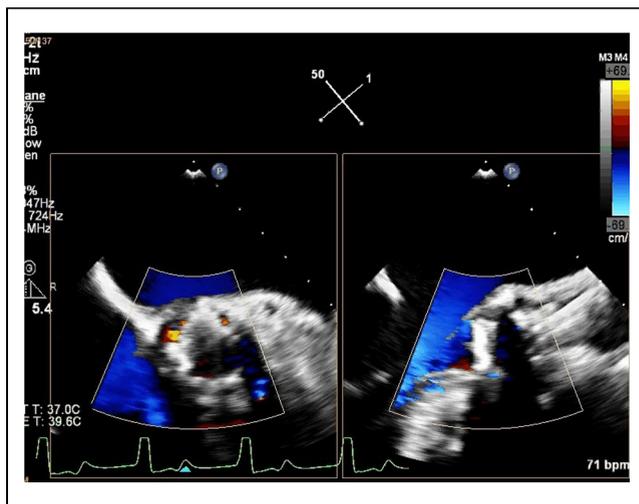
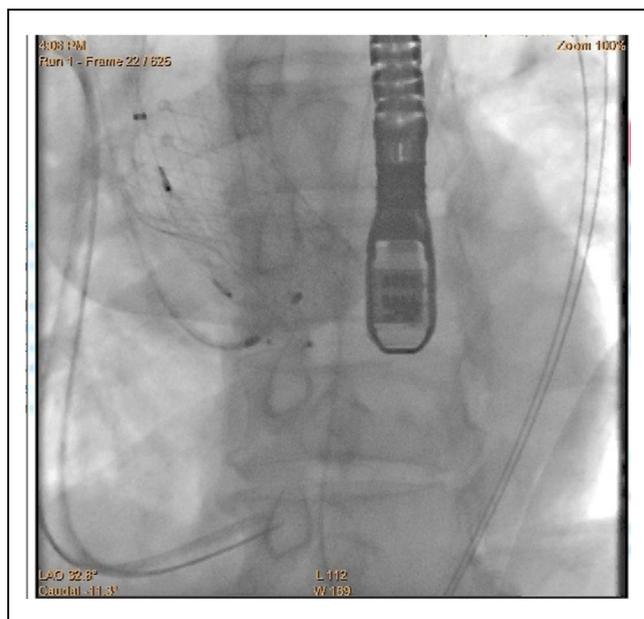


Relevant catheterization findings. Contrast limited percutaneous coronary intervention was done 2 weeks ago and direct aortic TAVI was done using #29 Evolut R with pre- (#20 Nucleus) and post-dilatation (#25 Nucleus) resulted in good valve expansion. Yet there was significant paravalvular leak (PVL), which we believe was likely secondary to the oval annulus. As intra-op haemodynamic was stable, we planned for observation. Day 1 post-op, he developed refractory shock. Intensivist used noadrenaline which likely aggravated the PVL.

[INTERVENTIONAL MANAGEMENT]

Procedural step. Emergency percutaneous post-TAVI PVL closure was arranged. The procedure was done under general anaesthesia and transesophagealechocardiogram (TEE) guidance. Left femoral approach (LFA) and a 8Fr Shuttle sheath was used.

First, Confida wire was put into left ventricle (LV) across the PVL. An AVP II 8mm (Amplatzer, St Jude-AGA Medical Corporation, MN, USA) was deployed but kept unreleased. TEE showed the PVL was halved. We inserted another AVP II 8mm through the same Confida wire but it failed to occlude the residual leak. While planning to upsize the device, the Confida (safety wire) was accidentally lost to aortic root. We rewired the residual PVL defect with terumo wire but the shuttle sheath (8Fr) cannot be crossed due to poor wire support. Hence, we exchanged the terumo wire under Navicross microcatheter (microcatheter used in peripheral intervention) to Confida wire for better support. Yet, 8Fr and 7Fr shuttle sheath still could not be passed hence AVP III could not be used (at least 7Fr compatible). Finally we resorted to the largest AVP II (14 mm), which is 6 Fr compatible. The device was deployed. TEE and angiogram showed significant reduction of PVL and patient was able to wean off all inotropes with stable blood pressure. The two devices were then released. Post-op and 1 month follow-up echocardiogram showed trivial to mild PVL only.



Case Summary. PVL remains a great challenge to TAVI. Some of the current evidence suggested that PVL might improve in self expandable valve with time. However, there is no consensus of when and how to treat PVL. Post-TAVI PVL in patient with minimal pre-operative aortic regurgitation (AR) mimics acute native AR. They can present dramatically as cardiogenic shock as in our patient.

In conclusion, we presented a case of emergency percutaneous closure of severe PVL with cardiogenic shock day 1 post TAVI. The case illustrated the feasibility of PVL closure using amplatzer devices. It also highlighted the importance of international consensus and further interventional efforts in the management of post-TAVI PVL.

