



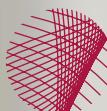
26–27 October 2020
Erika Haus, Hamburg, Germany

6th Aortic Live Symposium
... new hybrid format!

LIVE CASE GUIDE



Newest developments demonstrated by world experts – transmitted in HD



Universitäres
Herz- und Gefäßzentrum
UKE Hamburg

WELCOME

Dear Colleagues,

During the 6th Aortic Live Symposium 20 live cases are scheduled to be performed and transmitted to the auditorium and streamed to a worldwide audience.

The aim of this booklet is to give you an overview about the live case schedule and to provide a practical guide through the procedures.

We hope for your understanding that with respect to the clinical needs of the patients changes of the schedule may occur. Furthermore, the anticipated procedural steps are just an outline of the procedure.

Depending on the discretion of the operator the procedural strategy or the choice of material may vary.

Sincerely yours,



Prof. Tilo Kölbel



Dr. Konstantinos Tsagakis



Prof. Heinz Jakob

Also on behalf of the co-directors



Monday, 26 October 2020

You can register for free and follow the live stream here:
https://www.aortic-live.com/registration_2020/

Please note that Internet Explorer is not supported by the Aortic Live event platform. We recommend using Firefox or Chrome.

CASE 01 | TRANSFEMORAL TAVI IN A LOW-RISK PATIENT WITH BICUSPID VALVE DISEASE WITH SELF-EXPANDABLE PROSTHESIS AND CEREBRAL PROTECTION
Live from Hamburg Session 1 | 08:30-13:00

Patient data: Male, 70 years, 175 cm / 78 kg, severely symptomatic NYHA III

Operators: L. Conradi, D. Westermann

Clinical data: Status post repeat phases of acute cardiac decompensation; CAD ruled out, logEuroSCORE II 1.1%, STS PROM Score 1.7%

Important items: Tachy-cardiomyopathy with moderately reduced LV-function, persistent atrial fibrillation, obstructive sleep-apnea, frailty, CRF: hypertension, former smoker

Procedural steps:

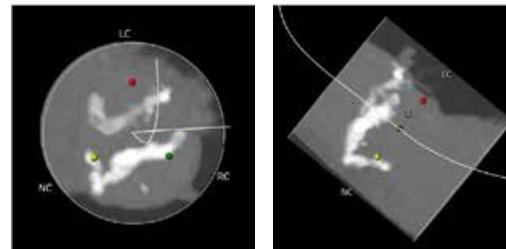
1. Gain femoral access (right common femoral artery)
2. Insertion of Sentinel cerebral protection device
3. Retrograde passage of bicuspid aortic stenosis
4. Predilatation using a 24 mm TrueDilatation balloon
5. TAVI using Medtronic CoreValve EvolutPRO, 29 mm in cusp-overlap technique

Materials:

- CoreValve™ EvolutPRO transcatheter heart valve (Medtronic)
- TrueDilatation non-compliant balloon or predilatation (BD)
- SENTINEL™ Cerebral Protection Device (Boston Scientific)
- MANTA® Vascular Closure Device (Teleflex)



Aortic annulus: 25.0 mm
LVOT: 27.7 mm



Bicuspid aortic valve (Type 0)
No subannular calcification

CASE 02 | TRANSFEMORAL TAVI WITH A NOVEL DEVICE AND CEREBRAL PROTECTION
Live from Leipzig | Session 1 | 08:30-13:00

Patient data: Female, 81 years, R. B.

Operators: D. Holzhey, M. Abdel-Wahab

Clinical data: Severe aortic valve stenosis (AS III°, AVA: 0.5cm²), CAD (CTO LAD – collateralized via RCA, moderate ostial RCA and OM1 stenoses)

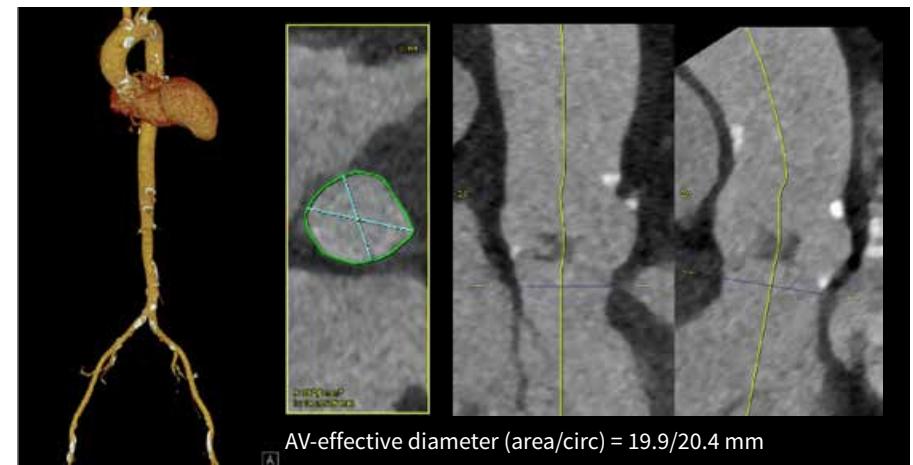
Important items: NYHA III, LVEF 35%, COPD, Osteoporosis, moderate bilateral carotid stenoses, arterial hypertension

Procedural steps:

