STRUCTURAL HEART DISEASE: CONGENITAL HEART DISEASE (ASD, PDA, PFO, VSD) (TCTAP C-219 TO TCTAP C-221)

TCTAP C-219

Combined Percutaneous Procedure in Patient with Lutembacher Syndrome: A Case Report and Real-world Practice

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CLINICAL INFORMATION

Patient Initials or Identifier Number. NTB

Relevant Clinical History and Physical Exam. A case of 59 years old female diagnosed with Lutembacher syndrome 3 years ago, refused to have cardiac surgery. She hospitalized because of dyspnea and palpitation that was increased gradually. The exercise tolerance was reduced and the NYHA class increased from class II at the last check-up 30 days before to class IV at this hospitalization. Physical examination showed loud first heart sound, fixed and wide splitting of the second heart sound and mid-diastolic rumbling murmur at the apex.

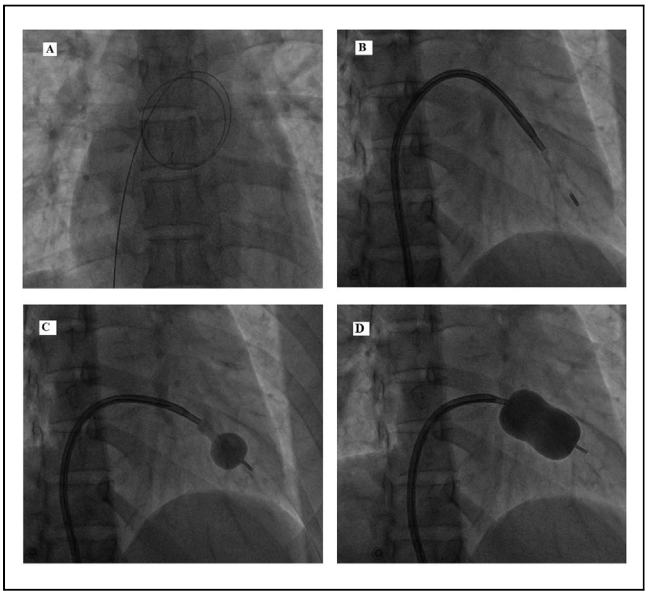
Relevant Test Results Prior to Catheterization. Echocardiography showed a 22 mm secundum ASD with left to right shunt and good surrounding rims. There was also severe MVS with the mitral valve area (MVA) of 0.88 cm^2 by planimetry, Wilkin score of 7/16, mean transmitral gradient of 15 mmHg and insignificant mitral regurgitation. The left atrial, right atrial, right ventricle was dilated and no thrombus was detected.

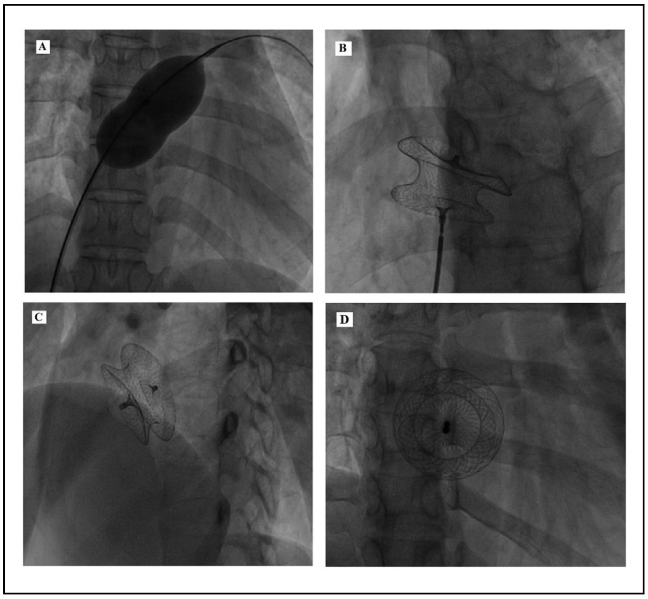
Relevant Catheterization Findings. On catheterization, the Qp/Qs ratio was 4.6, the mean pulmonary arterial pressure was 36 mmHg, the mean left atrial pressure was 22 mmHg, and the mean transmitral gradient was 14 mmHg.

