Chronic Type B Dissections

- consequences and options

P. M. Kasprzak, K.Oikonomou, K.Pfister, K. Katsargyris, E. Verhoeven
Vascular Surgery, Endovascular Surgery
University Hospitals Regensburg and Nuremberg, Germany

H

Disclosures Prof. Dr. Kasprzak (grants, speaker fee, development)

Medical Therapy Alone is not Ideal

Circulation
JOURNAL OF THE AMERICAN HEART ASSOCIATION

American Heart Association.

Long-Term Survival in Patients Presenting With Type B Acute Aortic Dissection: Insights From the International Registry of Acute Aortic Dissection

Thomas T. Tsai, Rossella Fattori, Santi Trimarchi, Eric Isselbacher, Truls Myrmel, Arturo Evangelista, Stuart Hutchison, Udo Sechtem, Jeanna V. Cooper, Dean E. Smith, Linda Pape, James Froehlich, Arun Raghupathy, James L. Januzzi, Kim A. Eagle and Christoph A. Nienaber

Circulation. 2006;114:2226-2231; originally published online November 13, 2006;

- 30d Mortality: 10%, 3 year mortality: 25%!

- 25% of survivors → Late complications
  - Dissection Extension
  - Chronic Pain
  - Aneurysm Formation (Rupture)

Follow-up after ATBAD

- Prior to discharge
  - CTA & Ultrasound of visceral/renal vessels (CEUS)
- 6 months
  - CTA & Ultrasound of visceral/renal vessels (CEUS)
- Ultrasound after 6m and yearly with CTA

Treatment Indications of Chronic Dissection

- Aneurysm
- Rupture

- (Malperfusion)
- (Refractory Pain)
- (Hypertension)

- TBAD - false lumen expansion requiring reintervention 30%

  Nienaber CA et al. Randomized comparison of strategies for type B aortic dissection: INSTEAD. Circulation 2009

- Complete false lumen thrombosis in 40%

  Kusagawa H. et al. Changes in false lumen after transluminal sten-graft placement in aortic dissections: six years experience. Circulation 2005

- False lumen (dissection) stable 30%

- Post-TEVAR aneurysm in 35%

  Scali ST et al. Efficacy of TEVAR for cTBAD with aneurysmal degeneration JVS 2013

TEVAR ?

A Systematic Review of Mid-term Outcomes of Thoracic Endovascular Repair (TEVAR) of Chronic Type B Aortic Dissection CME

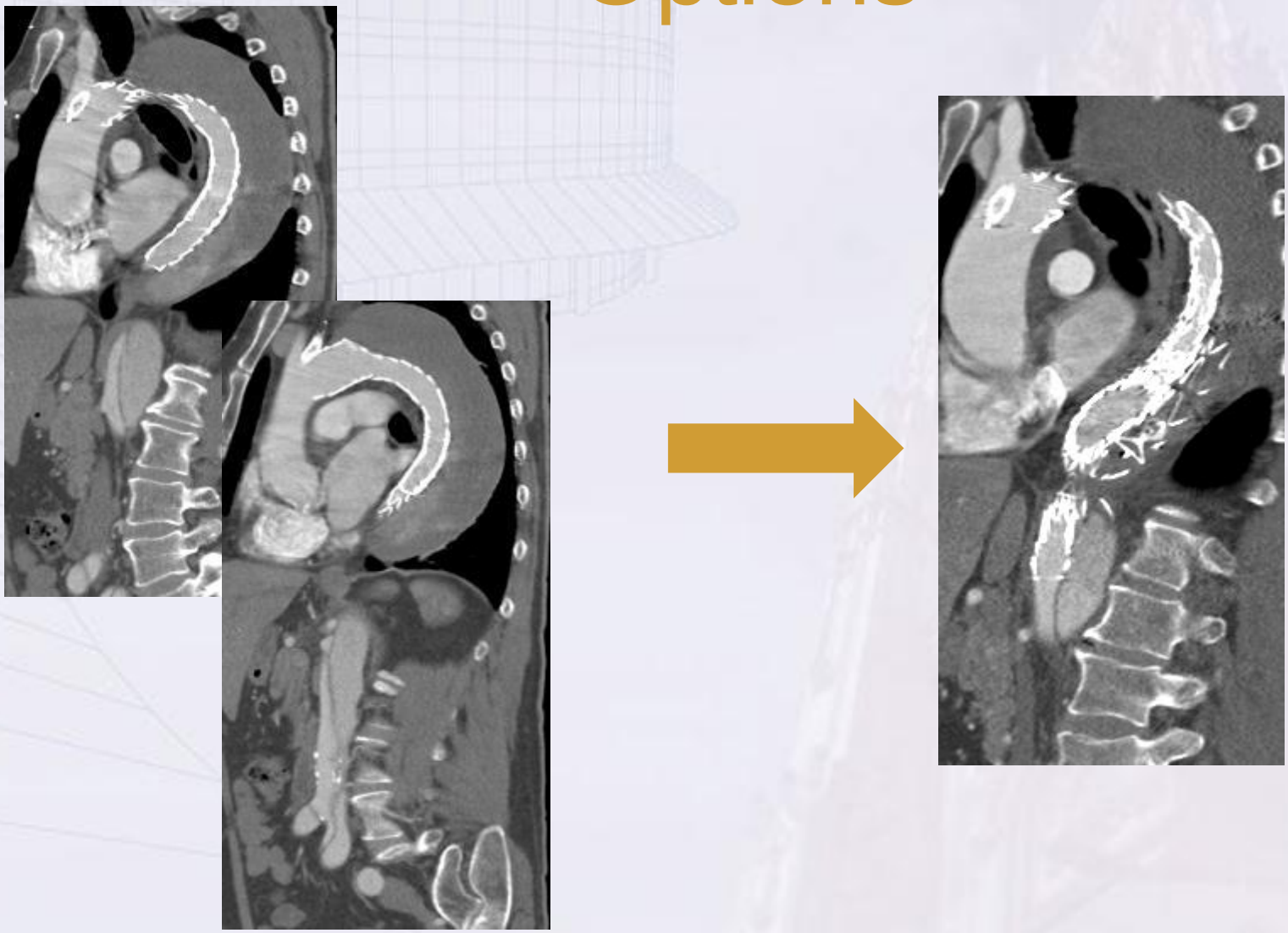
S.G. Thrumurthy, A. Karthikesalingam, B.O. Patterson, P.J.E. Holt*, R.J. Hinchliffe, I.M. Loftus, M.M. Thompson

