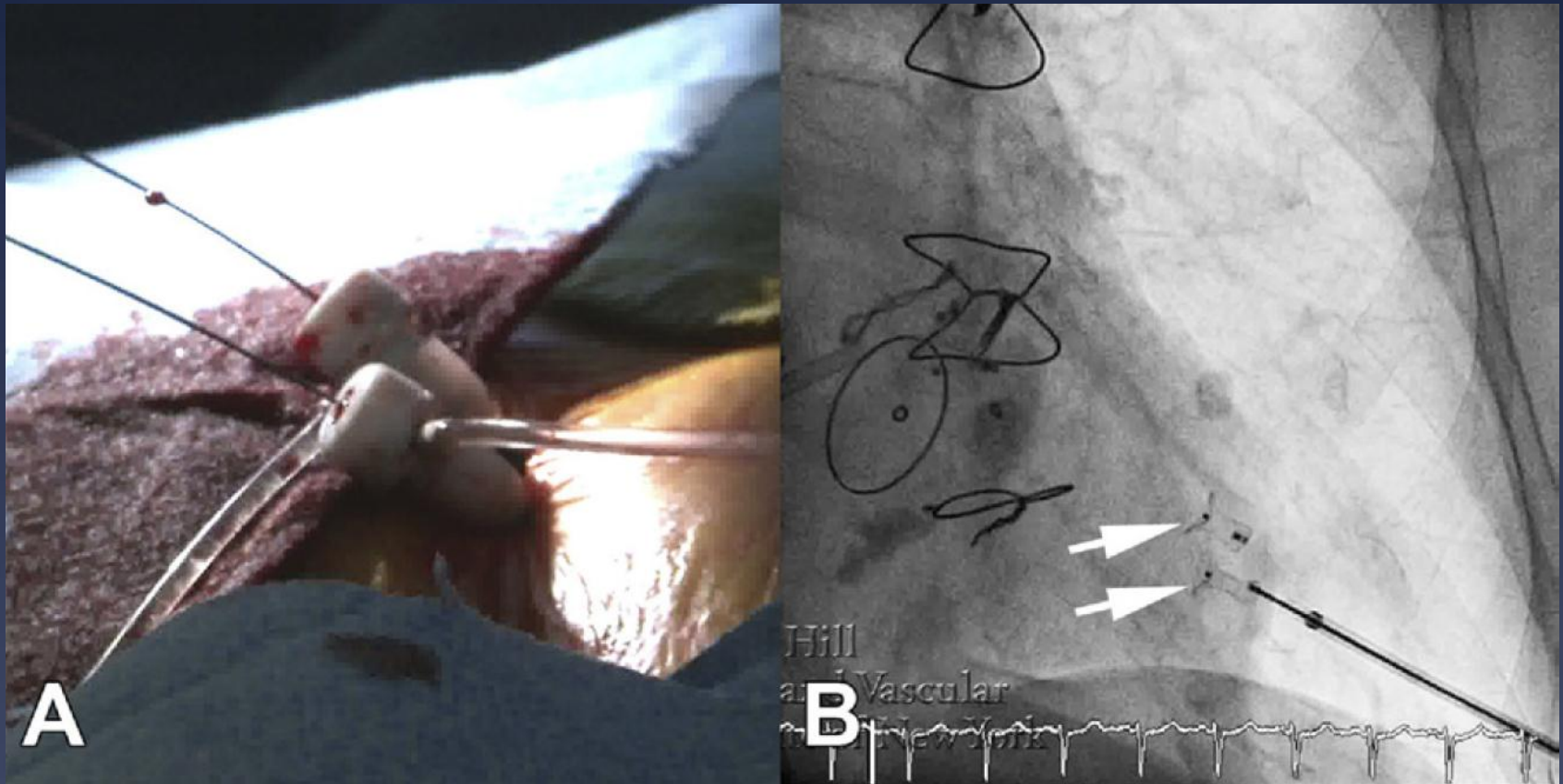
A Safe Access and Secure Exit

Vladimir Jelnin, MD, Yuriy Dudy, MD, Bryce N. Einhorn, Itzhak Kronzon, MD, Howard A. Cohen, MD, Carlos E. Ruiz, MD, PhD