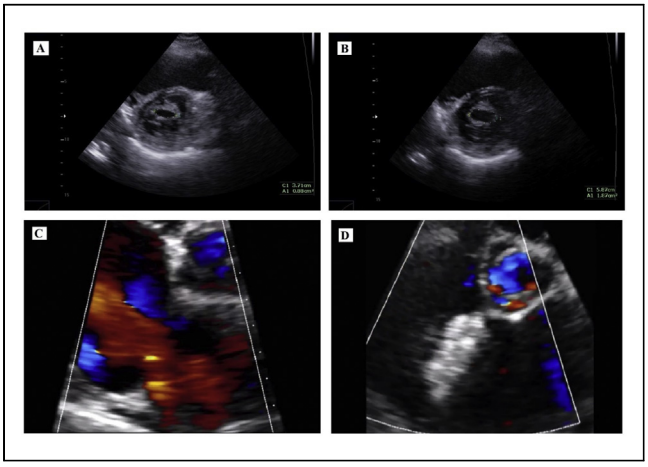
INTERVENTIONAL MANAGEMENT

Procedural Step. Because the patient refused to have cardiac surgery, the symptoms were getting worse with optimal medications, and both the ASD and MVS appeared to be suitable for transcatheter treatment, we planned to perform mitral valvuloplasty and ASD closure in the same setting after explaining the benefits, risks and obtaining patient consent form.

The transcatheter mitral valvuloplasty and ASD closure procedures were performed with preparations, devices, and approaches that were widely described in the literature. The mitral valvuloplasty was done first with a 24 mm Inoue balloon (Toray MedicalCo., Japan) through the existing ASD. After valvuloplasty, the MVA was 1.92 cm^2, the mean left atrial pressure was 11 mmHg, the mean transmitral gradient was 6 mmHg, and the Qp/Qs ratio was 2.8:1. Subsequently, the ASD was successfully closed using a 26 mm Cocoon Septal Occluder (Vascular Innovations Co., Thailand) without complication. The patient was discharged 5 days after the procedure uneventfully. One-year follow-up examinations showed that patient clinical presentations were significantly improved and NYHA class reduced to class II. Echocardiography showed the Cocoon Septal Occluder was in a good position without a residual shunt, the MVA was maintained at 1.87 cm^2 and the mean pulmonary arterial pressure decreased to 19 mmHg.







Conclusions. With the development in technology and experience gaining in cardiovascular intervention, the combination of balloon mitral valvuloplasty and atrial septal defect device closure in Lutembacher syndrome is considered feasible, safe and efficacious. This therapy can be used as an effective alternative to cardiac surgery in carefully selected patients. A prospective data with the larger serial of patients and longer follow-up may be necessary to address the long-term outcome of this combined procedure.

TCTAP C-220

Management of Partial Anomalous Pulmonary Venous Connection in Atrial Septal Defect in Adults

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CLINICAL INFORMATION

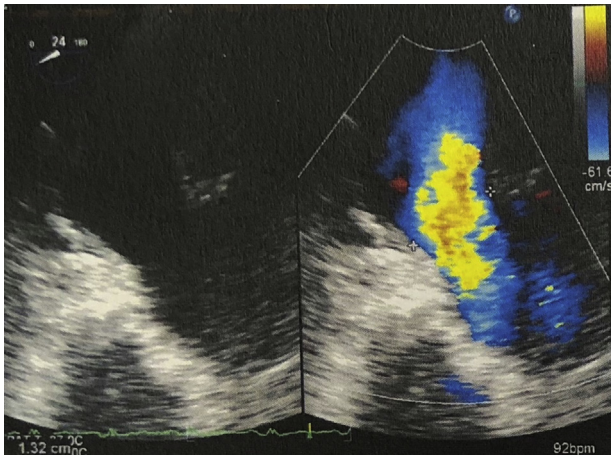
Patient Initials or Identifier Number. SHC00033971