Eur J Vasc Endovasc Surg (2011)

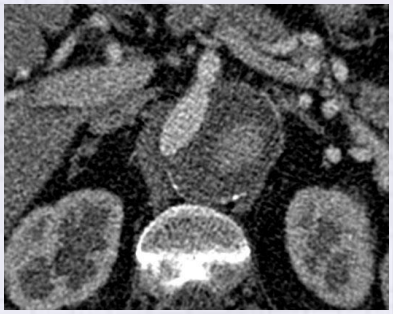
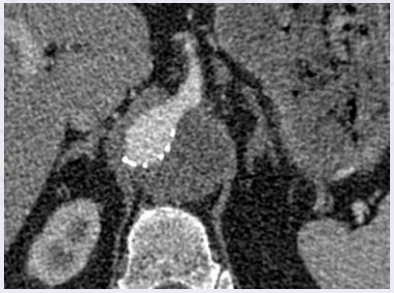
- 527 Pt (17 Studies)
- Technical Success 59.1-100%

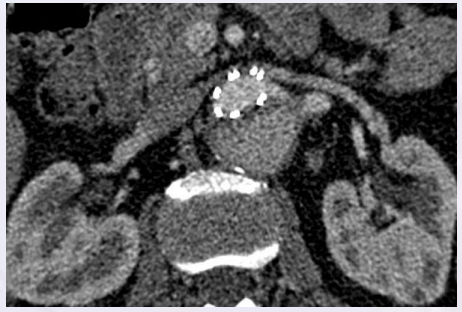
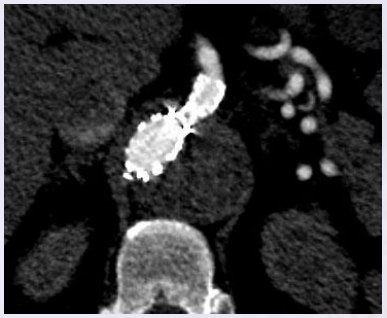
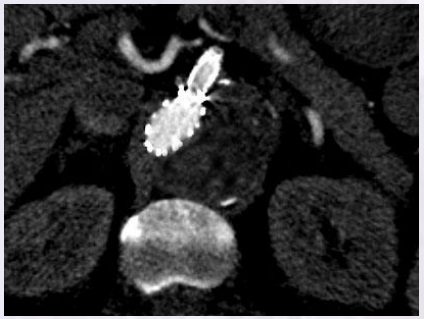
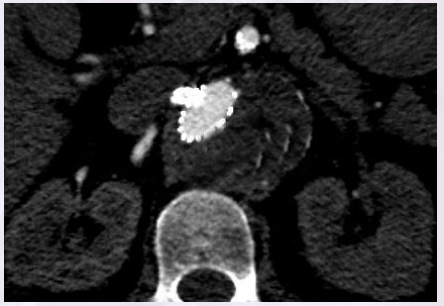
- 8% Ongoing Aneurysmal Dilatation

