Poster Walk: Clinical Cases Surgery

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Not everything that glitters is gold - Lambl’s excrescences mimicking endocarditis
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A 61-year old women presented with dizzy spells and repeated syncopes. Apart from an arrhythmic pulse of 40/min, physical examination was unremarkable. Electrocardiographic-analysis demonstrated an intermittent AV-block III° with cardiac escape rhythm. Transthoracic echocardiography revealed severe aortic valve insufficiency combined with large vegetations on the right coronary cusp. Blood samples showed elevated inflammation parameters (CRP 39mg/L, leucocytes 14G/L). So, infectious endocarditis was suspected and due to ongoing AV-blockage, antibiotic therapy with amoxicillin/clavulanic acid was initiated and urgent aortic valve replacement combined with epicardial pacemaker-implantation was performed. The perioperative pacemaker was uneventful. Serially collected blood cultures and aortic valve samples showed no bacterial growth, PCR-analysis revealed no bacterial DNA. Most important, histological analysis revealed small papillary endocardial proliferates with collagen rich stroma at the right coronary cusp consistent with Lambl’s excrescences. Those are filamentous extensions of the aortic valve cusps that can promote thrombus formation and embolise. Patients are often asymptomatic but can present with ischemic stroke, myocardial infarction or peripheral embolisation mimicking aortic valve endocarditis. Interestingly, we present a patient with AV-block III° due to infiltration of Lambl’s excrescences of the right coronary cusp into the myocardial septum. This is the first description of AV-blockage associated with Lambl’s excrescences on the aortic valve. No such case has previously been described in the literature. Therefore, the combination of AV-blockage and aortic valve vegetations is not always endocarditis-related, infiltrative growth of Lambl’s excrescences could be possible.

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Late post sternotomy “wound healing disorders” due to neoplastic invasion: a diagnostic challenge
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Introduction: Chronic osteomyelitis and mechanical instability are the mainly observed post-operative sternotomy healing disorders. A localized neoplastic infiltration after sternotomy, in patients in whom a tumor disease was previously unknown is extremely rare, but should be considered as one potential differential diagnosis.

We present two patients admitted with the suspicion of chronic osteomyelitises after cardiac surgery. Histopathological analysis proved metastatic lesions directly localized in the sternal scar.

Case reports: The first patient presented an inflammatory swelling close to the sternal scar five years after surgery. This tissue was removed and surgical exploration of the wound revealed destruction of the anterior part of the sternal bone. No injury of deeper mediastinal structures was found. Any infectious process was excluded. Histopathological examinations revealed metastases of a hepatocellular carcinoma. Palliative radiotherapy was started. The patient died 14 months later.

The second patient received a sternal rewiring (Robicsek procedure) during his early postoperative course, due to a mechanical instability. Eleven months later the patient was readmitted for a small inflammatory skin outgrowth of the sternal scar. CT scan showed complete sternal consolidation but an osteolytic process at the right sternal border. A late infection was suspected and it was decided to remove all wires. After incision of the swelling process a fibrous dense whitish tissue appeared. The mass was resected and histopathological analysis proved metastatic lesions directly localized in the sternal scar.

Conclusion: Metastatic involvement of the post sternotomy scar is rare. Noteworthy in the present cases is the lack of obvious general symptoms, which do not facilitate the correct diagnosis. Late “wound healing” problems of the sternal scar were the main complaints in both. We hypothesize that the highly inflammatory and hyper-metabolic surgical trauma triggers a process that promotes secondary seeding of tumor cells in this region, in cases of an existing
primary tumor. According to this, special attention should be payed to late, atypical post-sternotomy lesions or “healing disorders” and, next to the microbiological, a systematic histopathological analysis and a pre-operative CT scan assessment are certainly mandatory.

**P61**

Transcatheter aortic valve replacement in patients with concomitant Type-A aortic dissection

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**Introduction:** Aortic valve dysfunction following Valsalva Sinus re-dissection is a well-known complication that can occur at any time after type-A aortic dissection without root replacement. Moreover, inoperable patients with chronic type-A dissection can also develop aortic valve stenosis requiring a treatment. We hereby present a case series of successful transcatheter aortic valve implantations for symptomatic patients with type A aortic dissection.