1. Conscious sedation, most likely no transesophageal echocardiography during procedure
2. Transfemoral access with closure device
3. Transarterial cerebral protection device
4. Valve implantation under rapid cardiac pacing
5. Vascular access site closure and contrast depiction of result
6. Transfer to intermediate care ward

Materials:

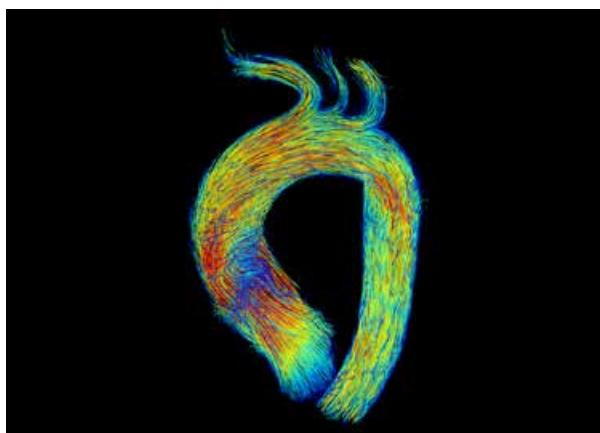
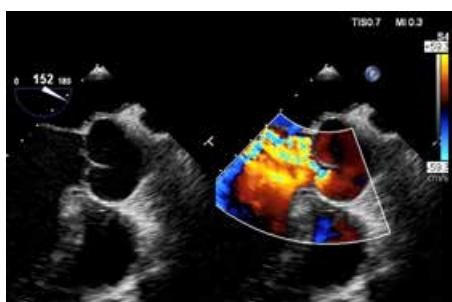
- SENTINEL™ Cerebral Protection System (Boston Scientific)
- ACURATE™ neo2 Aortic Valve System (Boston Scientific)



Aortic bulbus: 32 mm, ascending aorta: 33 mm, sinnotubular junction: 25 mm

CASE 03 | MINIMAL INVASIVE AORTIC VALVE REPAIR IN BICUSPID AORTIC VALVE

Live from Hamburg | Session 1 | 08:30-13:00

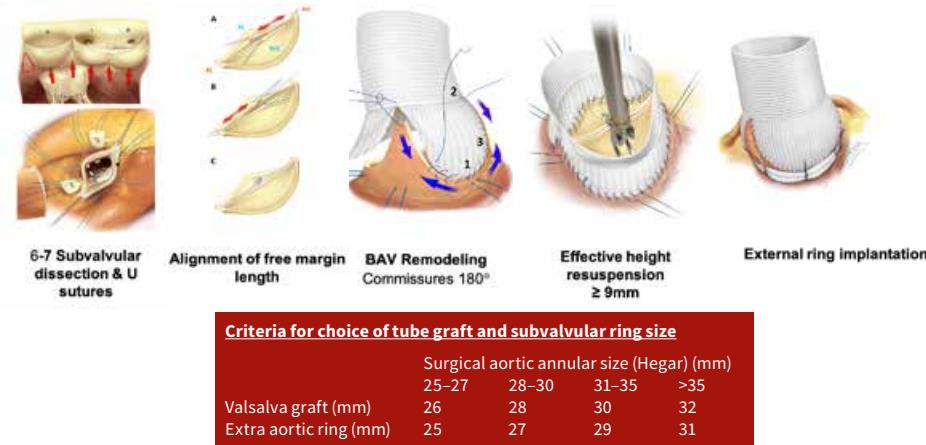
Patient data: 33 years, M.-P. B.**Operators:** E. Girdauskas, B. Kloth, J. Petersen**Clinical data:** Bicuspid aortic valve (Type I, R-N) with severe aortic regurgitation**Important items:** No further risk factors**Procedural steps:**
1. Partial upper mini-sternotomy
2. Venous cannulation of femoral vein for cardiopulmonary bypass
3. Arterial cannulation of aorta for cardiopulmonary bypass
4. Annular stabilization with an external annuloplasty
5. Plication sutures for correction of residual prolapse**Materials:**
· Intergard Woven Thoracic Aortic Graft™ (Getinge)

CASE 04 | AORTIC VALVE INSUFFICIENCY: THE LANSAC-APPROACH

Live from Paris | Session 1 | 08:30-13:00

Patient data: Male, 35 years, BMI 25, high blood pressure
Aortic insufficiency with aortic root aneurysm**Operators:** E. Lansac, P. Danial, A. Berrebi**Clinical data:** Asymptomatic, discovery of a diastolic murmur at a sport medical consultation

Echo: LVF 40% DTD/DTS 71/50 BAV LR with AI III excentric towards the mitral, aortic annulus: 31 mm, sinus of valsalva: 52 mm, sinotubular junction: 39 mm, ascending aorta: 34 mm

Important items: Lansac-approach, BAV remodelling + external subvalvular annuloplasty, Aortic valve repair**Procedural steps:**
1. Excision of sinuses and dissection down to the subvalvular plane
2. Valve assessment (geometric height). Sizing of aortic graft and external annuloplasty ring
3. 7 subvalvular u sutures
4. Alignment of cusp free edges
5. BAV root remodeling with 2 symmetrical neo sinuses at 180° (Valvalva graft, Terumo Aortic)
6. eH measurement and cusp resuspension
7. External subvalvular ring implantation (Extraaortic Ring, Coroneo Inc)
8. Coronary reimplantation and distal aortic anastomosis

