

Chronic type B dissection. What is wrong with TEVAR?

Dissection chronique de type B : les limites des endoprothèses



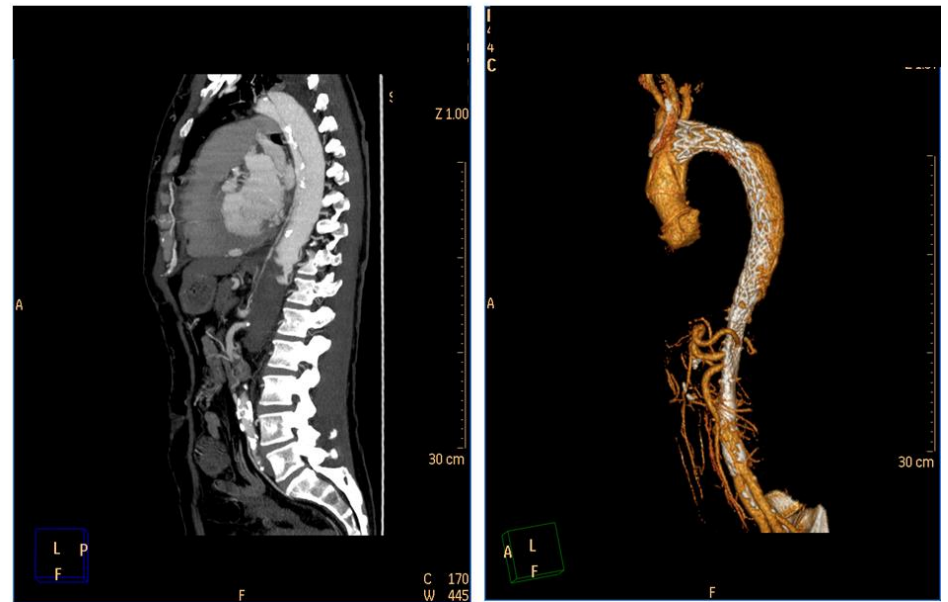
Richard Gibbs

Imperial Vascular Unit, St Mary's Hospital
London

Type B Aortic Dissection: Definitions

RCT Definitions (INSTEAD/ADSORB)

- Acute : <14 days
- Chronic: >14 days



Type B Aortic Dissection: Definitions

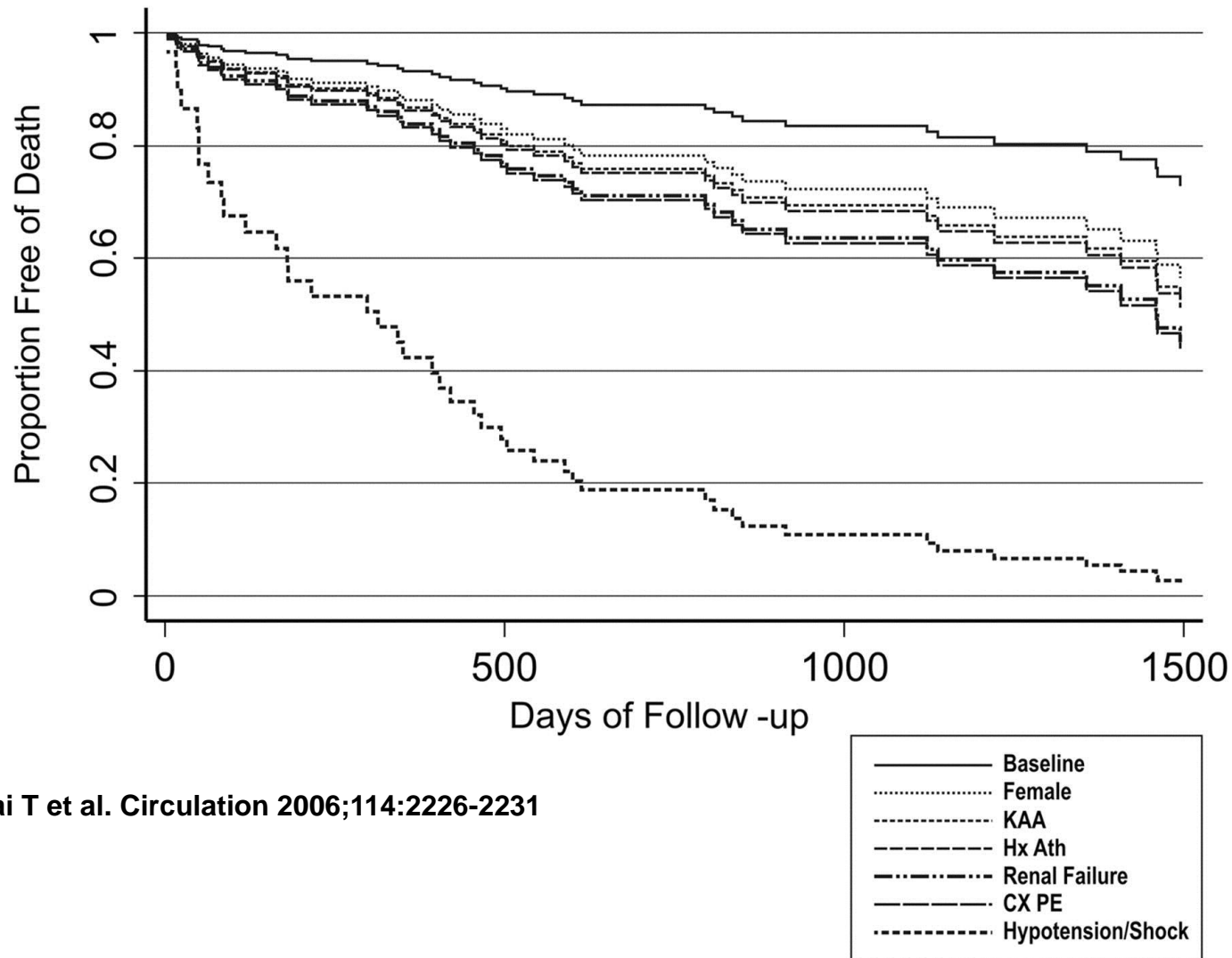
Interdisciplinary Expert Consensus Document on Management of Type B Aortic Dissection 2013