TCTAP C-273
Pulmonary Hemorrhage During Transcatheter Aortic Valve Implantation



Ryosuke Higuchi,¹ Tetsuya Tobaru,¹ Kenichi Hagiya,¹ Mike Saji,¹ Keitaro Mahara,¹ Itaru Takamisawa,¹ Jun Shimizu,¹ Nobuo Iguchi,¹ Shuichiro Takanashi,¹ Morimasa Takayama¹
¹Sakakibara Heart Institute, Japan

[CLINICAL INFORMATION]

Patient initials or identifier number. KN

Relevant clinical history and physical exam. Our case was an 81-year-old male with severe aortic stenosis. Because he had several

comorbidities including collagen disease and interstitial pneumonitis needing corticosteroids and home oxygen therapy, we selected transfemoral transcatheter aortic valve implantation (TAVI) using self-expanding valve.

showed acute severe mitral regurgitation (MR), and bleeding blew out from his airway. The prosthetic valve was deployed at optimal position, and stiff-guide wire was extracted from left ventricle. Severe MR had smoothly regressed, and hemodynamics became stable in parallel.



Relevant test results prior to catheterization. Laboratory findings: Creatinine 2.3 mg/dl, eGFR 23 ml/min, NT-pro BNP 3625 pg/ml.

Echocardiography: Severe aortic stenosis due to bicuspid aortic valve (aortic valve area 0.70 cm², peak pressure gradient 114 mmHg, mean pressure gradients 60 mmHg). Ejection fraction 62%.

MR angiography: Severe stenosis of left internal carotid artery. Suspected occlusion of left vertebral artery.

Pulmonary functional test: FVC 68%, FEV1.0 1.56L, FEV1 75%.

Case Summary. Post-procedural chest X-ray depicted bilateral pleural hematoma and left lung hemorrhage. Interference of the left ventricular guide wire with mitral sub-valvular structure and restriction of forward left ventricular flow by prosthetic valve led to severe MR and pulmonary hemorrhage. We sought to stop bleeding with vitamin K, fresh frozen plasma and hemostatic drug. Respiratory failure was managed by non-invasive positive pressure ventilation. During TAVI, careful attention should be paid to position of guide wire, change of hemodynamics and degree of MR.

TCTAP C-274

Never Miss the Deadly Vessel

Hoi Fan Danny Chow,¹ Lars Søndergaard²

¹Hospital Authority, Hong Kong, China; ²Righospitalet, Denmark



[CLINICAL INFORMATION]

Patient initials or identifier number. HH

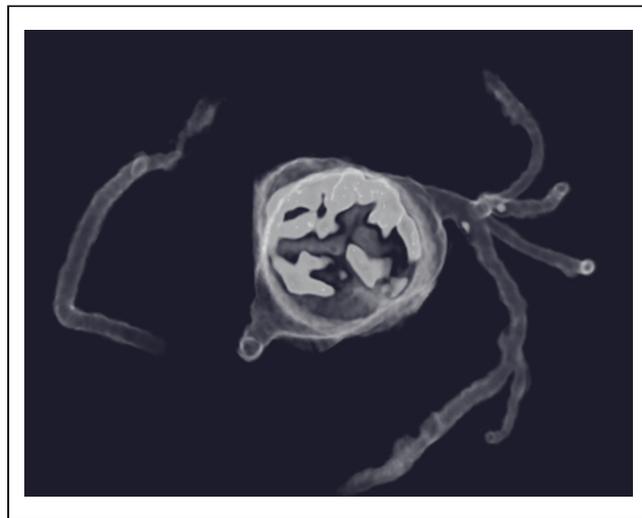
Relevant clinical history and physical exam. A 76 years-old female with history of atrial fibrillation, hypertension, breast cancer, severe lung disease, and stroke. She presented with decrease in exercise tolerance with NYHA III. Physical examination showed 4/6 ejection systolic murmur over aortic area with radiation to the neck. Body weight was 94 kg and height was 164 cm.

Relevant test results prior to catheterization. Echo showed severe trileaflet aortic stenosis with aortic valve area of 0.7 cm² with mean gradient of 25 mmHg and peak gradient 43 mmHg. Stress echocardiogram showed evidence of paradoxical low flow low gradient severe aortic stenosis. Left ventricular ejection fraction of 55%. Electrocardiogram showed atrial fibrillation with QRS 94 ms. A creatinine was normal. CT prior TAVI showed annular diameter of 19.5 x 28.6 mm with average diameter of 24 mm. Perimeter was 76 mm. Area was 428.6 mm². Left ventricular outflow tract was 76.2 mm. sinus of valsalva was 27 x 27. minimal right femoral diameter 6 mm.

Relevant catheterization findings. A coronary angiogram showed no significant stenosis.

[INTERVENTIONAL MANAGEMENT]

Procedural step. The initial plan was to perform TAVI through right femoral approach. 7 French sheath was inserted on the left side for pigtail catheter insertion and 6 french catheters for temporary pacemaker lead. Crossover technique was done with 6Fr IM catheter with 0.35 hydrophilic



Relevant catheterization findings. Severe stenosis of proximal right coronary artery.

[INTERVENTIONAL MANAGEMENT]

Procedural step. At first, we intervened proximal right coronary artery. Following successful balloon aortic valvuloplasty, we tried to deploy self-expanding valve. When prosthetic valve started to expand, blood pressure suddenly declined to 40-50 mmHg. Echocardiography