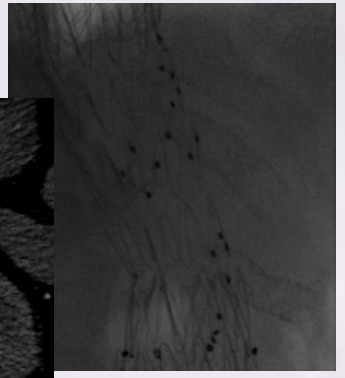
Endovascular Treatment Options

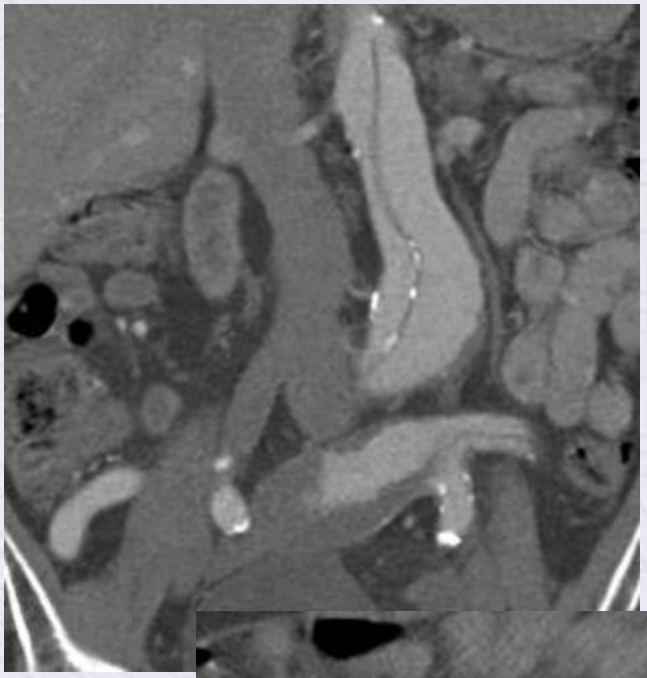


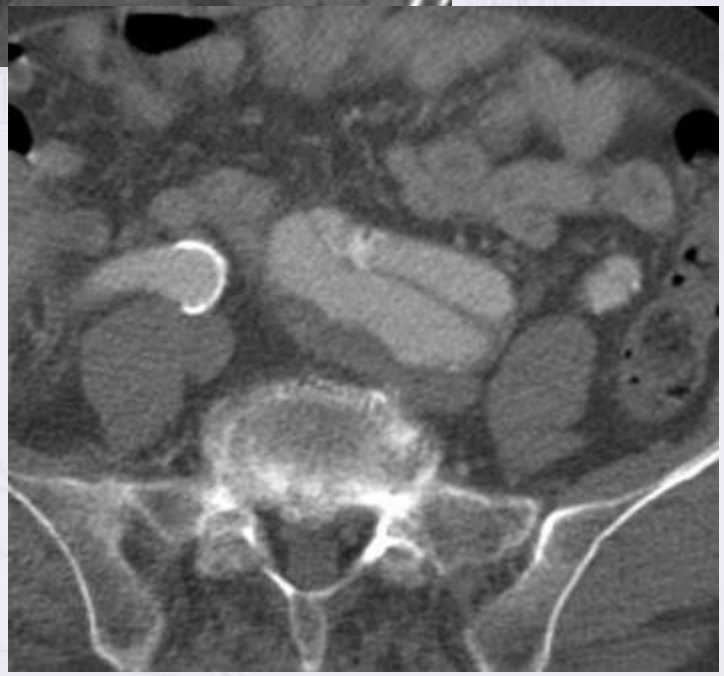
Dissection Type B with Aneurysm reno-mesenterial after TEVAR und EVAR

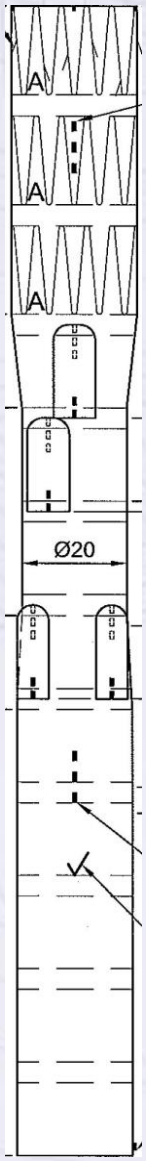



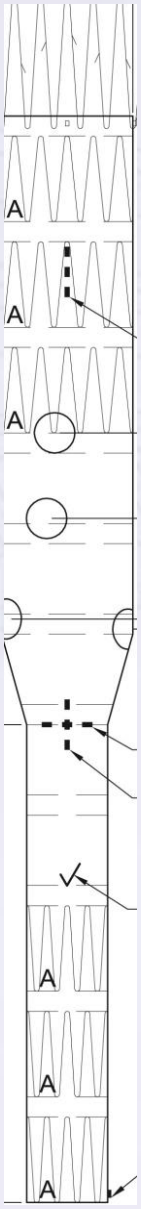


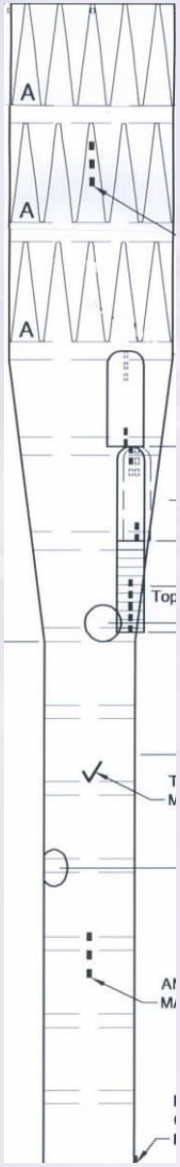


Technical Challenges

- Thoracoabdominal Extend
- Distal Landing Zone
- Stiff Dissection Flap
- Small true Lumen
- Target Vessels from FL/TL


A
A
A
Ø20


A
A
A
A
A
A
A


A
A
A

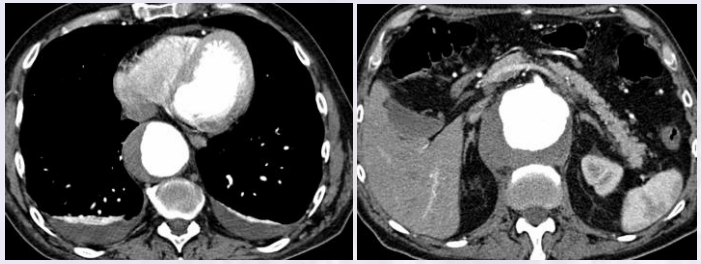
- DSA

- IVUS

- ECHO

Post-Dissection aneurysm
FEVAR / BEVAR

Arteriosclerotis
Aneurysm-BEVAR

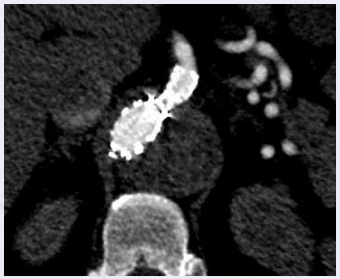


staged procedures

TEVAR first

fenestrated stentgraft
not completed distally

Completion



TEVAR + BEVAR
with TASP

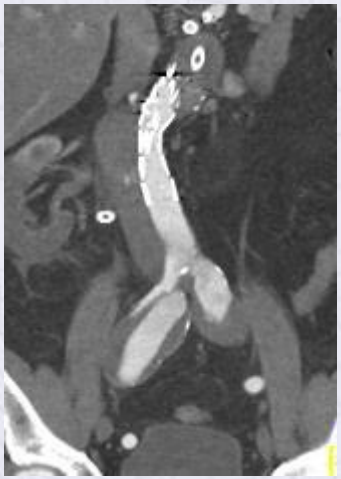
TASP completion after
balloon branch occlusion