American College of Cardiology

- Acute : <14 days
- Subacute : 14 days- 6 weeks
- Chronic: > 6 weeks

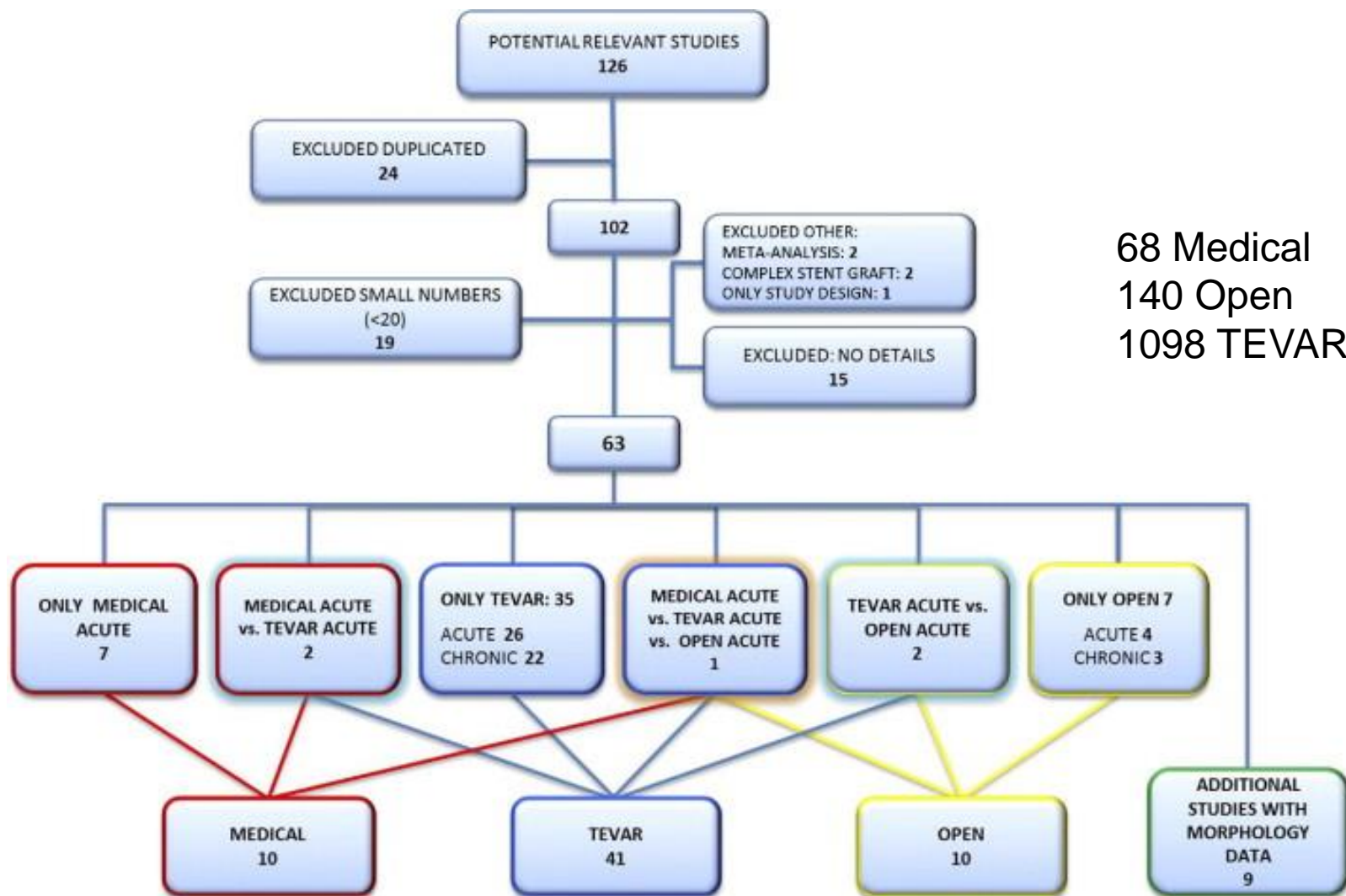


Estimated Survival by Predictors



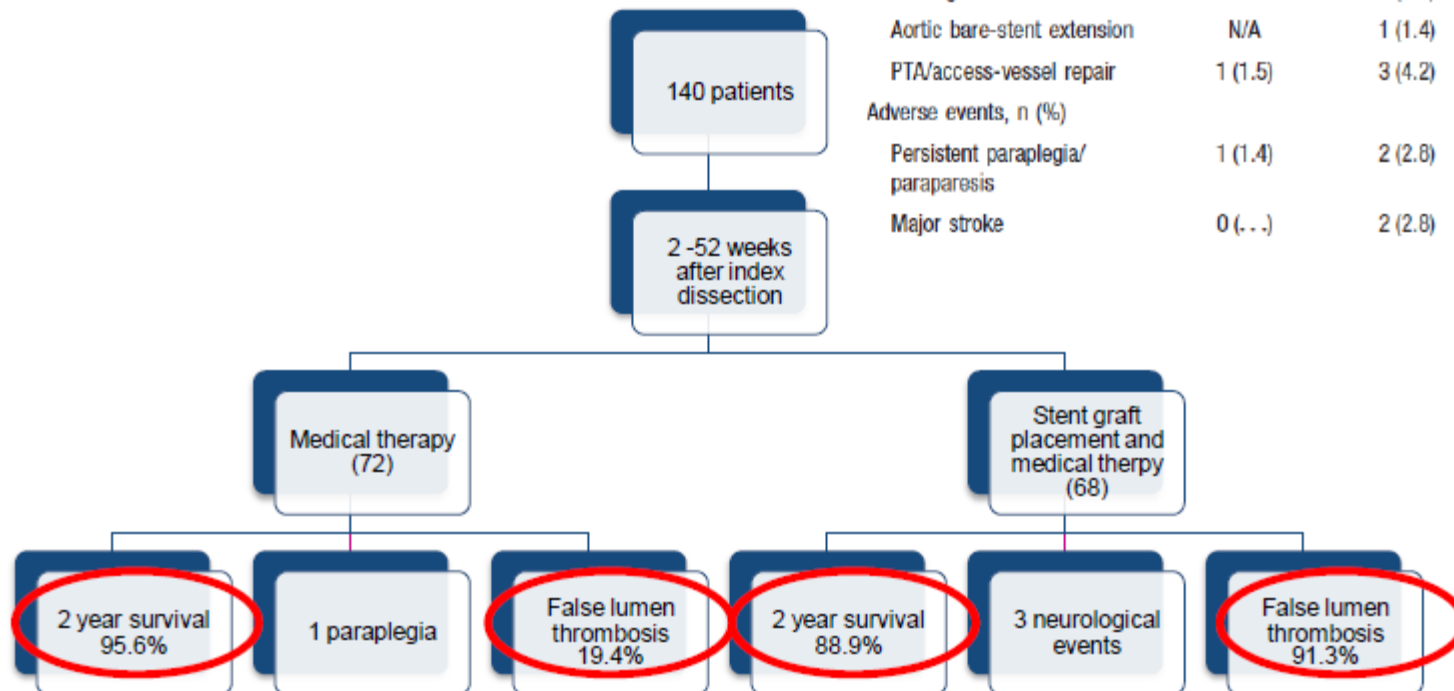
Tsai T et al. Circulation 2006;114:2226-2231