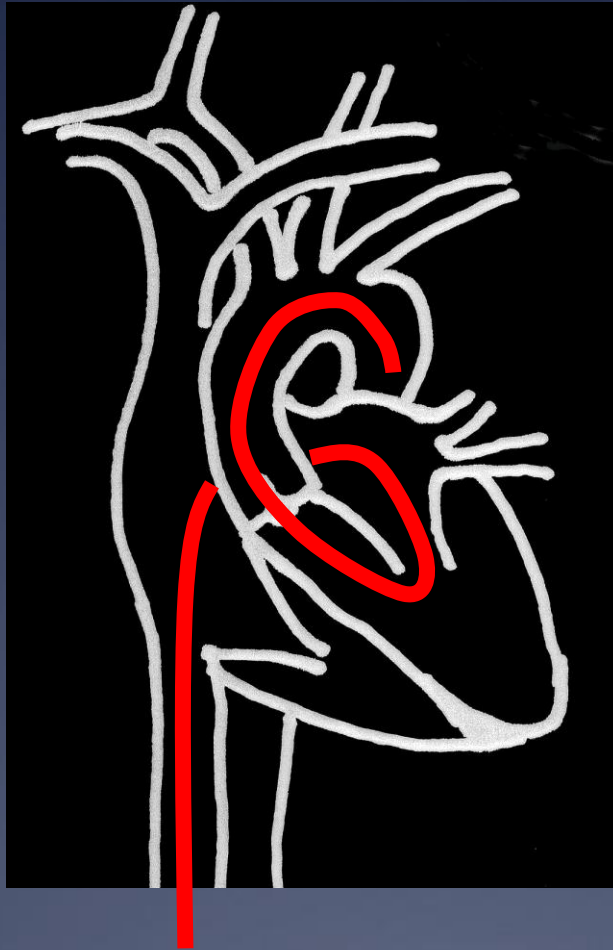
New York, New York

- * 32 patients, pred. paravalvular leak closure
- * 5-12F sheaths
- * Amplatzer-occludes

Perc. Transapical Closure

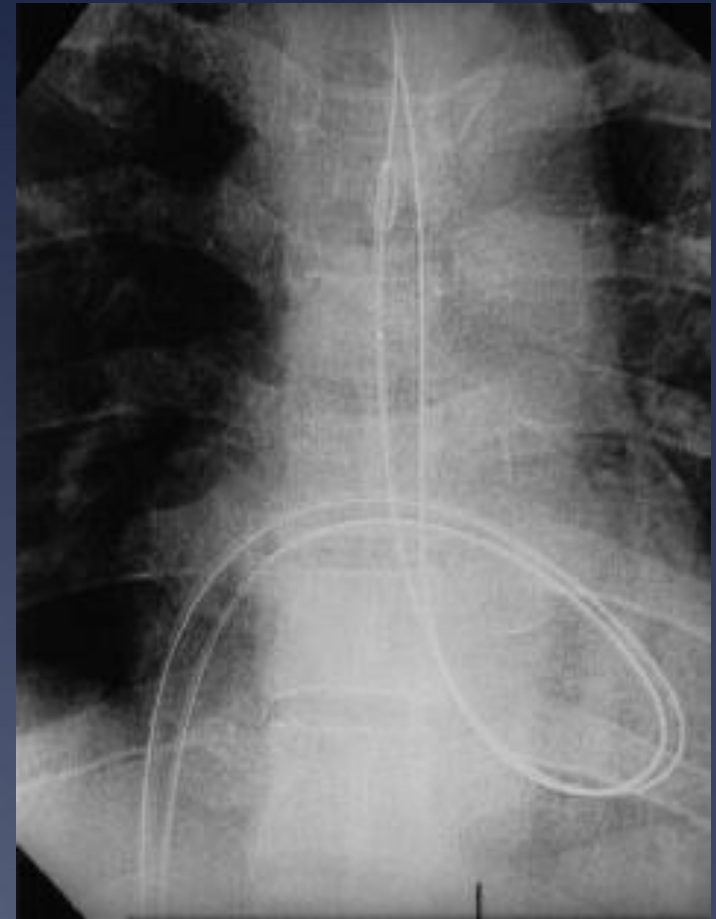


Transseptal Access



Transseptal Puncture - History

- * Joseph 1997:
Carotid artery stenting
- * Dorros 2000:
Stent-graft stabilization
- * Cribier 2002:
Aortic valve replacement