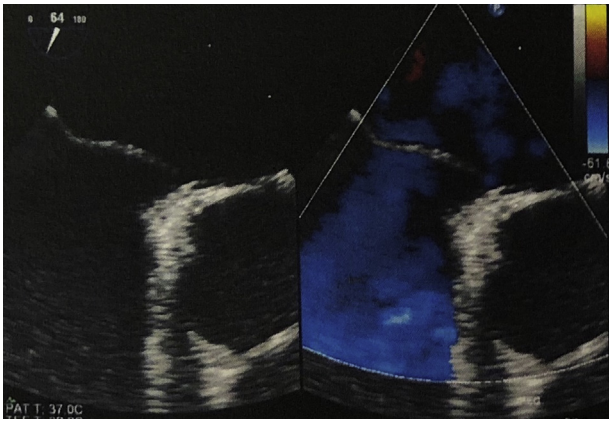
Relevant Clinical History and Physical Exam. A 41-year-old gentleman who is a former smoker presented with vertigo for one year. He has no known medical illness. The vertigo was sudden in onset and intermittent, occurring on average once per week. It was not related to position and was not associated with tinnitus. It was associated with multiple near syncopal attacks. There was no angina, palpitation, hemoptysis, reduced effort tolerance or failure symptoms. Cardiac examination revealed a dual rhythm with no murmur.

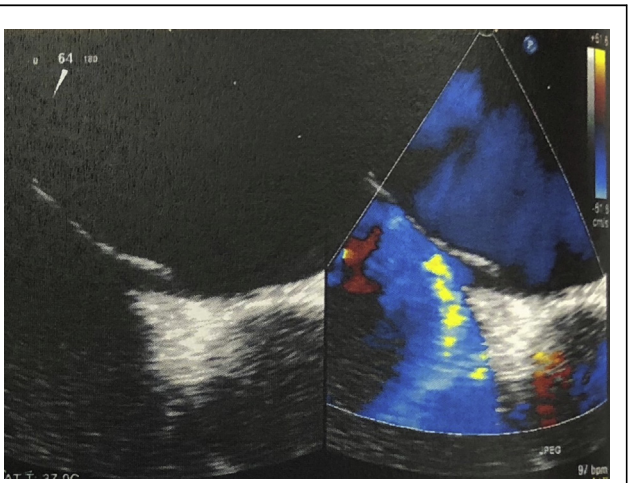
Relevant Test Results Prior to Catheterization. Cardiac magnetic resonance imaging showed good left ventricular function at 56.9% with moderately dilated right ventricle and sinus venosus atrial septal defect adjacent to the superior vena cavo-atrial junction; anomalous connection of right upper pulmonary vein to the superior vena cava, slightly above the superior cavo-atrial junction, anterior to the right pulmonary artery (estimated Qs:Qp = 1.9). All other pulmonary veins drain normally into the left atrium.

INTERVENTIONAL MANAGEMENT

Procedural Step. Pre-pump transesophageal echocardiogram showed sinus venosus atrial septal defect with the partial anomalous pulmonary venous connection. A primary median sternotomy was done. A patch of pericardium harvested and left intact. Patient heparinized. Put on cardiopulmonary bypass. The right atrium was opened with an oblique incision. The sinus venosus ASD, measuring 2 cm x 1.5 cm was seen just before the superior vena cava entrance into the right atrium and was closed with autologous pericardium patch by excluding the right upper pulmonary vein into the left atrium with 4-0 proline suture in a single layer. The left atrium was de-aired once this was accomplished. The aortic X-clamp was then removed. Further de-airing done via aortic root vent. On removal of the clamp, heart resumed normal sinus rhythm. Post-pump transesophageal echocardiogram showed no residual atrial septal defect but small patent foramen ovale noted.







Conclusions. The patient recovered uneventfully post-surgery and was on follow-up at our centre for the next three years. Subsequent echocardiogram showed no residual atrial septal defect flow with good left ventricular function. His vertigo and pre-syncopal attacks resolved post-surgery.

TCTAP C-221

Surgical Closure of Ventricular Septal Defect with Right Ventricular Outflow Tract Reconstruction

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CLINICAL INFORMATION

Patient Initials or Identifier Number. SHC00015211

Relevant Clinical History and Physical Exam. This 38-year-old gentleman presented with reduced effort tolerance for one year associated with intermittent angina. He had shortness of breath on walking for 300 meters however no previous episodes of cyanotic spells or syncope. He was found to have finger clubbing and harsh systolic murmur over the left sternal edge on clinical examination.

Relevant Test Results Prior to Catheterization. Initial work-up with echocardiography showed moderate size perimembranous subaortic VSD measuring about 1.6 cm; gross prolapse of right coronary cusp into VSD and protruding into right ventricular (RV) infundibulum; severe RV infundibular stenosis caused by both prolapsing aortic valve and infundibular muscle hypertrophy; good size pulmonary valve annulus 2.2 cm, mild aortic regurgitation (AR) and no pulmonary hypertension. Subsequent cardiac magnetic resonance imaging