Interdisciplinary Expert Consensus Document on Management of Type B Aortic Dissection 2013



Uncomplicated Chronic TBD INSTEAD

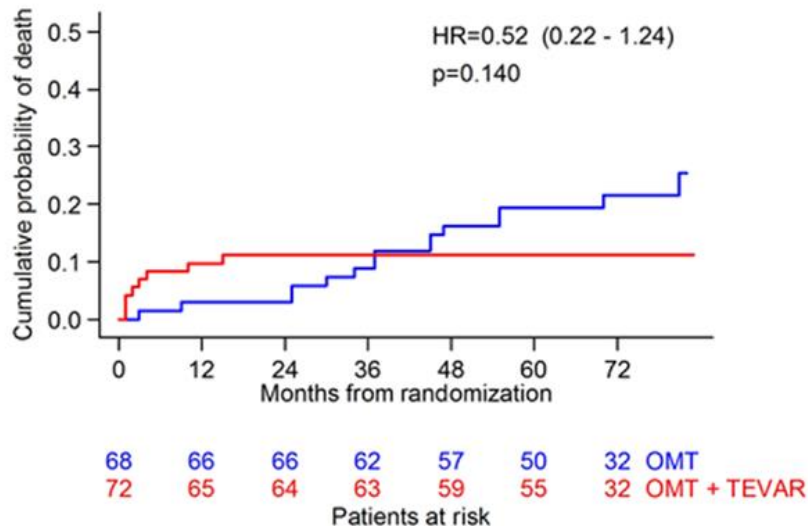
	OMT	OMT+TEVAR	P
Overall deaths, n (%)	3 (4.4)	8 (11.1)	0.20
Aorta-related deaths, n (%)	2 (2.9)	4 (5.6)	0.68
Secondary interventions, n (%)	15 (22.1)	13 (18.1)	0.74
Crossover	11 (16.2)	N/A	N/A
Conversion to surgery	3 (4.4)	3 (4.2)	1.00
Stent-graft extension	N/A	6 (8.3)	N/A
Aortic bare-stent extension	N/A	1 (1.4)	N/A
PTA/access-vessel repair	1 (1.5)	3 (4.2)	0.62
Adverse events, n (%)			
Persistent paraplegia/ paraparesis	1 (1.4)	2 (2.8)	0.90
Major stroke	0 (-)	2 (2.8)	0.53



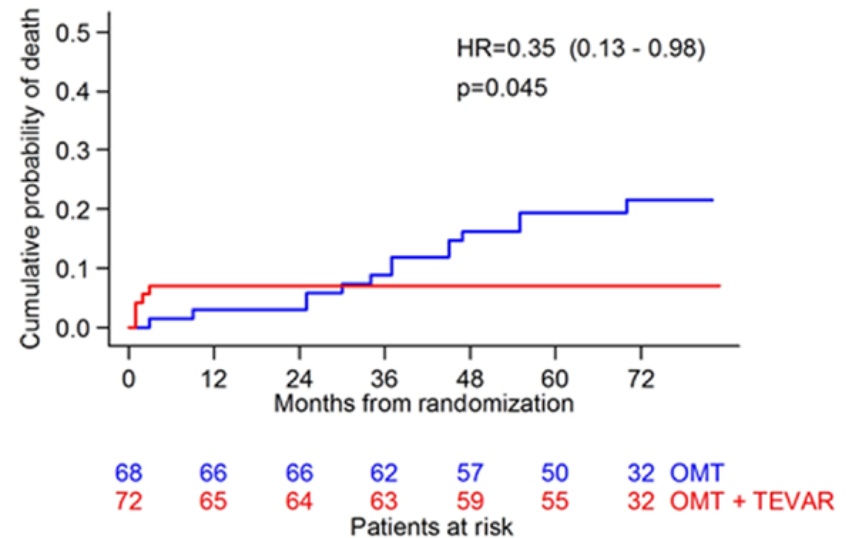
Nienaber et al *Circulation* 2009; 120: 2519-2