**CASE 05 | AORTIC ROOT REPLACEMENT
BY BIOLOGICAL BENTALL PROCEDURE**

Live from Essen | Session 1 | 08:30-13:00

Patient data: Male, 59 years

Operators: A. Weymann, B. Schmack

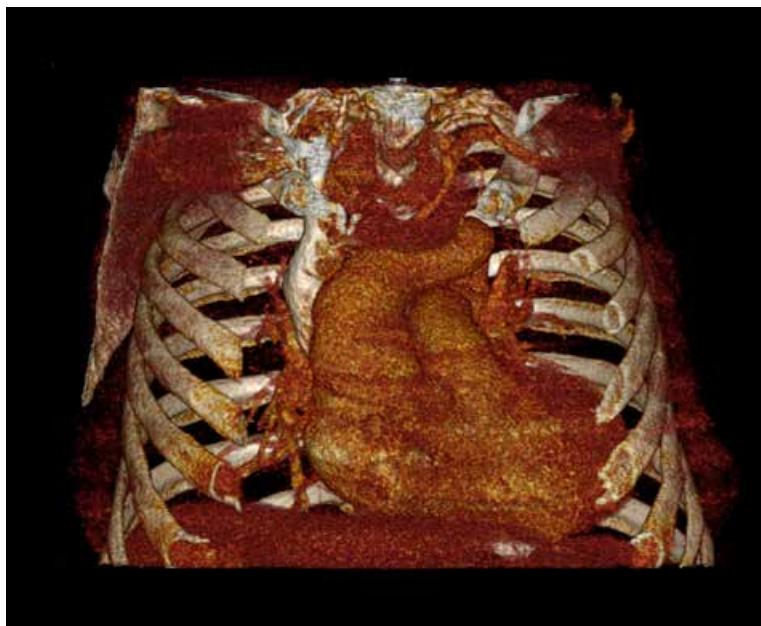
Clinical data: Ascending aorta 5.8cm, Aorta thoracica 3.1cm
Aortic valve stenosis II°, Aortic valve regurgitation I-II°
Mitral valve regurgitation I°

Important items: Cardiovascular risk factors:
Arterial hypertension, Former smoking history, Hyperlipidemia

Chronic obstructive lung disease (Gold II)
St.p. Colorectal carcinoma 12/2014

Procedural steps: 1. Aortic root replacement
2. Replacement of the ascending aorta

Materials:
· Freestyle® stentless aortic root prosthesis (Medtronic)
· Hemashield® Platinum Woven (Getinge)



**CASE 06 | BALLOON-EXPANDABLE COVERED STENT
IN ADULT COARCTATION**

Live from Hamburg | Session 1 | 08:30-13:00

Patient data: 27 years, A. S.

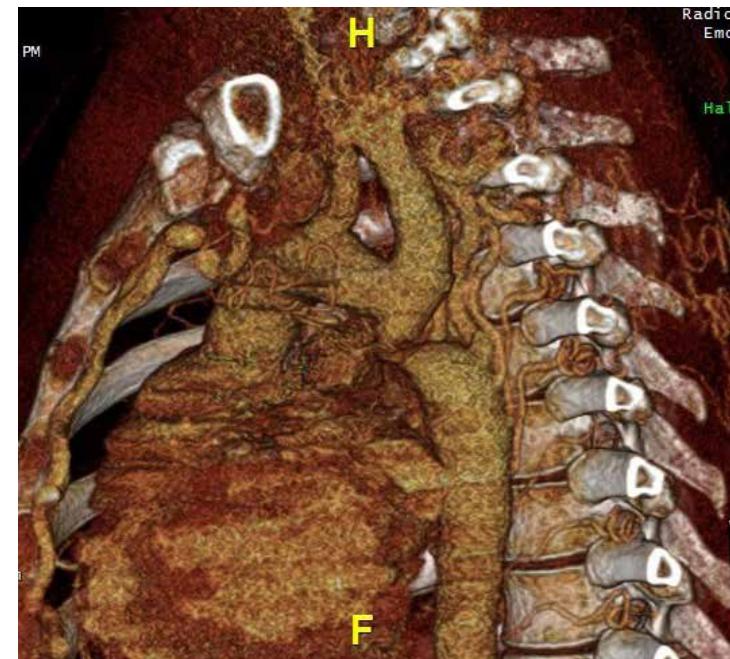
Operators: T. Kölbel, D. Y. al Sarhan

Clinical data: Adult coarctation with art. hypertension

Important items: Healthy young individual with hypertension

Procedural steps: 1. Percutaneous access
2. CT-fusion
3. Catheterization of coarctation
4. Placement of balloon-expandable covered stent
5. Postdilatation and final angiography

Materials:
· ProGlide™ (Abbott)
· VesselNavigator (Philips)
· Advanta™ Large (Getinge)
· Atlas PTA Balloon (BD)