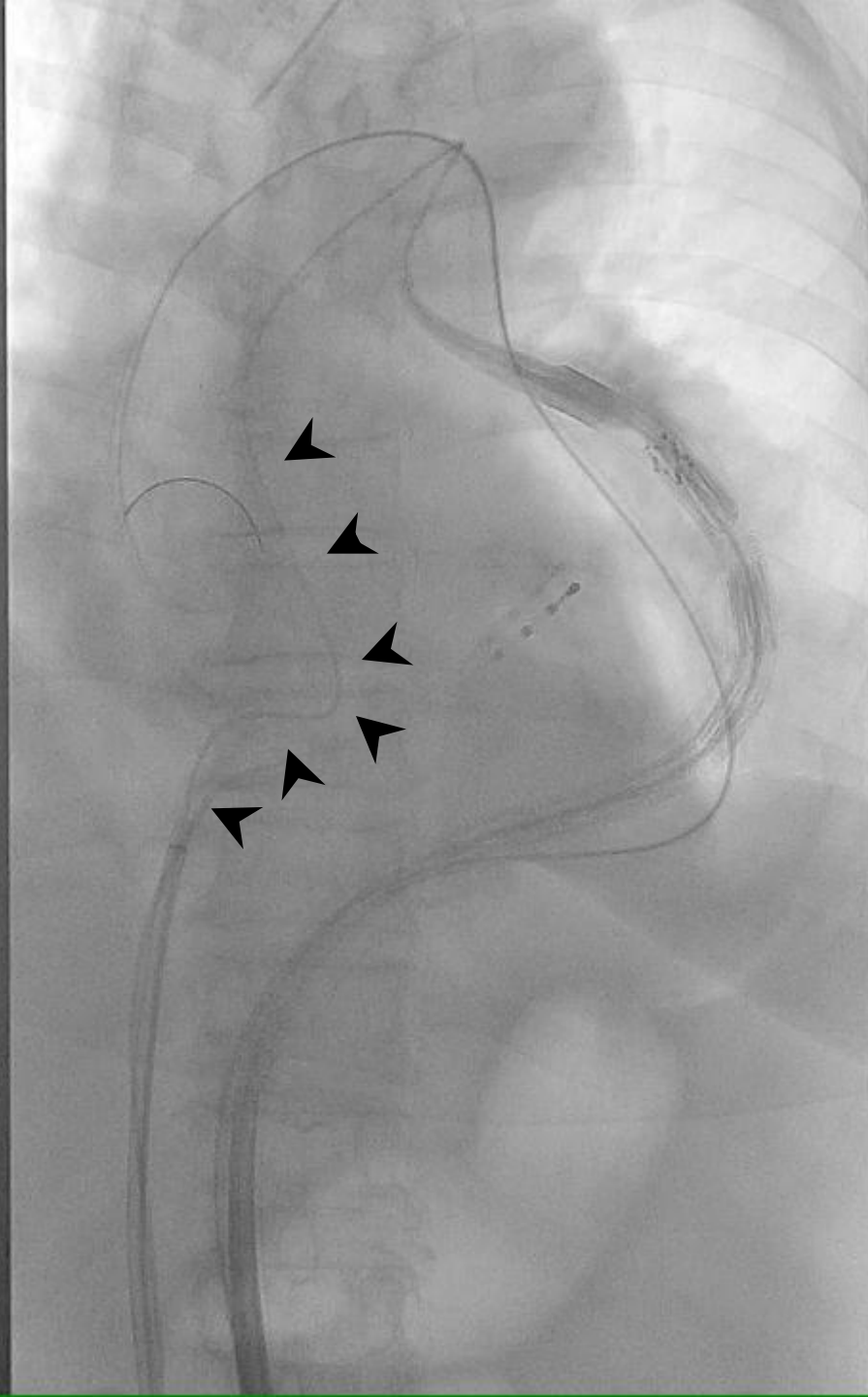


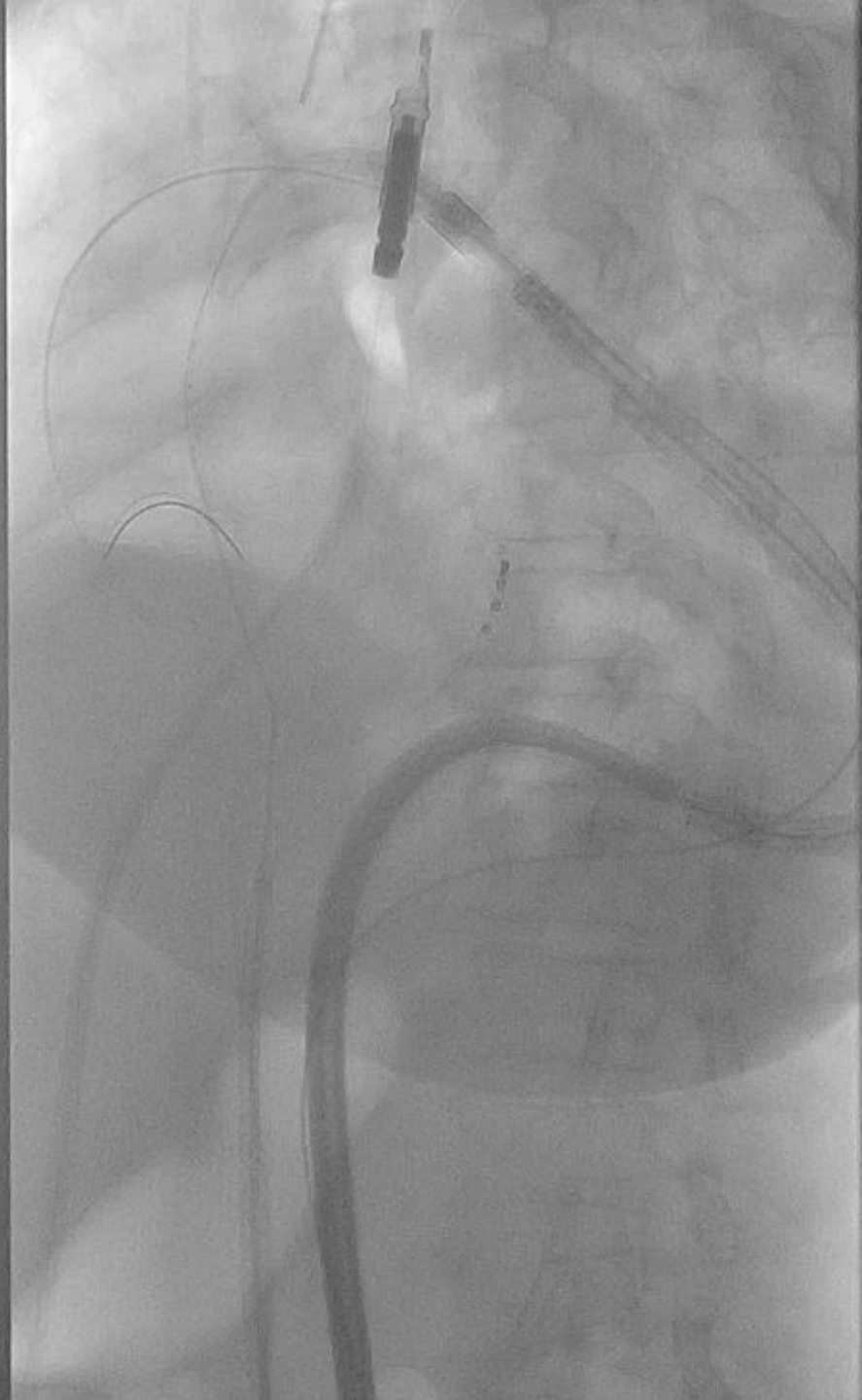
Joseph et al; Cathet Cardiovasc Diagn. 1997