INSTEAD 5 Years

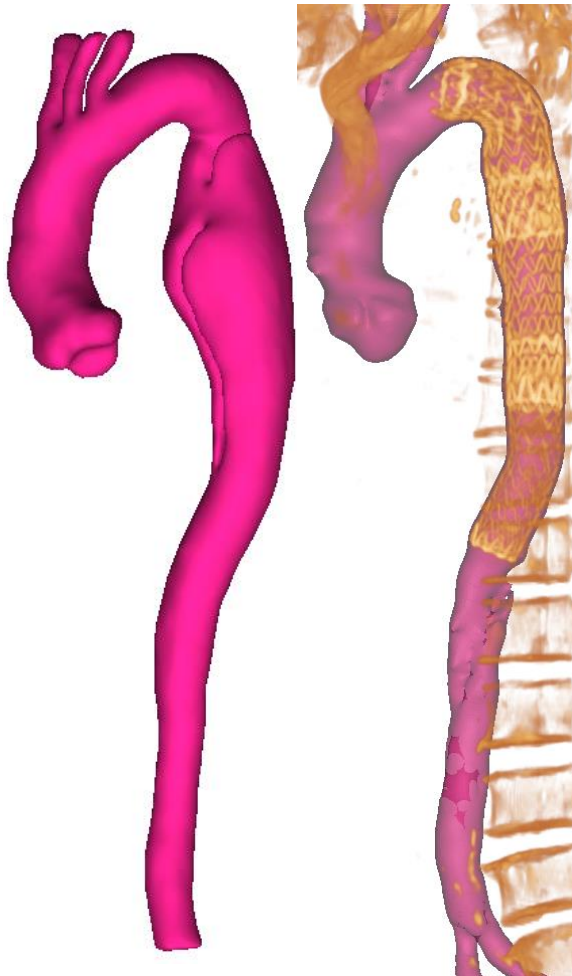
All Cause Mortality



Aortic Specific Mortality



Chronic Type B Complications



Aortic expansion $>55\text{mm}$ per year

Aortic growth rate $>4\text{mm}$ per year

Recurrence of symptoms

New acute dissection

Who gets complications?

Patent false lumen

Entry tear $>10\text{ mm}$ irrespective of where

Initial FL $>22\text{mm}$

Total aortic diameter $>40\text{mm}$

Outcomes of Endovascular Treatment for Chronic Type B dissection

- Perioperative mortality : 0-7.5%
Subacute - 2.8%
Chronic- 6.6%
- Perioperative mortality OR : 14-30%
- Mid-term mortality 8.0%

Endovascular Complications

- Endograft Infection and aorto-bronchial/oesophageal fistula (0.2%)
- Endoleaks (8-11%) and Reinterventions (up to 60%)
- Stroke (1.5 - 3%)
- SCI (0.45 -2.5%)
- Retrograde dissection
- Deployment in false lumen
- Endograft compromise/collapse
- Distal Tear/false lumen patency and continued dilatation

Endovascular Complications: Retrograde Dissection

- 1% IRAD (12/1129)
- 30% Marfans
- Oversizing
- Balloon Dilatation
- Open Surgical Adjuncts (2/35 SMH)
- Proximal Bare Stents
- Lack of conformability/cardiac cycle

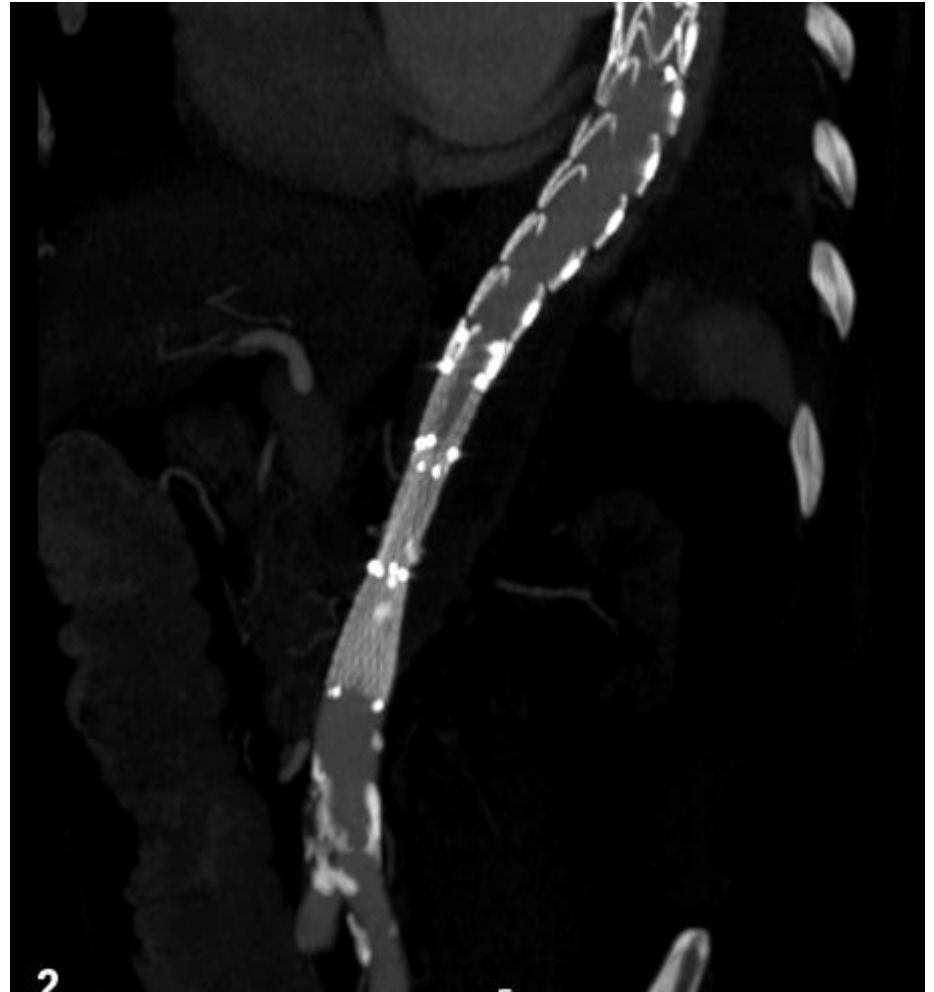
Endovascular Complications: Dissection Lamellae