CASE 07 | OPEN REPAIR IN TYPE II THORACOABDOMINAL AORTIC ANEURYSM

Live from Hamburg | Session 2 | 14:00-18:30**Patient data:** Male, 48 years, S. M.**Operators:** E. S. Debus, C. Detter, S. Honig, J. Brickwedel, K. Arulrajah, A. Doering**Clinical data:** Type II thoraco-abdominal false lumen aneurysm (5.5 cm); previous surgery: FET and left carotid subclavian bypass for chronic type A dissection May 2020 and TEVAR to celiac artery July 2020**Important items:** Genetic exclusion of a connective tissue disease, chronic idiopathic autoimmune thrombocytopenia (Werlhof's disease)**Procedural steps:**

1. Cerebrospinal fluid drainage the day before surgery
2. Thoraco-abdominal approach and exposure of left lower pulmonary vein or left common femoral vein
3. Distal anastomosis (bi-iliac)
4. Proximal and visceral anastomosis, extracorporeal circulation with selective organ perfusion
5. Reimplantation of intercostal arteries

Materials:

- LiquoGuard® (Möller Medical)
- Hemashield® vascular graft (Getinge)
- DLP™ Cannulas (Medtronic)



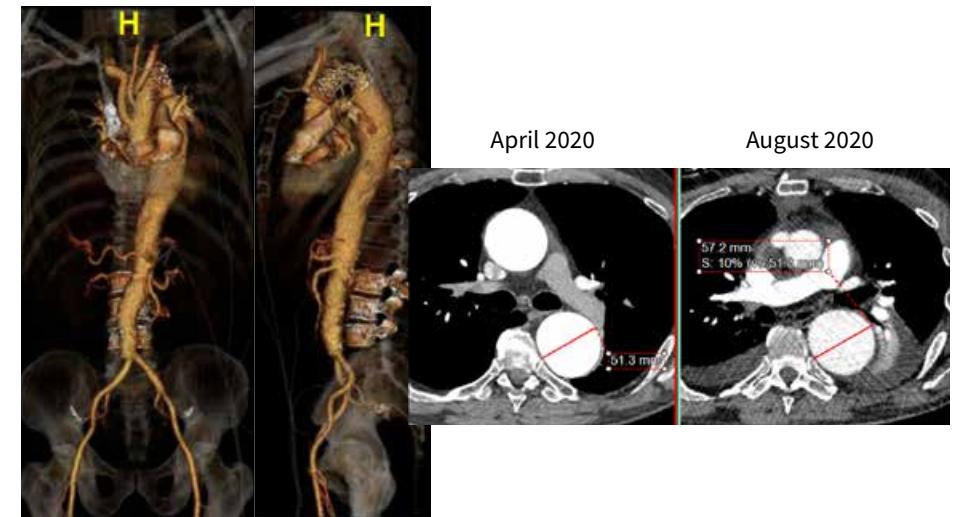
CASE 08 | MISACE IN THORACOABDOMINAL AORTIC ANEURYSM

Live from Leipzig | Session 2 | 14:00-18:30

Patient data: Female, 66 years, R. S.**Operators:** M. Moche, J. Fuchs**Clinical data:** Chronic type A dissection with thoracoabdominal post-dissection aortic aneurysm; s/p ascending aortic and arch replacement with Frozen Elephant Trunk 7/2020 in preparation for TEVAR completion**Important items:** S/p giant cell arteritis 10/2019; Arteria iliaca externa occlusion left; s/p cardiopulmonary resuscitation due to AV blockage during arterial catheter handling; arterial hypertension; COPD (FEV1 37% / VC 58%); Osteoporosis; Glaucoma; Obesity (BMI 31); s/p hysterectomy 1985**Procedural steps:****Materials:**

CASE 09 | TRANSFEMORAL ACCESS IN BRANCHED EVAR WITH INNER BRANCHES

Live from Hamburg | Session 2 | 14:00-18:30

Patient data: Male, 59 years, K. A.**Operators:** G. Panuccio, N. Zabel**Clinical data:** Residual Type II thoracoabdominal aortic aneurysm (56 mm with rapid progression) after aortic arch replacement by FET (4.2020)**Important items:** Pulmonary vein isolation during atrial fibrillation in 2018**Procedural steps:****Materials:**

LIVE CASES, MONDAY, 26 OCTOBER 2020

CASE 10 | TEVAR AND CANDYPLUG IN TYPE B AORTIC DISSECTION

Live from Hamburg | Session 2 | 14:00-18:30

Patient data: Male, 54 years

Operators: F. Rohlfss, D. Y. al Sarhan

Clinical data: False lumen growth due to persistent false lumen perfusion,
Aortic valve-, ascending and proximal arch replacement in acute
Type A aortic dissection 1988, TEVAR with Pettycoat 2019

Important items: Marfan-Syndrom (FBN1), bronchial asthma, hypertension

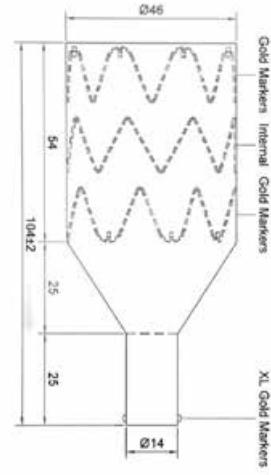
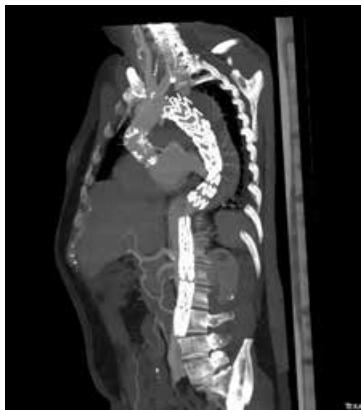
Treatment plan: 2 steps:

1. Aortic arch replacement in Frozen-elephant-trunk-technique
(completed)
2. Now: **TEVAR and Candy-Plug**

Procedural steps:
1. Percutaneous transfemoral access
2. LAO angulation and angiogram to confirm true lumen access
3. True lumen stent-graft extension to celiac artery
4. Catheterisation of the false lumen and Candy-Plug deployment

Materials:

- ProStar XL (Abbott)
- Zenith Thoracic Endovascular Graft (COOK Medical)
- CMD Candy-Plug (COOK Medical)
- Advanta™ balloon-expandable covered stent (Getinge)
- Coda® Compliant Balloon (COOK Medical)
- Planning and pre-op imaging (TeraRecon)
- CT-Fusion technique (Cydar Medical)



Tuesday, 27 October 2020

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CASE 11 | VERTEBRAL ARTERY TRANSPOSITION

Live from Hamburg | Session 3 | 08:30-13:00

Patient data: Male, 71 years, R. V.**Operators:** E. S. Debus, S. Honig, A. Doering**Clinical data:** Chronic type B aortic dissection with thoracoabdominal false lumen aneurysm (diameter 5,5 cm), planned TEVAR with left subclavian artery coverage, very central origin of left vertebral artery**Important items:** Arterial hypertension**Procedural steps:**

1. Exposure of left common carotid artery, left subclavian artery and left vertebral artery
2. Left carotid subclavian bypass
3. Transposition of left vertebral artery into left common carotid artery or bypass graft
4. Wound closure

Materials:

- Tube graft 8 mm/20 cm, Intergard Synergy™ (Getinge)

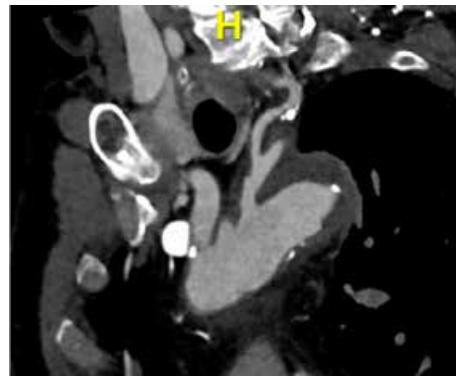


BCT = brachiocephalic trunc

RCCA = right common carotid artery

LSA = left subclavian artery

VA = vertrebral artery



CASE 12 | ENDOVASCULAR AORTIC ARCH REPAIR WITH 3 INNER BRANCHES

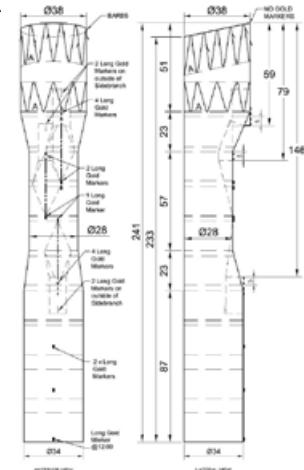
Live from Hamburg | Session 3 | 08:30-13:00

Patient data: 84 years, I. N.**Operators:** T. Kölbel, G. Panuccio, N. Zabel**Clinical data:** Aortic arch aneurysm 6.3 cm
TAAA Type II 7cm bovine arch and 3.9 cm IA-aneurysm**Important items:** 2012 supraca coronary ascending repair for ascending aortic aneurysm
Right carotid subclavian bypass and RSA-embolization (07.10.2020).**Procedural steps:**

1. Access bilateral femoral arteries, right brachial artery, right femoral vein
2. Left ventricle catheterization and main-component deployment from femoral access
3. RCCA-branch catheterization and bridging covered stent placement from right brachial access
4. LCCA catheterization and bridging covered stent placement using steerable sheath from transfemoral access.
5. LSA-catheterization and bridging covered stent from femoral access
6. Distal thoracic extensions to celiac artery

Materials:

- Custom-made inner-branched aortic arch stent-graft (COOK Medical)
- Fluency self-expandable covered stent (BD)
- Destino™ Twist steerable guiding sheath 90 cm/12F (Oscor)
- VBX balloon expandable covered stent (Gore)
- WRAPSODY™ self-expanding covered stent (Merit Medical)
- ZTEG thoracic stent-graft (COOK Medical)