**Method:** We performed a single centre retrospective analysis of 30-day and follow-up outcomes of patients with type-A aortic dissection and aortic valve disease treated with a transcatheter aortic valve procedure.

**Results:** Case 1: a 81-year-old lady was successfully treated for Type-A dissection with an ascending aorta replacement (28-mm vascular graft) and valve resuspension. A month later, the patient was readmitted for acute heart failure and a transthoracic echocardiogram showed severe aortic regurgitation due to non-coronary Valsalva Sinus re-dissection and non-coronary aortic valve leaflet prolapse. The patient underwent a transfemoral transcatheter aortic valve implantation with a 29-mm CoreValve Evolut R and extrapolatral membrane oxygenation support (EuroSCORE-II: 45%).

Case 2: a 74-year-old man presented with traumatic acute type-A aortic dissection and traumatic right appendage rupture. Rescue surgery was performed to repair the right appendage through a right hemi-clamshell approach. Patient had severe cognitive decline and aortic dissection was not acutely treated. After one year, he develop severe aortic stenosis with mild regurgitation. The patient underwent a transapical transcatheter aortic valve implantation with a 26 mm balloon-expanding Sapien-3 valve (EuroSCORE-II: 22%) (Figure P61-1).

The recovery was uneventful and both patients were discharged on postoperative day 8. At follow-up (20 months and 3 months), patients are clinically stable with echocardiograms showing well-functioning aortic valves. CT-scan showed no progression of aortic dissection.

**Conclusion:** Despite use of stiff guidewires and delivery systems, the transcatheter aortic valve implantation after Type-A aortic dissection represents a valid bailout procedure when conventional surgery is at high risk in selected patients.

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Transcatheter intentional aortic cusps laceration to prevent iatrogenic coronary obstruction during Valve-in-Valve transcatheter aortic valve implantation with a novel technique

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**Introduction:** We present the case of an 84-years-old male patient admitted at our institution due to bioprosthetic aortic valve degeneration (TRIFECTA® 23mm) with a severe aortic stenosis. The patient presented with shortness of breath (NYHA III) and severe functional impairment during the last months. Calculated logistic Euroscore II was 12.08% with a high mortality score for a redo surgical aortic valve replacement. After discussing the patient in the Heart Team, we decided to procedure a Valve-in-Valve (ViV) transcatheter aortic valve implantation (TAVI). Coronary artery obstruction following ViV TAVI is a rare but fatal complication. Patients with risk for coronary obstruction were often referred for a high-risk redo cardiac surgery or coronary stenting. The BASILICA procedure (Bioprosthetic or native valve Aortic Scallop Intentional Laceration to prevent Iatrogenic Coronary Artery obstruction) is a novel transcatheter technique creating a space after slicing the degenerated leaflets, allowing coronary perfusion towards the sinus and the coronary artery after TAVI.

**Methods:** Echocardiography revealed a severe aortic stenosis due to degenerative aortic valve bioprosthesis with a mean gradient of 55mmHg. Pre-procedural Computed tomography revealed a high risk for obstruction of both coro-
nary arteries during ViV TAVI. Therefore, the patient underwent the BASILICA procedure to guarantee coronary perfusion. An SENTINEL® Device was also used for cerebral protection. Following laceration, a CoreValve Evolut™ Pro 23mm was implanted.

Results: After positioning of the cerebral protection device, laceration of the left cusp was performed with an electrified catheter prior to TAVI. Laceration of the right cusp was not successful and was protected with a catheter during valve implantation. After successfully implantation of the CoreValve Evolut™ Pro 23mm, peri-interventional fluorescent X-ray revealed no obstruction of the coronary arteries, no paravalvular leak and no relevant residual aortic gradient. The patient was discharged uneventfully later, showing a good function of the implanted valve without relevant paravalvular leak.

Conclusions: As ViV TAVI use increases dramatically during the last years, BASILICA will become a promising procedure to prevent coronary obstruction in those patients at high risk during ViV TAVI. We report the feasibility and safety of the first patient treated with this novel technique at our institution.

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Right heart failure caused by fat-emboli in the right coronary artery in a patient undergoing mitral valve repair

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Introduction: 66-year-old woman with dyspnea NYHA III and presence of heart murmur prompted cardiologic evaluation. TEE showed prolapsed mitral P2 segment and severe insufficiency. All other valves were normal, Ejection fraction 70%. Coronary artery disease was excluded. Preoperative examinations were normal.