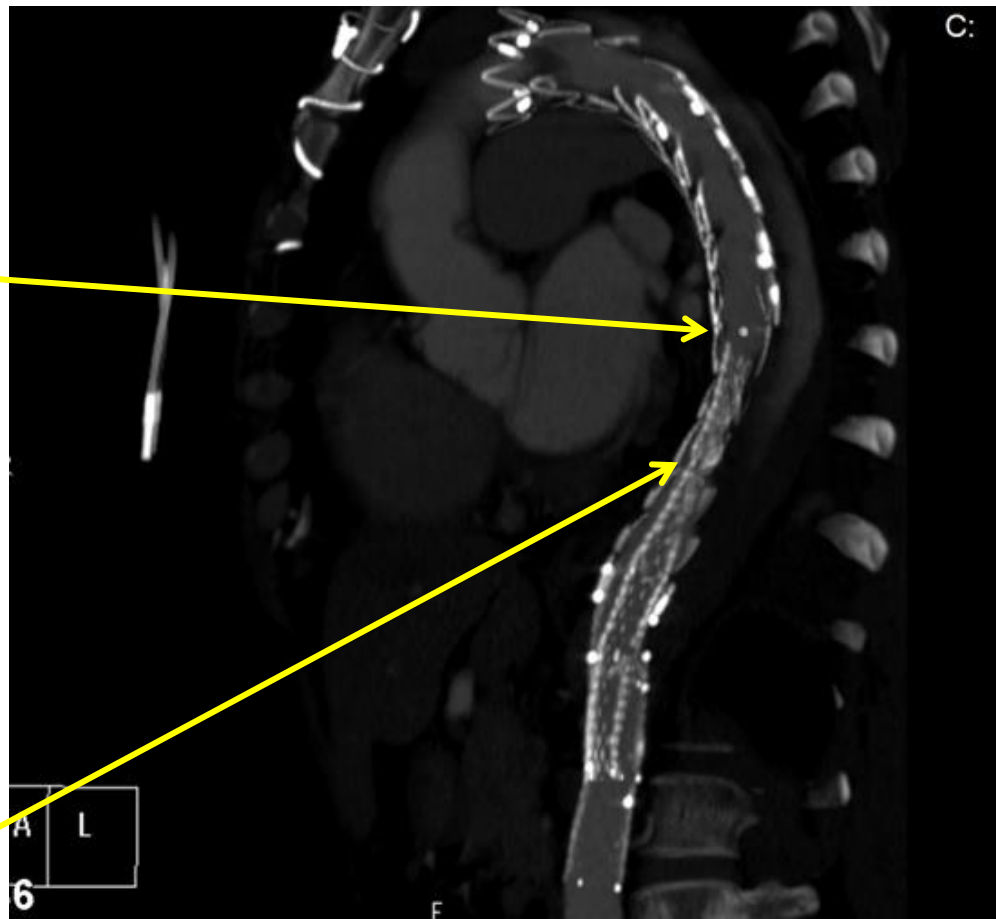
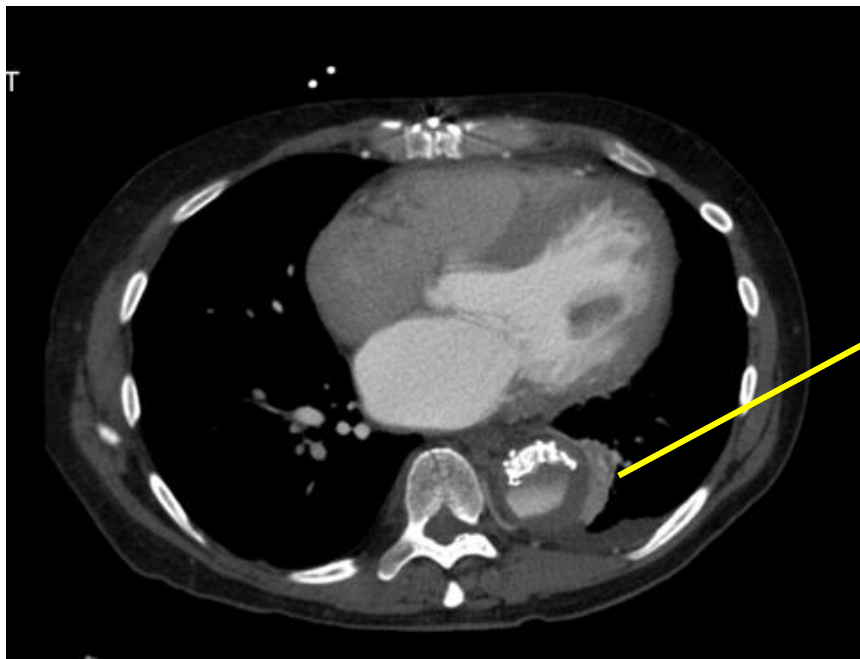
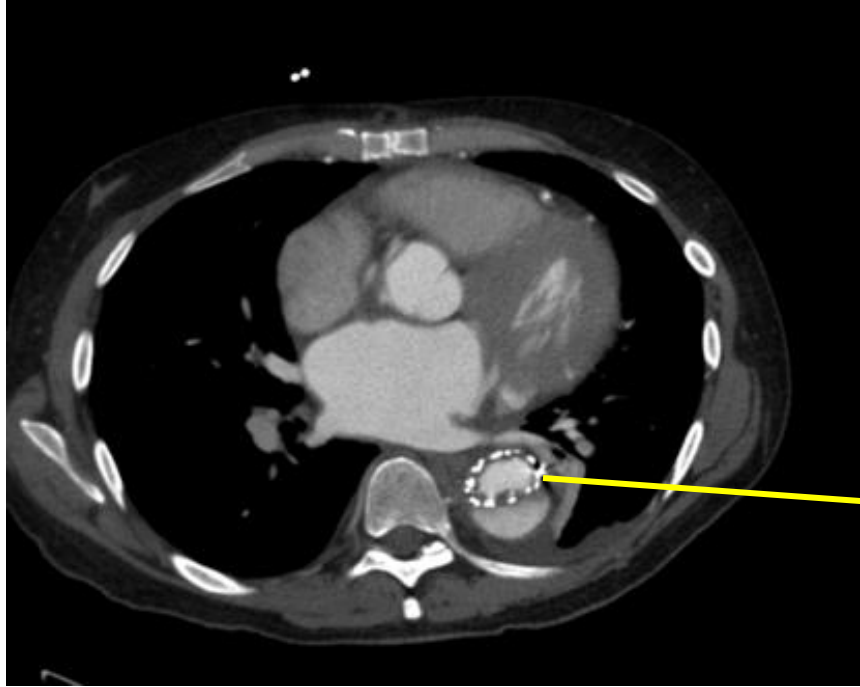
Type A with emergent repair

