

## OTHER - INNOVATIVE DEVICES AND FUTURISTIC THERAPIES (TCTAP C-103)

### TCTAP C-103

#### Echonavigator - Hybrid Visualization Modality for Atrioseptostomy with the Modified Stent in Patient with Severe Pulmonary Hypertension



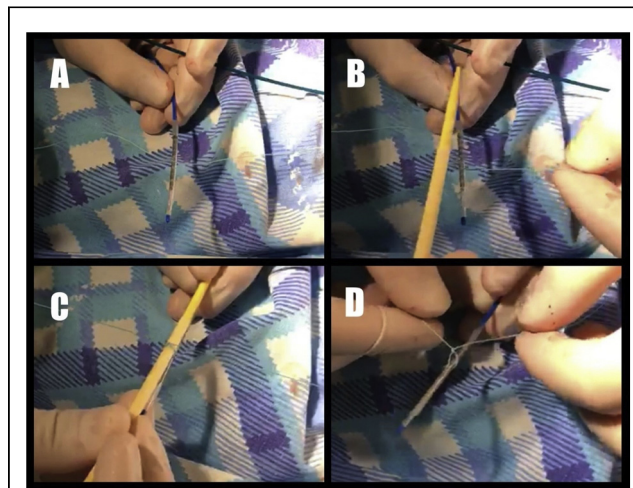
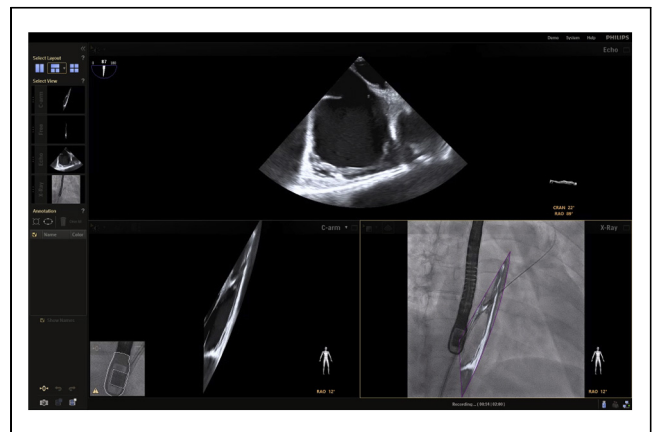
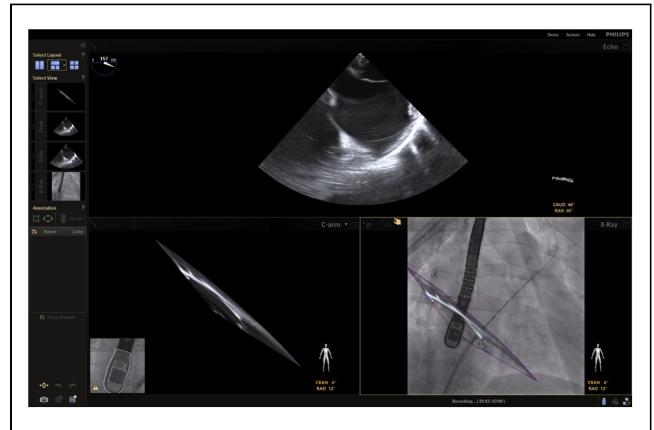
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#### CLINICAL INFORMATION

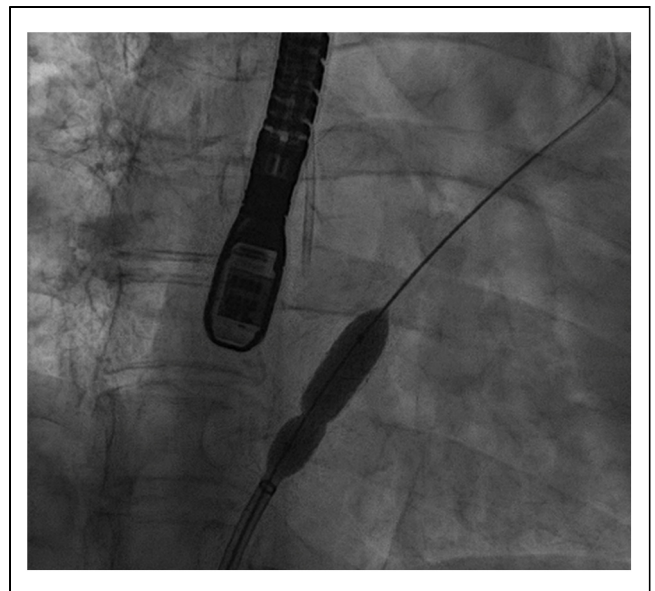
**Patient Initials or Identifier Number.** M14799/20

**Relevant Clinical History and Physical Exam.** 60-year-old female. Symptoms: shortness of breath with little physical exertion, significant decrease in physical activity, independent activity is extremely limited, frequent syncope up to 3 times a week. 2016 - heart catheterization: idiopathic pulmonary hypertension. Treatment with sildenafil, opsumit, iloprost. Since 2019 decompensation despite 3 component therapy.

**Relevant Test Results Prior to Catheterization.** TTE at admit: EDS 3.0, left atrium 3,3 (4,7×3,3), right ventricle 3,8, TAPSE 1,6, right atrium 5,8×4,2, EF(LV) - 58%. Right ventricle hypertrophy. Paradoxical movement of ventricle septum. Enlargement of PA 3,2. Tricuspid regurgitation (++) Vel - 5,0 м/сек. Systolic right ventricle pressure 120, mean right ventricle pressure 50.