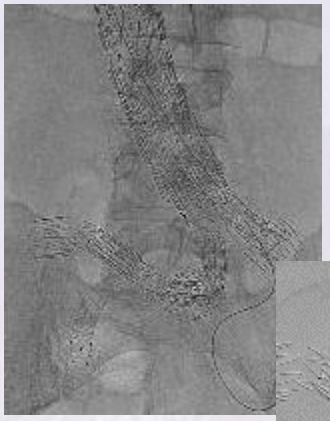
1. surgery

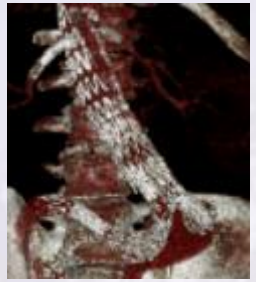
2. surgery

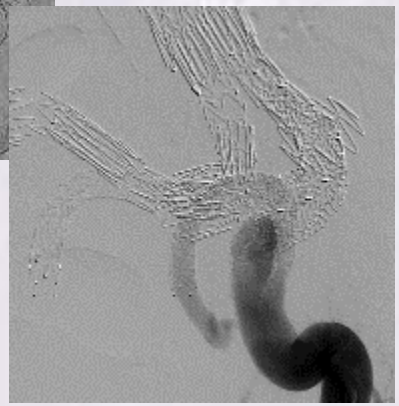
3. surgery?