Methods: Cardiopulmonary bypass was induced with hypothermia 32°C. After cross clamping of the aorta and cardiac arrest, surgical mitral repair was done via P2 quadrangular resection and ring annuloplasty. Intraoperative TEE revealed regular ejection fraction without any insufficiencies. In ICU two hours after surgery ECG showed ST-elevations in V4-V6, reduced cardiac index 1.6 L/min/m², blood analysis showed elevated lactate. Increased inotropic support did not achieve hemodynamic benefit. Creatine kinase was elevated to 754 U/L, CK-MB to 88.2 U/L and Troponin I to 9.5 ng/L. TEE showed sufficient contractility of left ventricle and competent mitral valve. Right ventricle showed new dilatation with ejection fraction 28%, dilatation of the tricuspid valve annulus and severe insufficiency. Coronary angiography was performed immediately and revealed total occlusion of right coronary artery. Aspirated soft tissue was histologically identified as fat. The distal part displayed a nitroglycerine sensitive reversible spasm. Consequently no dilatation or stent implantation for revascularisation was undertaken.

Results: Subsequent recovery course was prolonged. TEE on 8th postoperative day showed left ventricular ejection fraction 50% without wall motion dysfunction. Right ventricle remained dilated with severely reduced ejection fraction. Tricuspid anterior movement was 0.5 cm and tricuspid valve insufficiency was moderate with dilated annulus. Mitral valve repair was competent. Six months after surgery patient was in good condition.

Conclusions: Elective mitral valve repair is a well-known and safe procedure. Postoperative right ventricular myocardial infarction is rather uncommon compared to included circumflex branches of the left coronary artery System. Reports of systemic embolization or embolization of coronary arteries are most often reported connected to endocarditis. Although very rare, this case taught us the importance of keeping an open mind for unusual post-operative problems. Minimization of delay from commencement of right heart failure to restoration of the coronary artery perfusion is key to optimizing postoperative patient management.
**P64**

Nine year survival of a patient with a primary mitral valve sarcoma after an extensive surgical resection

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**Introduction:** Primary sarcoma of the mitral valve is rare. A complete surgical resection should be attempted even though the accessibility and location of the tumor may provide surgical challenges. The prognosis of patients with a primary cardiac sarcoma is very poor because of their resistance to therapy. This report describes a 48-year-old man who underwent mitral valve sarcoma resection and has remained tumor free for 10 years.

**Case:** In 2008 a 47-year-old Caucasian ships captain was diagnosed with a cardiac murmur. Two years later, echocardiography (performed in the context of physical examination required by his employment) showed a mitral valve tumor (22 x 15 mm) with moderate mitral insufficiency. On January 2010 echocardiography and computed tomography revealed an increase in tumor size (32 x 18 mm) that obstructed mitral flow. Intraoperative histopathology (March 1th, 2010) revealed a cellular spindle proliferation confirming the diagnosis of sarcoma. The tumor, the mitral leaflets and a wide resection of the atrial wall was performed. The atrial reconstruction was then performed using an extracellular matrix-derived biopatch and a biological prosthetic valve was inserted. Subsequent histology revealed a high-grade sarcoma without tumor free border. Following surgery the patient received a combination of radiotherapy (30 x 2 Gy from 20 April 2010 until 02 June 2010) and seven weekly cycles of chemotherapy with Adriblastin. Follow up in March 2018 which included blood work computed tomography of chest and abdomen revealed no evidence of metastasis.

**Conclusion:** Cardiac sarcomas have a dismal prognosis. Overall median survival being a mere 6 months. Resection of malignant sarcoma has been considered palliative, not contributing to long-term survival. Our case shows that an extensive surgical resection appears to be the only mode of therapy to prolong survival.

**P65**

Three-dimensional transesophageal echocardiography reconstruction in acute mechanical mitral valve obstruction during pregnancy


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A 31-year-old patient admitted herself to our clinic in the 31+0 week of prima gravida pregnancy presenting initially with rapid onset dyspnea at rest, chest pain and hemoptysis over the course of the previous day. Patient history revealed only a mechanical mitral valve replacement (Sorin Bicarbon™Bileaflet valve, 29mm) 10 years earlier in Khartoum, Sudan because of post-rheumatic mitral valve stenosis. The patient was under phenprocoumon-therapy and had switched to low-molecular-weight heparin (LMWH) twice daily under frequent anti-XA activity monitoring, from the 6th week of pregnancy onwards.