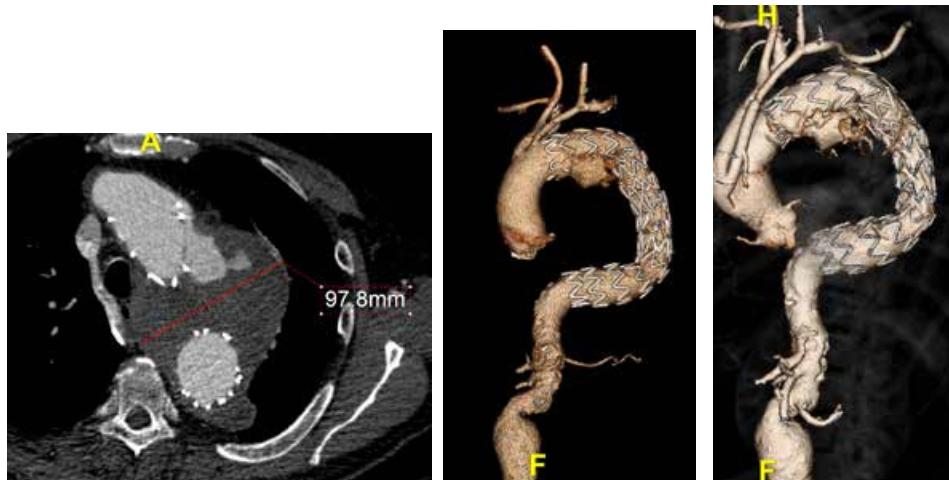


CASE 13 | TEVAR AFTER ZONE-0 DEBRANCHING

Live from Regensburg | Session 3 | 08:30-13:00

Patient data: 56 years, B. M.**Operators:** K. Pfister, K. Oikonomou**Clinical data:** Aortic arch aneurysm (98 mm) after TEVAR with Type Ia Endoleak**Important items:** CAD; Hypertension; Diabetes;
Left carotid-subclavian bypass and TEVAR 2015 (external)
Ascendo-bicarotid bypass and 2x coronary artery bypass 08/2020**Procedural steps:** 1. Access bilateral femoral arteries
2. Angiography over the left femoral artery
3. Implantation of the thoracic endograft over the right femoral artery
4. TEVAR deployment under rapid pacing**Materials:**

- Valiant Navion™ Covered Seal Thoracic Endograft (Medtronic)
- Reliant™ Balloon (Medtronic)
- Sentran™ Sheath (Medtronic)

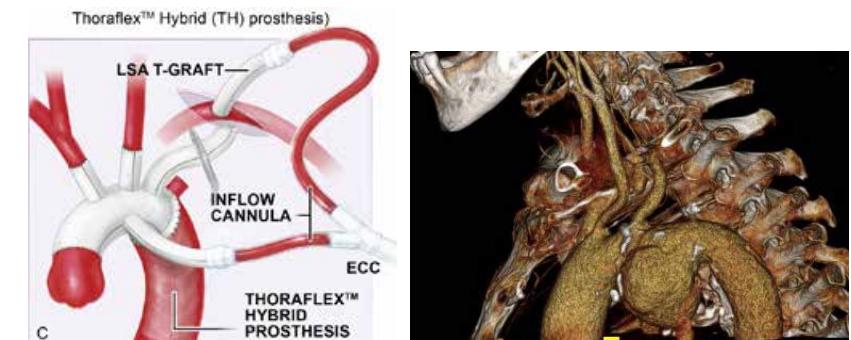


CASE 14 | SIMPLIFIED FROZEN ELEPHANT TRUNK-TECHNIQUE

Live from Hamburg | Session 3 | 08:30-13:00

Patient data: Male, 73 years, 172 cm, 73 kg, B. G.**Operators:** C. Detter, J. Brickwedel**Clinical data:** Aortic arch aneurysm (max. diameter 6.5 cm);
Aberrant left vertebral artery directly arising from the aortic arch;
Significant stenosis of the right posterior cerebral artery;
One-vessel CAD with significant LAD stenosis**Important items:** Nicotine abuse (20 pack years), Sarcoidosis**Procedural steps:** 1. LSA Exposure and 8-mm Dacron conduit.
2. 22F arterial graft cannulation for full body perfusion
3. Sternotomy, venous cannulation of the right atrium, ECC cooling to 25°C
4. Hypothermic circulatory arrest 24°C-26°C and bilateral selective antegrade cerebral perfusion
5. Transection of the aortic arch and deployment of the stent section in the descending aorta overstenting the LSA after ligation; distal graft anastomosis in zone 2
6. Restart ECC after cannulation of the perfusion side branch
7. Anastomosis of left common carotid and innominate artery. Proximal anastomosis
8. LIMA-LAD bypass grafting
9. During reperfusion retroclavicular tunneling and 3. branch anastomosis to LSA**Materials:**

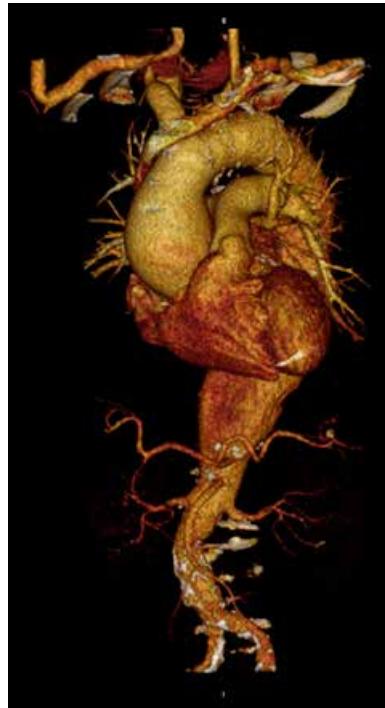
- Gelweave™ prosthesis, 8 mm (Terumo Aortic)
- Thoraflex™ Hybrid prosthesis (Terumo Aortic)