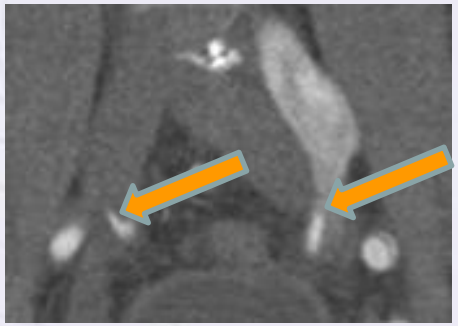
Endovascular Treatment Options - Iliacs

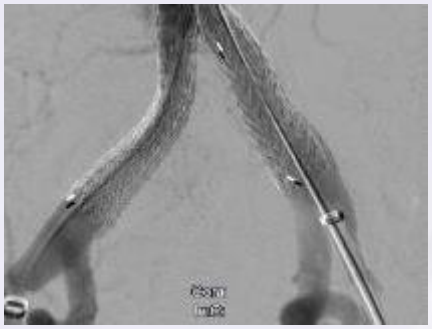


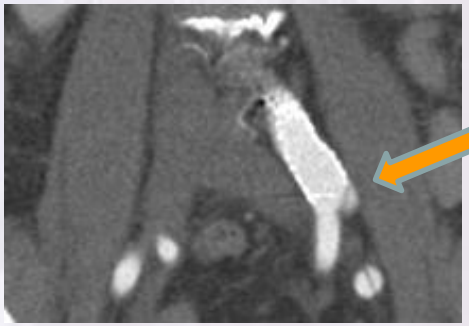






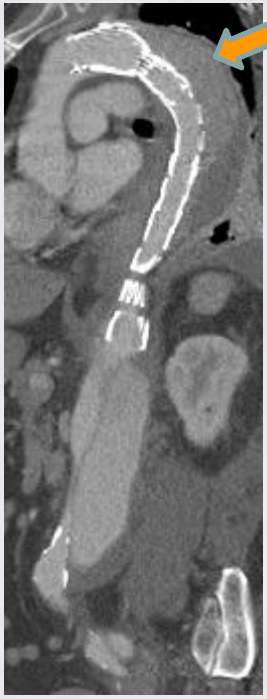


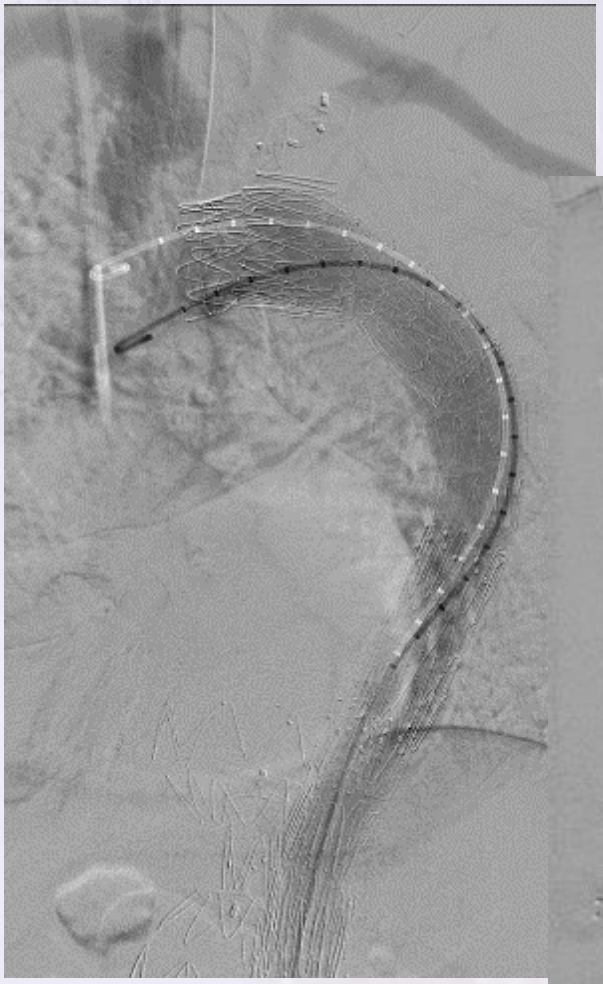


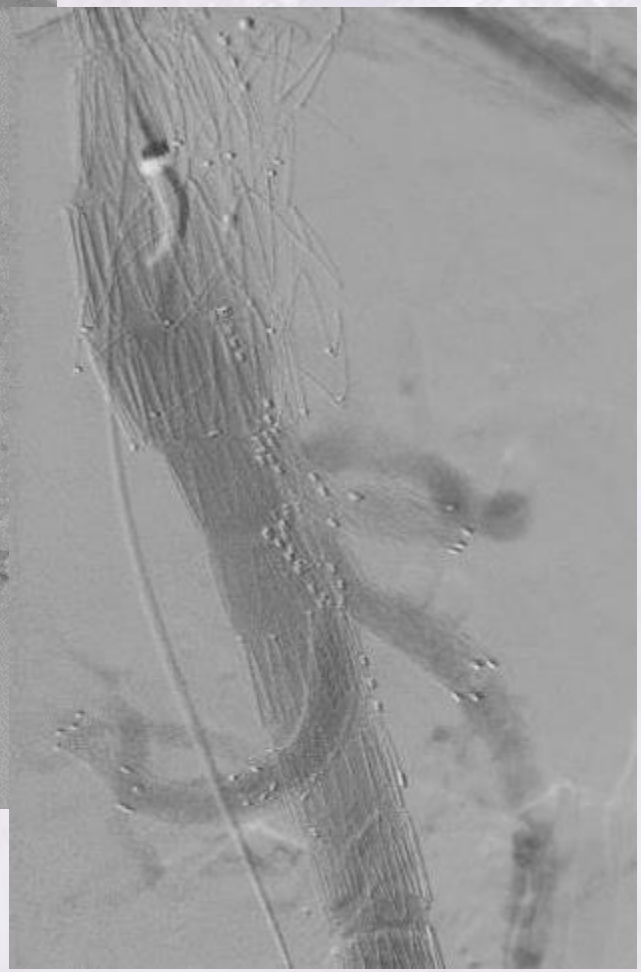










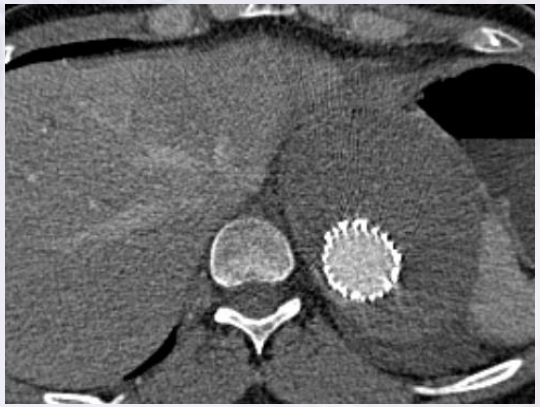


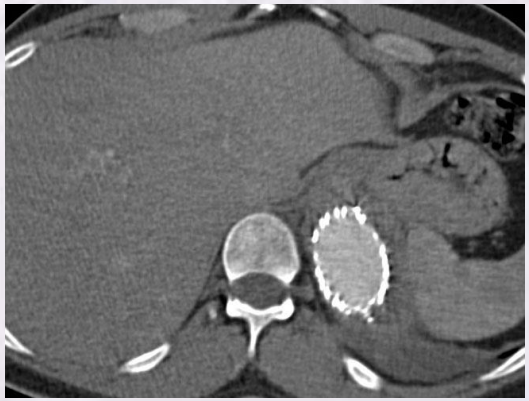
Chronic Postdiss. Aneurysm

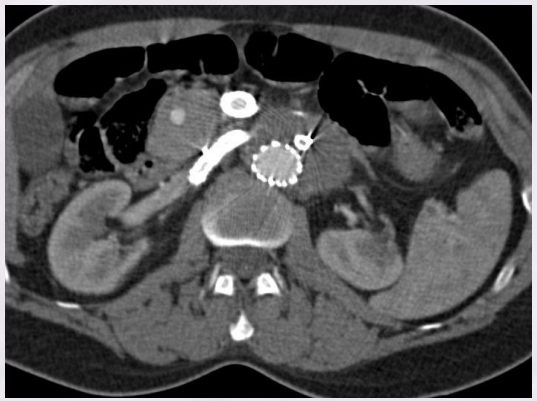
Preoperative

Postoperative

After 18 mth's







Experience Regensburg/Nuremberg (N=71) (01/2008-04/2017)

- 53/71 after previous surgery:
  - Open surgery for type A (N=15)
  - Open Surgery/TEVAR for type B (N=38)

Perioperative Results

- Technical Success: N=68/71 (95.8%)