Arch and Type B dissection

Chronic visceral and lower limb malperfusion

TEVAR Petticoat to TL







Endovascular Complications: Endoleak 1

Arch repair with frozen
elephant trunk

Type B chronic dissection with
Enlargement

TEVAR



Endovascular Complications: Endoleak 2

Type 1B/backwash endoleak

Extension to coeliac

Occlusion device into distal tear/
Coils into sac



Endovascular Complications: Landing Zones 1

42 Marfans

Previous ascending repair

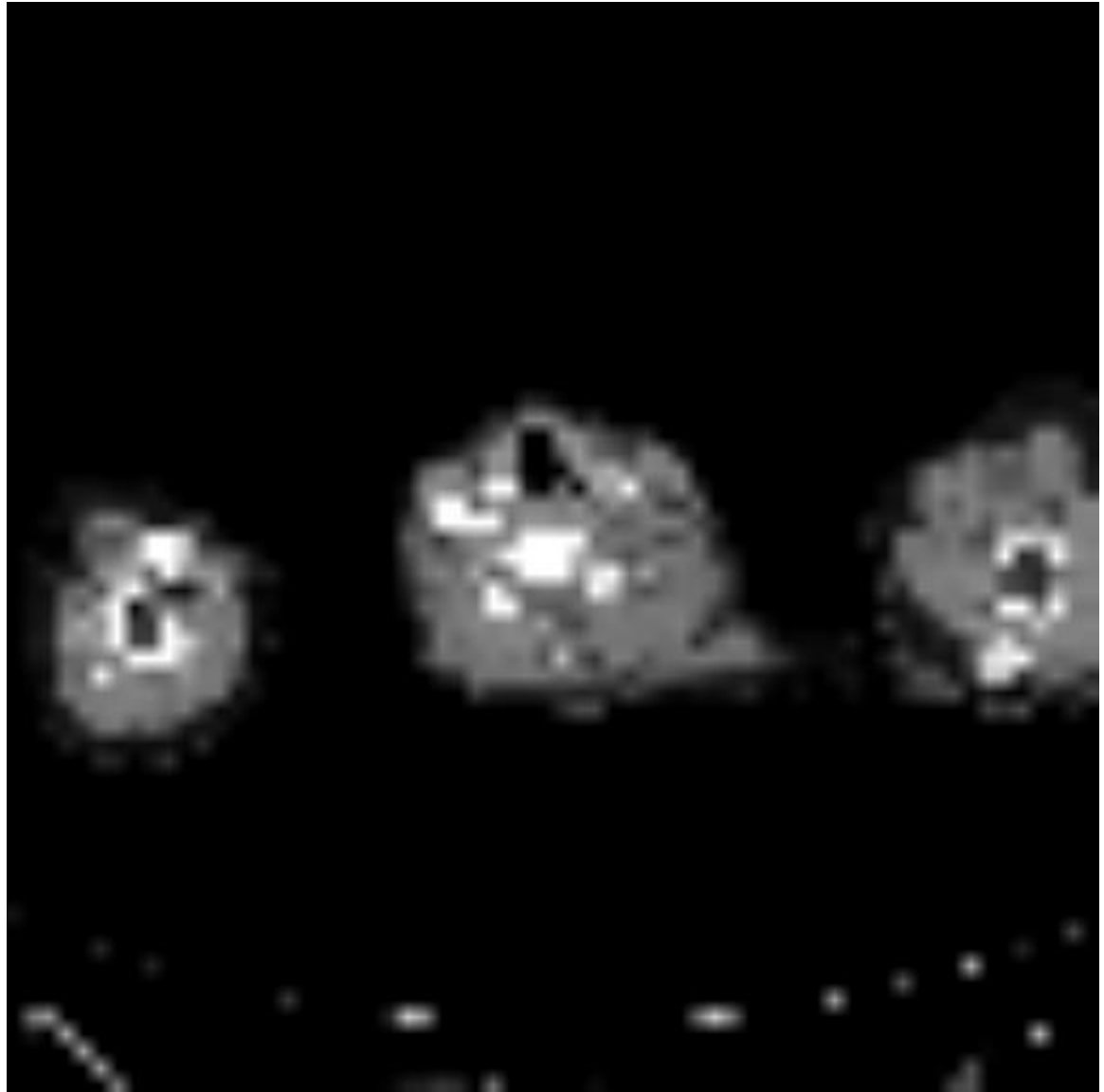
Enlarging Type B component



Endovascular Complications: Landing Zones 2

Arch debranching
neoinnominate and R-L CCA
Bypass

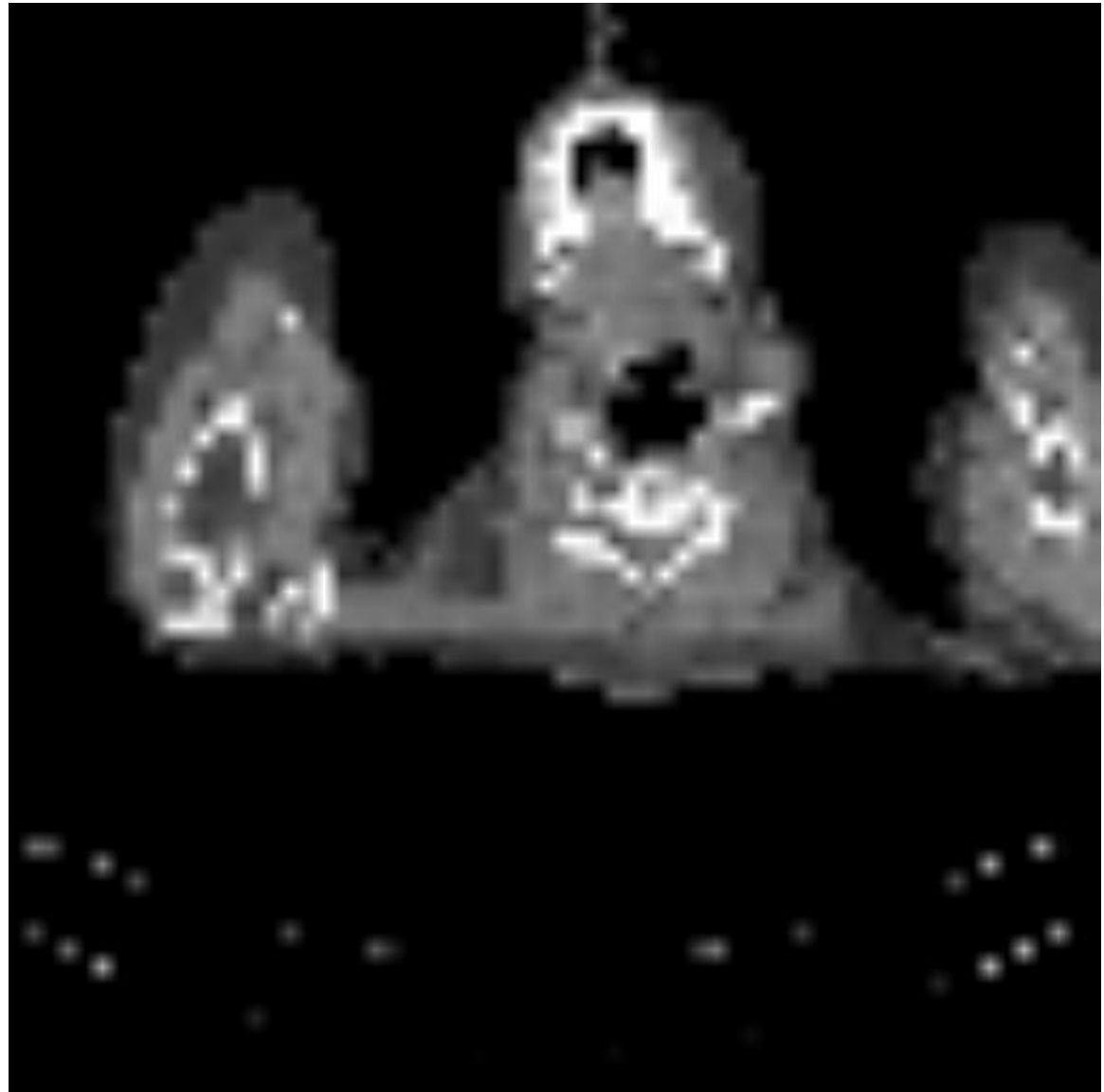
TEVAR



Endovascular Complications: Landing Zones 3

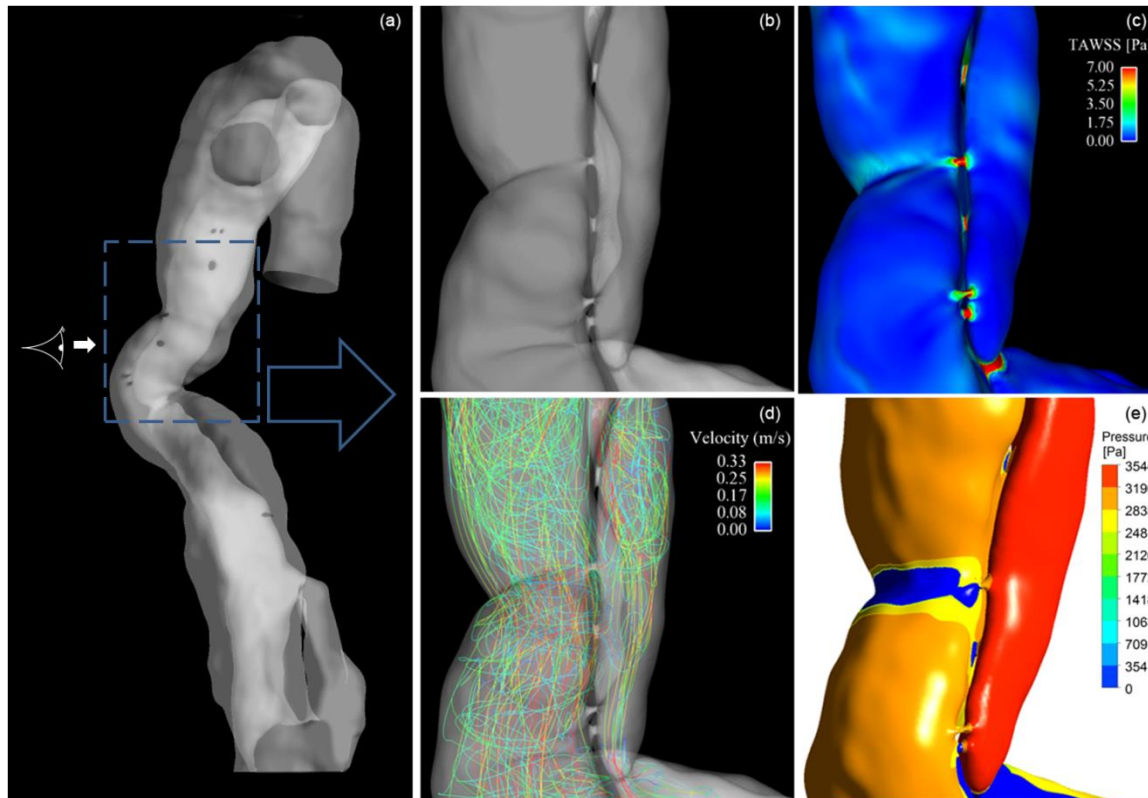
Visceral debranching with
retrograde revascularization