CASE 15 | FROZEN ELEPHANT TRUNK REPAIR WITH A NOVEL DEVICE

Live from Essen | Session 3 | 08:30-13:00

Patient data:	Male, 70 years
Operators:	K. Tsagakis, D. Wendt. A. Osswald
Clinical data:	Megaaorta, coronary artery disease, AV regurgitation, St.p. stroke Ascending aorta 68 mm Aortic arch 40 mm Thoracoabdominal Type I aneurysm 70 mm
Treatment:	Frozen Elephant Trunk, CABG
Materials:	<ul style="list-style-type: none"> · E-vita Open Neo straight (Cryolife/Jotec) · FlowWeave Bioseal® (Cryolife/Jotec) · Hemashield® Platinum Woven (Getinge)



CASE 16 | TEVAR AFTER ZONE-0 DEBRANCHING

Live from Leipzig | Session 3 | 08:30-13:00

Patient data:	Male, 82 years, M. W.
Operators:	S. Desch, S. Leontyev
Clinical data:	Thoracoabdominal aortic aneurysm (6.4 cm), s/p aortic debranching (zone 0) and CABG (vein to OM1) 9/2020 and minimally invasive coil embolization (MISACE) 10/2020
Important items:	CAD (s/p DES in RCA 2012 and OM1 2020 with restenosis distal to the stent); ex smoker (20 PY); arterial hypertension; hyperlipidemia; dual antiplatelet therapy (ASS and Clopidogrel); peripheral arterial disease; ostial stenosis coeliac trunc (sufficiently collateralized); current CT (post debranching (prior MISACE)/Duplex/ Coronary angiogram (pre CABG)/chest X-ray available

- Procedural steps:**
1. Conscious sedation and CSF drainage catheter
 2. Access via right femoral artery
 3. Saftety sheath (4Fr) right femoral artery, additional distal contrast application
 4. Pigtail via right radial artery for proximal contrast application
 5. First stent graft (straight 42 mm, 22.5 cm long)
 6. Second stent graft (tapered 46/42 mm, 23.3 cm long)
 7. Oversizing stent 1 = 13%, stent 2 = 16%
 8. Access closure
 9. Transfer to intermediate care ward

Materials	<ul style="list-style-type: none"> · Zenith Alpha™ Thoracic (COOK Medical) · ProGlide™ (Abbott)
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CASE 17 | FEVAR IN JUXTARENAL ABDOMINAL AORTIC ANEURYSM

Live from Hamburg | Session 4 | 14:00-17:00

Patient data: Male, 82 years

Operators: F. Rohlfss, D. Y. al Sarhan

Clinical data: Symptomatic juxtarenal abdominal aortic aneurysm (6,0 cm)

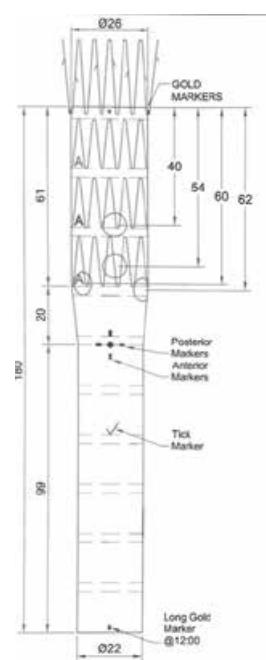
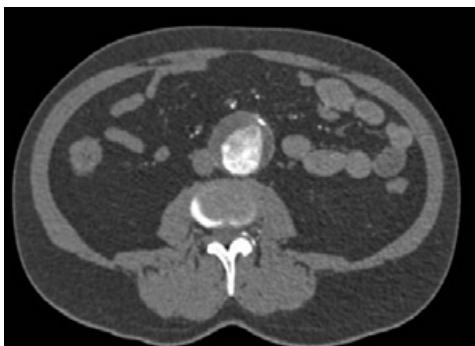
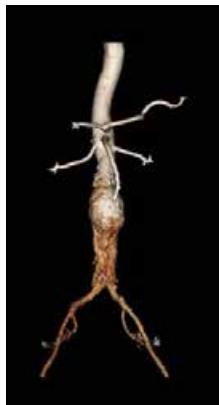
Important items: History of smoking, hypertension, left vertebral artery stenosis with stenting

Procedural steps:

1. Percutaneous femoral access, bilateral (right 20 Fr, left 22)
2. Deployment of custom made 4-fenestrated main body
3. Catheterization of target vessels and introduction of bridging stent grafts
4. Complete opening of the main body, coda balloon
5. Deployment and flaring of bridging stents

Materials:

- ProStar XL Percutaneous (Abbott)
- Custom made fenestrated thoraco-abdominal device (COOK Medical)
- Advanta™ covered bridging stent (Getinge)
- Coda® Compliant Balloon (COOK Medical)
- Planning and pre-op imaging (TeraRecon)
- Fusion technique (Cydar Medical)



CASE 18 | OPEN REPAIR OF DISSECTED INFRARENAL AORTIC ANEURYSM IN MARFAN

Live from Hamburg | Session 4 | 14:00-17:00

Patient data: Male, 50 years, P. F.