  1 Conversion; 2 catheterization failures(LRA/SMA)

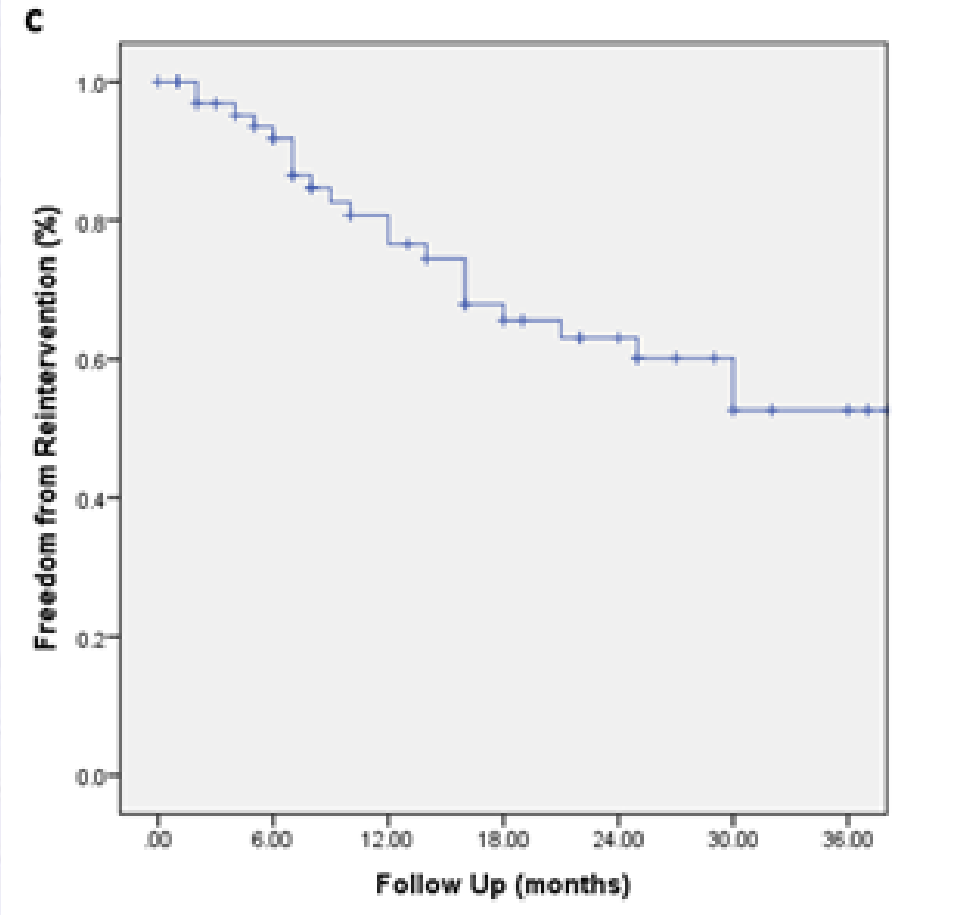
- 30-day Mortality: N=4 (5.6%)

- SCI

  Paraplegia N=2 (2.8%)

  Temporary Paraparesis Uni-/Bilateral N=9 (12.7%)