Transseptal Throughwire Access

- 65 year-old female
- 6,5cm TAA
- Multiple Kinks
- Morbidly obese



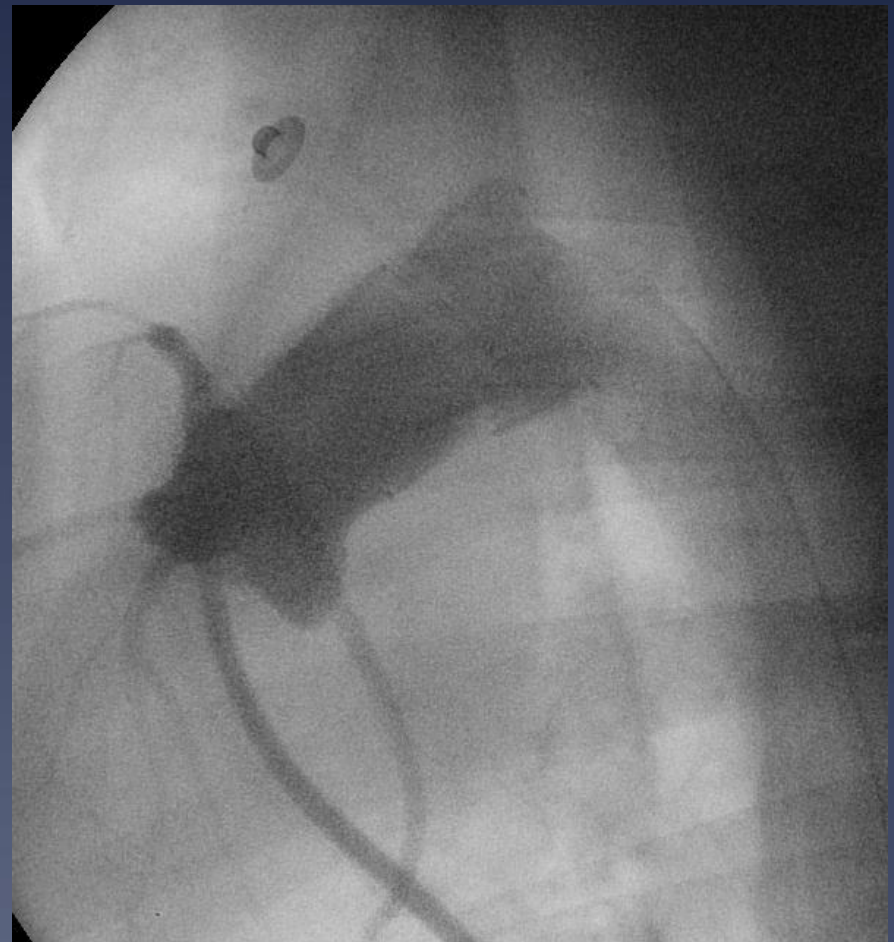




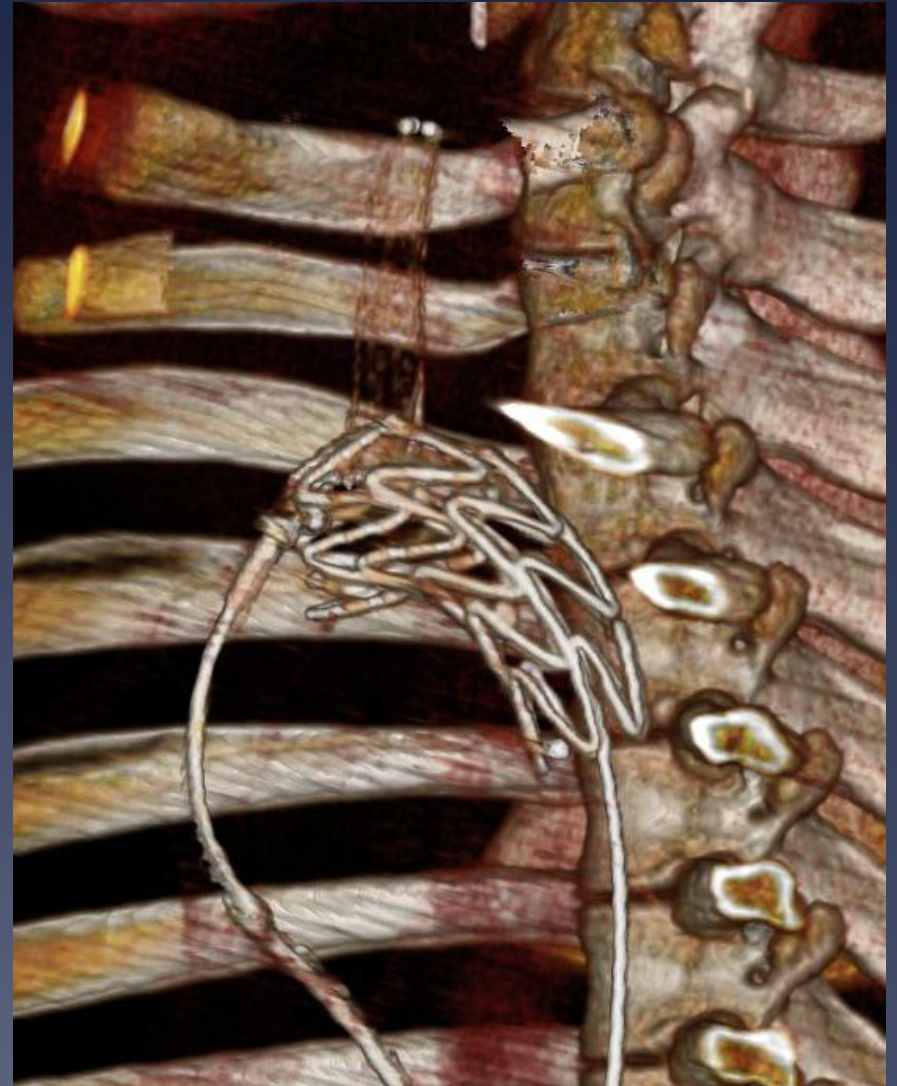
Transseptal Throughwire Access



Transseptal TEVAR



Transseptal Branchvessel-access



Critical Issues

- * Transapical access:
 - * Surgical exposure required
 - * Pericardium to be crossed
 - *
- * Transseptal access:
 - * Strain to anterior mitral leaflet
 - * Transient mitral reflux
 - *

Summary

Transcardiac access:

- * Standard access for Aortic valve implantation
- * Different access-routes through the heart
- * Short distance, straight route, profile nearly unrestricted
- * Relevance of transcardiac access yet to be defined