Operators: S. Honig, E. S. Debus, K. Arulrajah

Clinical data: False lumen aneurysm of abdominal aorta (5.5 cm) and left common iliac artery (diameter 4.0 cm); previous surgery: replacement of ascending aorta and aortic arch in 2007 and TEVAR in 2009; patch aneurysm aortic arch (diameter 5.5 cm)

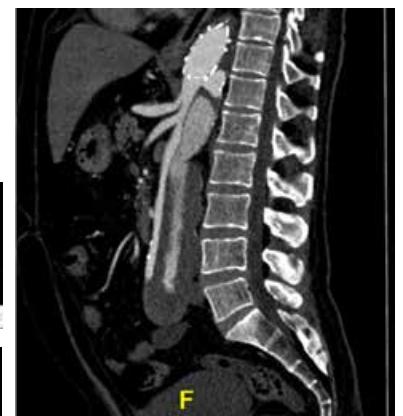
Important items: Marfan syndrome, arterial hypertension, dissection of left renal artery, dissection of right internal and external iliac artery

Procedural steps:

1. Median laparotomy
2. Surgical exposure of infrarenal aorta, right and left common, external, and internal iliac artery
3. Infrarenal proximal anastomosis
4. Distal anastomosis on right internal iliac artery and left common iliac artery
5. Reimplantation of right external iliac artery
6. Wound closure

Materials:

- Hemashield® Platinum bifurcated graft 22x11 mm (Getinge)
- Hemashield® Platinum tube graft 10x30 mm (Getinge)



CASE 19 | EVAR WITH ACCESSORY RENAL ARTERY BRANCH

Live from Regensburg | Session 4 | 14:00-17:00

Patient data: 56 years, B. M.

Operators: K. Oikonomou, K. Pfister

Clinical data: Infrarenal aortic aneurysm 65 mm with bilateral accessory renal arteries

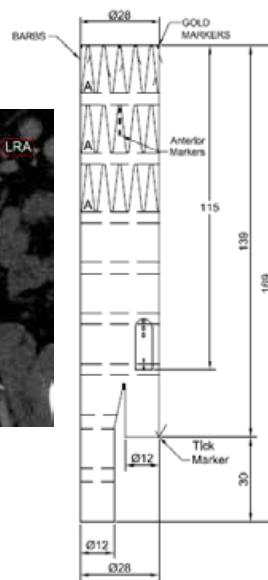
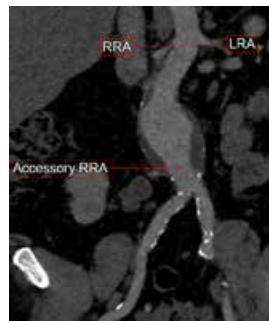
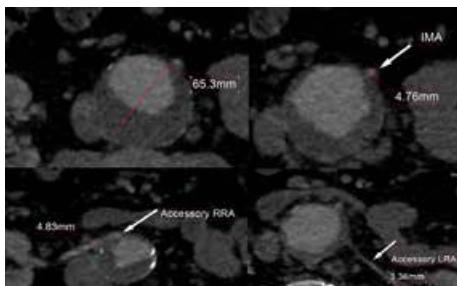
Important items: CAD; Hypertension; Diabetes;
St. p. PTCA with drug eluting stent RCX 09/2020
St. p. IMA Embolization 08/2020

Procedural steps:

1. Access bilateral femoral arteries, left axillary artery
2. Bifurcated device deployed over the right femoral artery, angiography over left femoral
3. Catheterization of accessory RRA Branch over the left axillary artery
4. Deployment of the bridging covered stent-graft into the accessory RRA
5. Bilateral iliac extension

Materials:

- CMD infrarenal stent-graft with single branch (COOK Medical)
- BeGraft Plus bridging stent-graft (Bentley Innomed)
- 12F DrySeal Sheath (Gore)
- Coda® Balloon (COOK Medical)
- Iliac extensions (COOK Medical)



CASE 20 | TRANSARTERIAL ENDOLEAK EMBOLIZATION

Live from Hamburg | Session 4 | 14:00-17:00

Patient data: Male, 85 years, K. P. A.

Operators: G. Panuccio, N. Zabel

Clinical data: Type 2 endoleak after EVAR 2016 with 1 cm progress over 1 year

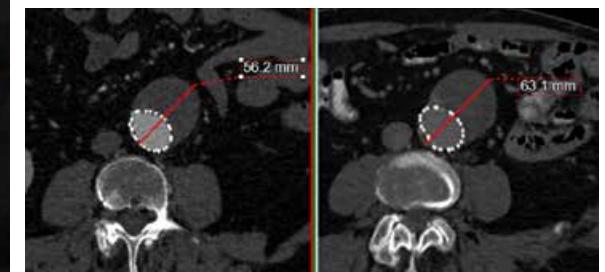
Important items: Lymphoma treated by chemotherapy

Procedural steps:

1. Bilateral percutaneous transfemoral access
2. Selective catheterization of the SMA
3. Selective catheterization of the IMA
4. Coiling of the IMA
5. Final DSA

Materials:

- ProGlide™ (Abbott)
- Ruby Coil® (Penumbra)
- LANTERN® Microcatheter 2.6F 135 cm straight (Penumbra)



LIVE CASE TRANSMISSION CENTERS

ESSEN | UNIVERSITÄTSKLINIKUM ESSEN

Omar Abou-Issa
Ender Demircioglu
Daniel Dirkmann
Mohamed El Gabry
Guido Herbon
Lisa Himpel
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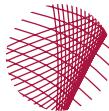


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