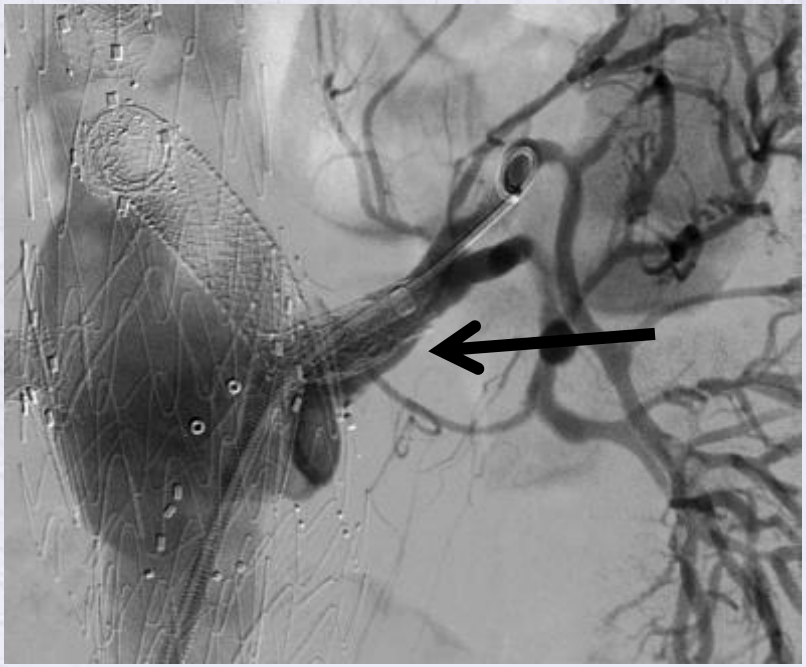
Freedom from Reintervention



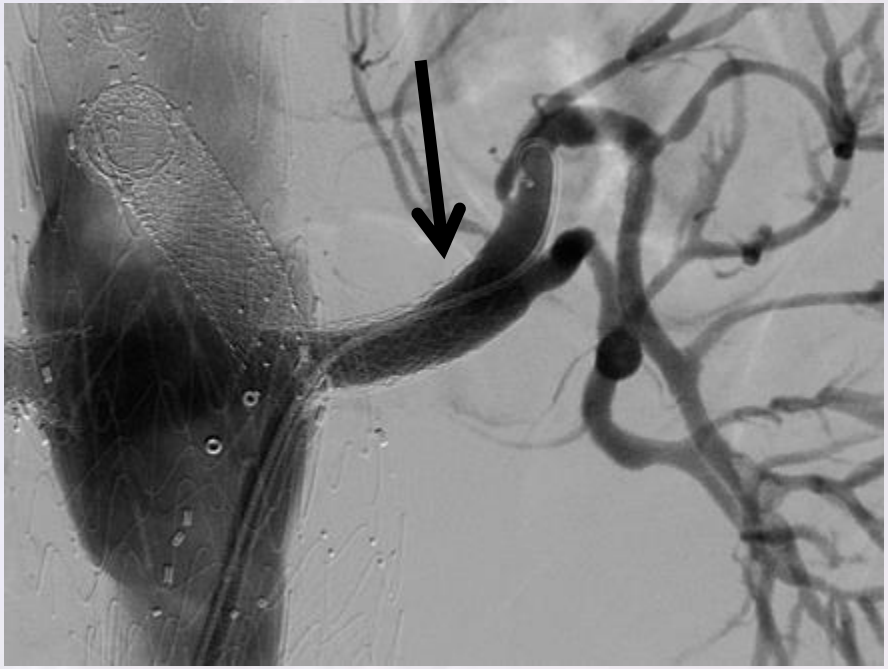
80.7 ± 5.3% 1 Year

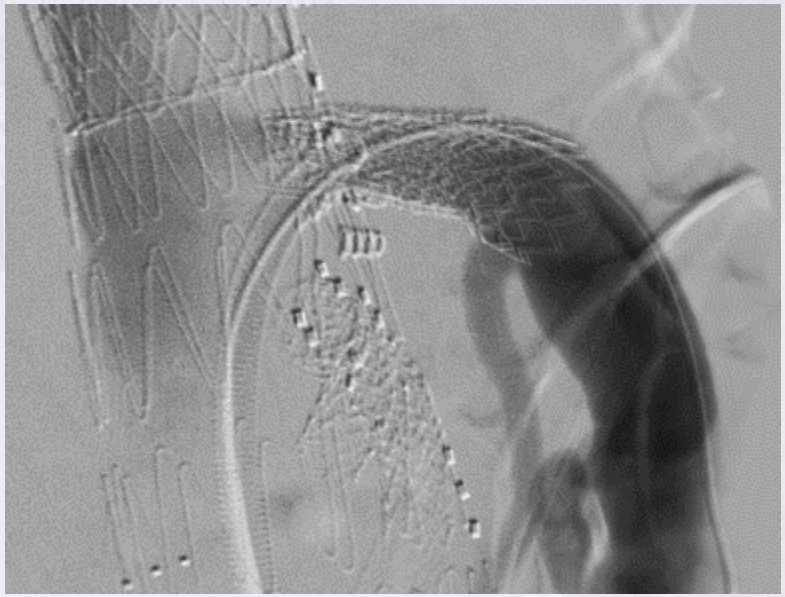
52.6 ± 8.0% 3 Years

Type Ib EL (LRA)



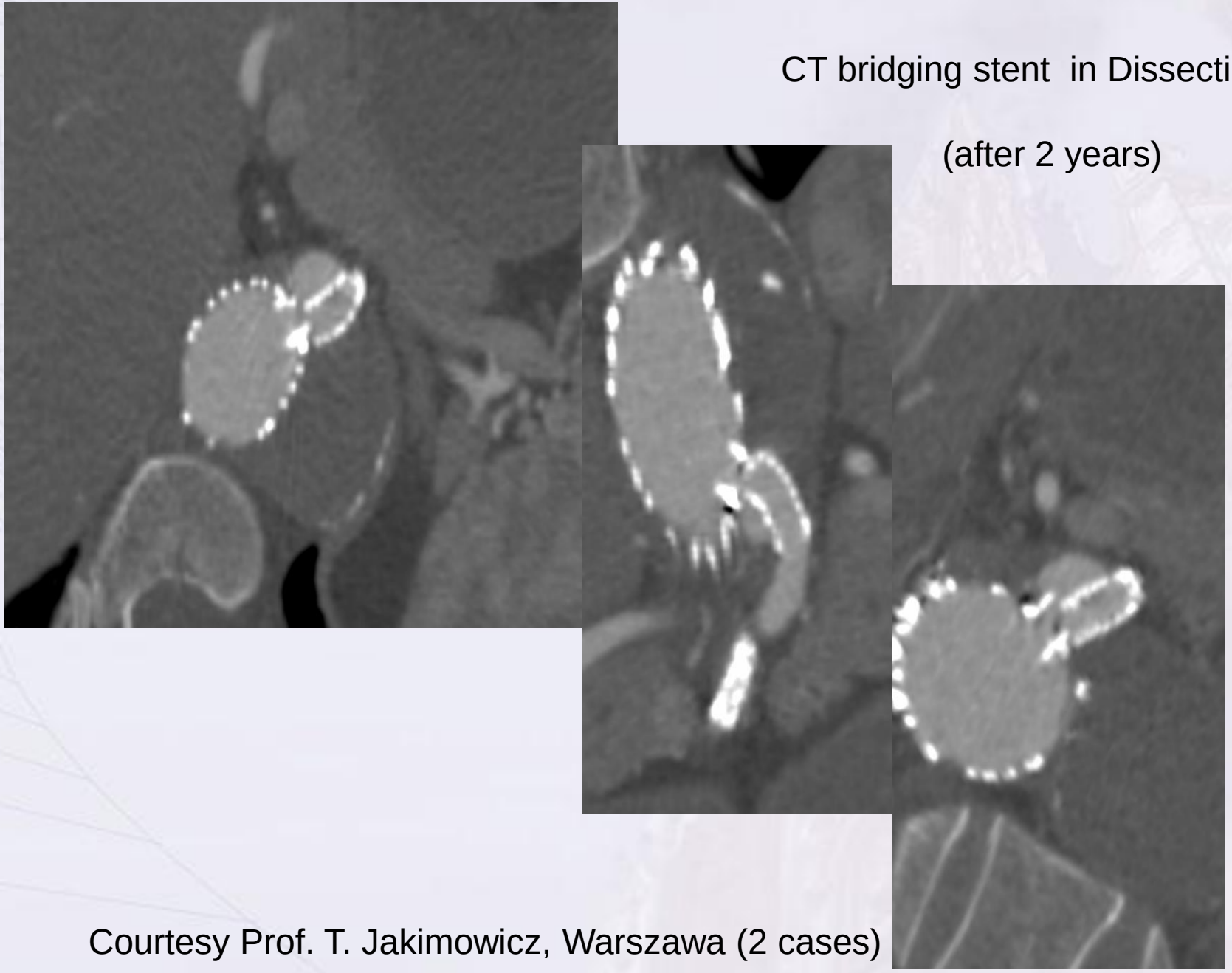
LRA Stent-graft Extension





CT bridging stent in Dissection

(after 2 years)