Transthoracic echocardiography showed a mean gradient of 29mmHG over the mitral valve. Interdisciplinary setting of the indication for an emergency C-section, preceded by implantation of a veno-arterial Extracorporeal membrane oxygenation (ECMO) device.

Intraoperative echography showed correct orientation of the mechanical mitral valve and confirmed the pressure gradients. An immobile, anterior-medial wing with an adhering thrombus-like structure was seen. After successful delivery of a baby boy, an intravenous lysis with Actilyse® (Alteplase) was initiated.

Three days later, the patient became hemodynamically unstable and an abdominal CT scan showed internal bleeding, requiring emergency intervention. Transesophageal controls showed a complete regression of the adhering structure and a reduction of the trans-mitral valve gradient to a peak 15mmHG and mean 9mmHG but persistant immobile wing. The patient was discharged four weeks later, suffering from only a light dyspnea. Transthoracic echocardiographic controls had shown little change in the mean gradient over the mitral valve (10mmHG) and after three months the patient underwent elective mitral valve surgery.

Intraoperatively, the immobile mitral valve wing was cleaned of an obstructing pannus both on the atrial and ventricular side. The original valve was found to be in perfect working order and was ultimately kept in place.

Histological examination found the pannus to be consisting of fibrin and inflammatory cells, with no infectious material. The patient was discharged on the eighth postoperative day.

**Conclusion:** This case highlights the benefits of three-Dimensionally reconstructed ultrasound images in the management of complex, high risk patients.
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Chest wall reconstruction and latissimus dorsi muscle flap plastic in an obese patient—suffering from recurring post-OP thoracic instability with a large soft tissue defect

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Introduction: 68-year old obese patient (BMI 43.94 kg/m²) underwent biological root-, ascending aorta and hemi-arch replacement. After 48h on ICU he was transferred to the ward. On the fifth postoperative day patient developed severe uncontrollably coughing. Due to acute thoracic instability emergency operation was performed.

Methods: Patient suffered from transverse sternal fracture and rip head disarticulation (IV-XII right sided) due to heavy coughing on the fifth postoperative day. Intraoperative finding of a torn internal mammary artery with acute bleeding and hematothorax. First, we performed sternal refixation in in Robicsek Technique. Due to recurring ripp dislocation, we performed refixations resulting in a big presternal soft tissue defect as matter of the number of reoperations and insufficient blood supply in this area. We started VAC-Therapy on day 5 for 13 days. After 18 days we performed double plate osteosynthesis and latissimus dorsi muscle flap plastic.

Results: For the first 18 postoperative day patient underwent sternal and rip head refixations. In addition presternal soft tissue defect was treated with VAC-therapy. In the following two weeks after plate osteosynthesis and muscle flap plastic patient recovered quickly and was transferred to cardiac rehabilitation 48 days after initial operation. Follow up shows that the patient recovered after six weeks of rehabilitation and has no health restrictions.

Conclusions: While sternal instability is a rather common complication after sternotomy, rip head dislocation resulting in total thoracic instability is a rare complication and obese patients are at higher risk. We suggest that contemporary soft tissue muscle covery and plate-osteoosynthesis establishes functionality. Sternal preservation should be considered for stability instead of resection and therefore justifies prolonged treatment.
Dysphagia lusoria in 40-year old female patient - a rare but debilitating malformation

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Introduction: A 40-year old patient suffered from difficulties in swallowing since childhood and experienced throat tightness ever since sometimes even pain while eating. During the last year symptoms worsened and further diagnostic was initiated with diagnosis of impaired oesophageal transit due to a persistent Arteria lusoria.

Methods: After team decision Patient was admitted for a caritido-subclavian bypass and ligature of A. lusoria proximal to the right vertebral artery which was performed without any complications. Six weeks later CT scan showed persistent perfusion of the A. lusoria and patient still suffered from swallowing difficulties. In a second step right antero-lateral thoracotomy through the fifth intercostal space was performed to get visualisation of the aortic arch and oesophagus amongst saving the vagus nerve. A. lusoria was prepared posterior of the oesophagus and clipped and cut with an Endo GIA device distally and ligated proximally after clamping.