Completion aortic stenting



Distal Tears

2-8 per subject (n=10)



(
F
5 2mm Arterial
C

Imperial College NHS Trust
Philips, Ingenuity CT
2 Aug, 2012 5:07:11.26
120 kV
FOV 382.0 mm
SW 1.16 mm
Z 1.00

R



20 cm

F

C 110
W 665

Imperial College NHS Trust
Philips, Brilliance 64
14 Dec, 2012 9:11:45.56
120 kV
FOV 415.0 mm
SW 0.81 mm
Z 1.00

C
6
5
C

R

30 cm

H
R A L
F

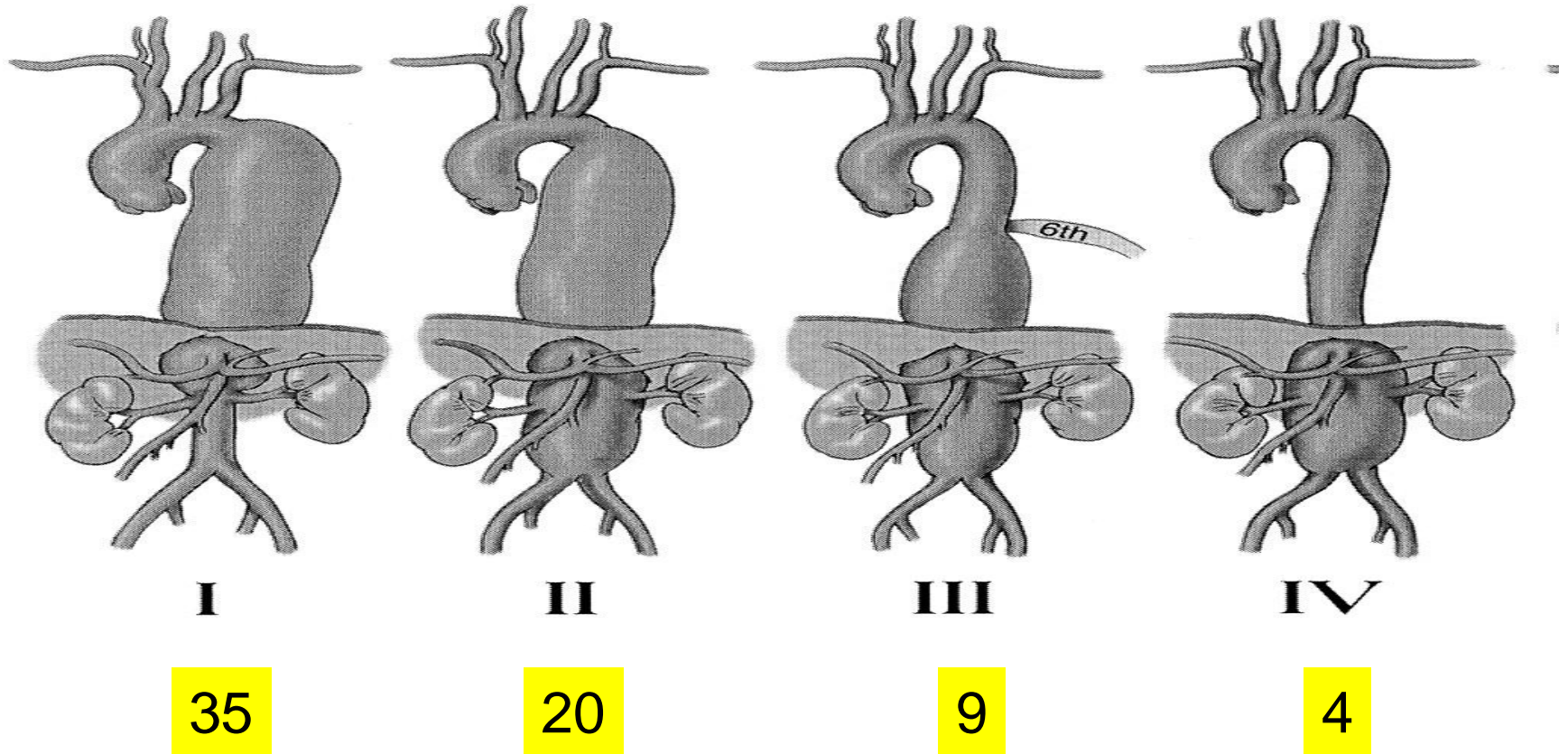
F

C 109
W 720



SMH Experience 2002-12: Complicated chronic TBD

- 84 patients
- 59M:29F
- Age 23-90
- Elective 59/84 (70%)
- Urgent/emergent :25/84 (30%)
 - branch vessel ischaemia(3)
 - pleural effusion(3)
 - rupture(7)
- 14% of patients had Marfans syndrome.



- IRAAA (3).
- Mean follow-up was 68 months (range 1-106)

- 41 Elective:

- Arch hybrid repair(9)
- visceral hybrid repair(15)
- TEVAR(12)
- FEVAR(2)
- OR (1 Type-III, 1 Type-IV, 1 IRAAA)

5% in Hospital Mortality
24% Follow up Mortality

- 21 urgent/emergent

- arch hybrid(2)
- visceral hybrid(1)
- TEVAR(14)
- OR (2 Type-IV, 1 Type-III, 1 IRAAA)

4% in Hospital Mortality
32% Follow up Mortality

paraparesis(4%), paraplegia(4%), stroke(3%)
2 Aortobronchial, 1 aorto-oesophageal fistula
27 Endoleaks, 7 interventions

Conclusions

- Subacute uncomplicated : Endo vs medical
- Subacute complicated: Endo
- Chronic uncomplicated: Medical
- Chronic complicated: Open/endo