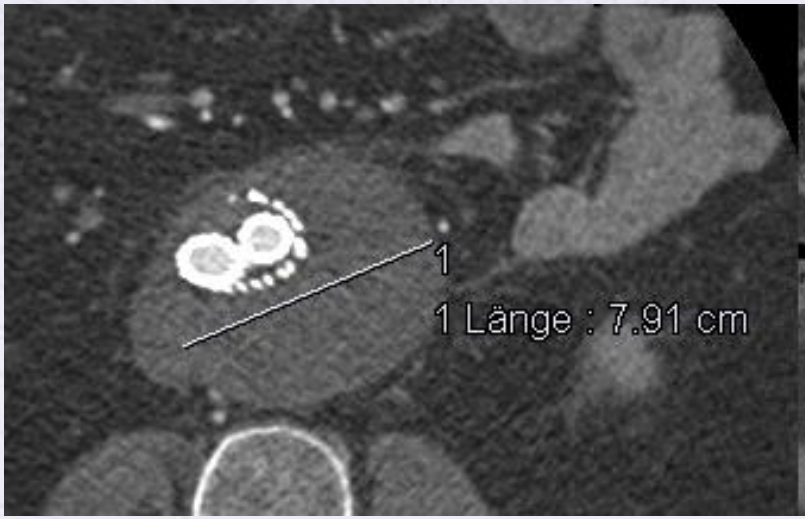


Courtesy Prof. T. Jakimowicz, Warszawa (2 cases)

False Lumen Thrombosis

41/48 (85.4%) Patients that completed 1 year FU

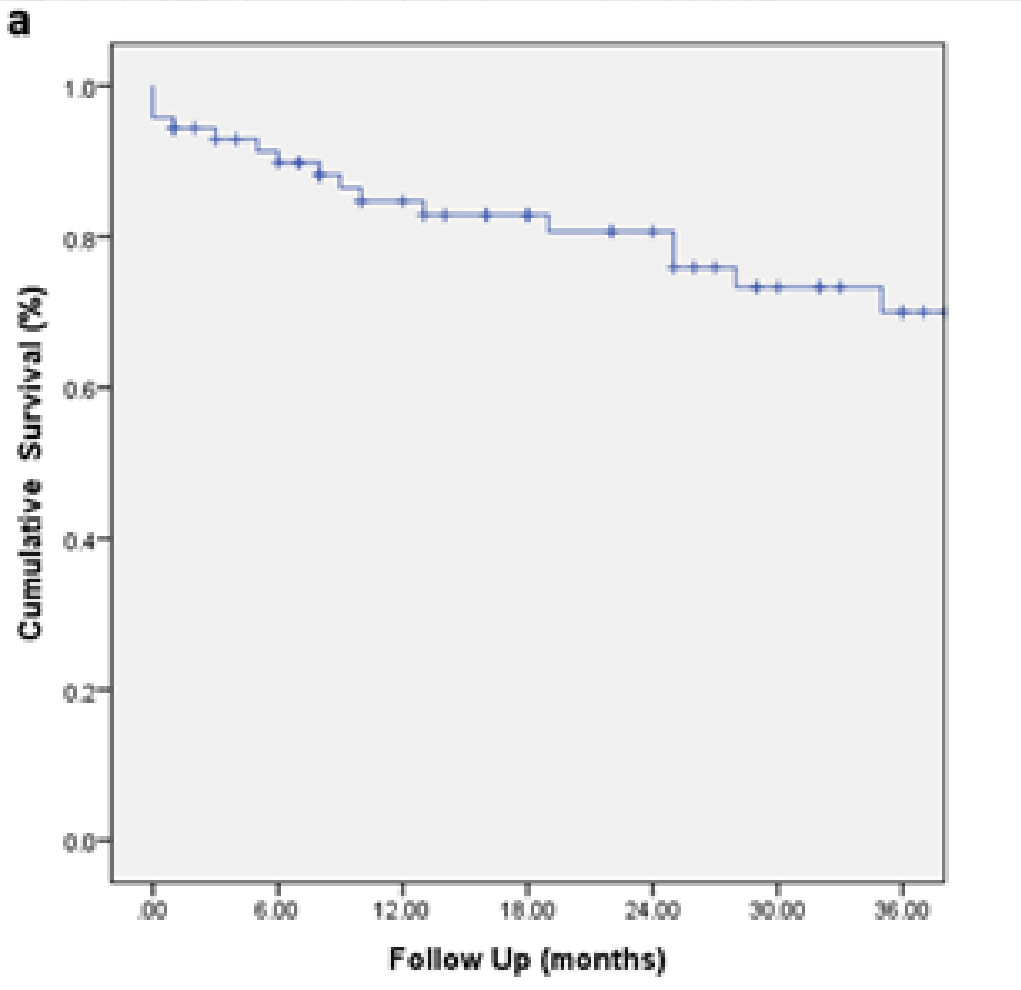
Post-op



CT 2 years

Mean Aneurysm Sac Regression 9.2 ± 8.8mm

Cumulative Survival



84.7 ± 4.5% 1 Year

70.0 ± 6.7% 3 Years

Ann Cardiothorac Surg. 2012 Sep;1(3):286-92. doi: 10.3978/j.issn.2225-319X.2012.08.16.

Results of open thoracoabdominal aortic aneurysm repair.

LeMaire SA[1], Price MD, Green SY, Zarda S, Coselli JS.

- 350 Pt
- Early adverse outcome 15.9% (Exitus, NI, Stroke, Paraplegie)

Conclusions

- False Lumen Thrombosis in TAA after ATBD is essential for aneurysm shrinkage and crucial for long term success
- Rigorous FU is required: Aneurysm and Aneurysm related Mortality is increasing after 3-4 years
- Open surgery indicated in Connective Tissue Disease
- F/B grafts are a realistic option to treat post-dissection TAAA and is associated with a high Rate of False Lumen Thrombosis