Results: Patient recovered without any complications during hospital stay. Initially suspected chyle leak could be excluded. Patient can eat without pain and does not longer experience impaired oesophageal transit.

Conclusions: While Arteria lusoria is a rare malformation with an incidence of 0.5% concomitant dysphagia lusoria is even rarer. We developed interdisciplinary surgical strategy to achieve best surgical treatment in this young patient. Two-Stage operation is feasible and should be considered to minimize surgical trauma or nerval lesions.

Surgical treatment of late pulmonary arteries stenosis in a 13-old patient after PDA closure with VSD-occluder implantation

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Background and Aim: Transcathereter closure of patent ductus arteriosus (PDA) is an established, efficient and safe procedure with high success. However, complications like embolization or migration of the device, pulmonary artery stenosis or coarctation of the aorta may occur. We report on a case of surgical treatment of pulmonary arteries stenosis after PDA closure with ventricular septal defect (VSD) occluder.

Patient and methods: A 3-years-old patient wit large-sized patent ductus arteriosus undertook uncomplicated PDA closure with the VSD occluder application. Mild pulmonary arteries stenosis was discovered after 12 months after occluder implantation with progress in following examinations. The patient underwent failed pulmonary balanoplasty at the age of 12. For this reason, the patient was qualified for cardiosurgical treatment After 6 months the patient underwent successful surgical removal of the occluder with direct defect closure and pulmonary artery plasty.

Results: Perioperative and postoperative periods were uneventful. The patient was discharged from the hospital on the 5th postoperative day. Postoperative transthoracic echocardiography revealed mild left pulmonary artery
Morbid obesity in end stage heart failure: how safe is bariatric surgery in ventricular assist device recipients?

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Introduction: About 25% of patients suffering of end stage heart failure (ESHF) are obese. Morbid obesity (MO; BMI = 40) prevents patients from receiving an organ because increases mortality after heart transplantation (HTx). Moreover, MO (BMI = 40) increases the risk of thromboembolic events (TEE) by 20%. ESHF treatment in obese patients must include the treatment of their obesity. Bariatric surgery (BS) is the most effective treatment for MO, but has prohibitive surgical mortality in ESHF patients. One option is to first implant a Left Ventricular Assist Device (LVAD) to provide hemodynamic stability during BS and reduce patient's BMI to values compatible with HTx (bridge-to-candidacy approach). However, stopping the anticoagulation for BS increases the risk of LVAD thrombosis / TEE, particularly in presence of MO. We report the therapeutic pathway we applied to solve this challenging situation.

Method: A 54 years old man, former smoker, with BMI 43.8 kg/m2 and sleep apnea syndrome, suffered of ESHF due to ischemic and rhythmic cardiomyopathy (CHA2DS2-VASC score 5). Left ventricular ejection fraction was 20%. Mean pulmonary pressure was 35mmHg and cardiac index 2.0l/min/m2. His BMI was the only contraindication to HTx. Our institutional Heart Failure Team decided to implant a continuous flow LVAD to improve patient's hemodynamic condition and then perform a sleeve gastrectomy (SG).

Results: LVAD implant (Abbott HeartMate3) was performed under CPB (75 min) using a minimal invasive approach through an upper minithoracotomy and a left anterior minithoracotomy. The patient left ICU on POD3. Anticoagulation (Sintrom) and antiplatelet (Clopidogrel 75) treatment were introduced on postoperative day (POD)3. A 7kg gain despite nutritional management prompt us to perform a laparoscopic SG 10 months after LVAD implant. Despite the Three previous open abdominal surgeries inducing more technical difficulty, the operation and post-operative phase were uneventful. Sintrom was suspended 3 days before the procedure and replaced by prophylactic IV Heparin (anti-Xa < 0.1). Sintrom was reintroduced on POD3. The operation was uneventful and the patient was discharged at POD 10. Patient lost 17 Kg in the first month after SG but needs to lose 15kg more to be eligible for HTx (BMI < 35).

Conclusions: LVAD followed by BS represents an effective therapeutic strategy to make ESHF obese patients eligible for HTx. New generation LVADs ease management of anticoagulation treatment safer than ever even in patients at high risk for TEE.

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