**Relevant Catheterization Findings.** Pulmonary artery wedge pressure 14/5(9), pulmonary artery pressure 143/48(81), right ventricle pressure 132/8(54), right atrial pressure 15/4(9), cardiac output=70×3/1,36×135×(0,96-0,64)=210/59=3,5 l/min.; pulmonary resistance=81-9/3,5= 20 wood.

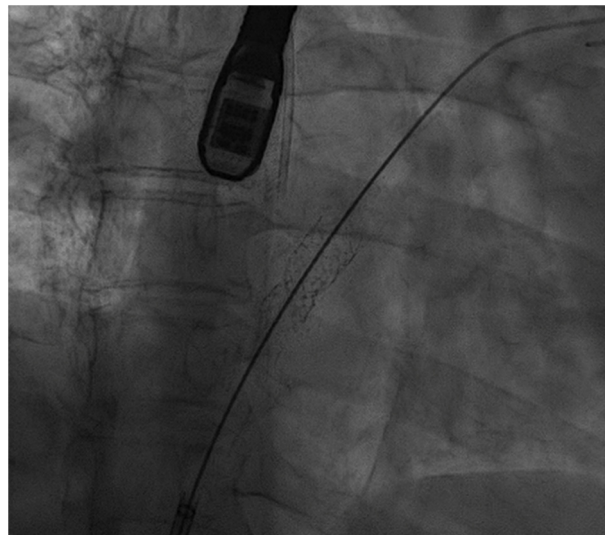
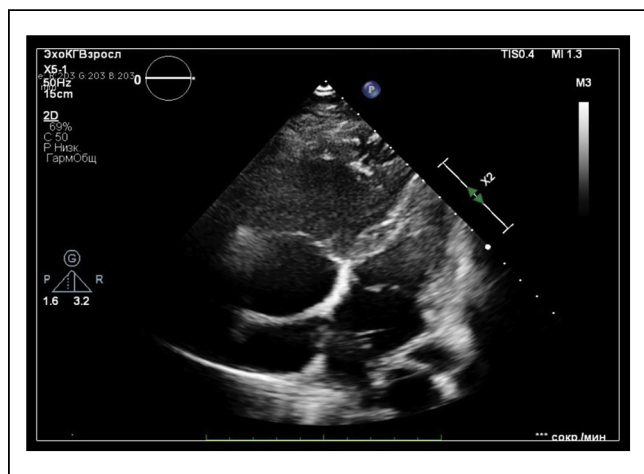
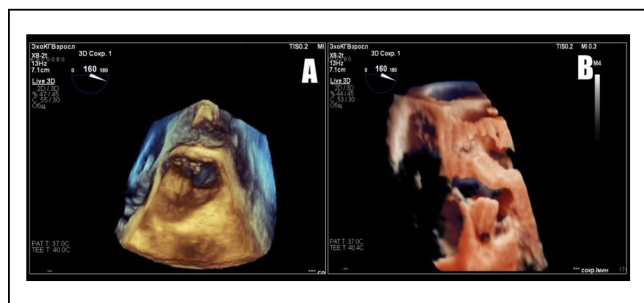


## INTERVENTIONAL MANAGEMENT

**Procedural Step.** Local anesthesia. Right femoral vein approach. Fast-Cath™ 8.5. Transseptal puncture under TEE guidance. Balloon predilatation with 6,0x40 balloon at 8 atm. We custom made the special stent for implantation (figure). We made the loop under one of the Palmaz's 9,0x30 start at the middle of the stent. The size of the loop was to make 7 mm diameter of the ring. We used the 6 mm cylinder for that. The loop was over the stent except one starts to limit motion of the loop back and forward. We delivered the stent inside the ASD occluder delivery system to the left atrium. The problem was to put the middle of the stent exactly to the septum. We did not clearly see the septum on fluoro and did not see all the stent on TEE. In this case, Philips Echonavigator system has unique benefit because it combines fluoro and echo real-time picture on the screen. In the picture, you can see the fluoro of the stent and location by the TEE of the atrial septum on one picture. With Echonavigator system was easy to make positioning of the stent and position and fixation of the stent after deployment was perfect (picture).

TTE post op: EDS LV 4,0 cm (left ventricle size increased and left ventricle is decompressed), LA 3,8(4,9x3,8); right ventricle size decreased 3,3; TAPSE 2,0; right atrium size decreased 5,2x3,9; EFLV (increased) 65%. Right to left shunt via stent 6 mm.

Three months follow-up dramatic improvement. No syncope.



## Conclusions.

1. Atrioseptostomy with 6 mm fenestration is helpful to decompress left ventricle and clinically improve the patients with severe pulmonary hypertension on three component specific therapy. Our case shows the absence of syncope after procedure for 6-month follow-up.
2. One of the problems during this procedure is the difficulty to make good positioning of the stent because we see the septum on TEE, but the stent looks like point or short section on TEE. We see the stent on fluoro, but do not see the septum there.
3. Hybrid modality using Philips Echonavigator system is the solution because it combines benefits of echo and fluoro on one screen real-time and it is an irreplaceable tool in this procedure.

## OTHER - OTHERS (UNCLASSIFIED) (TCTAP C-104)

### TCTAP C-104

#### 'Missing the Mark' - A Case of a Misplaced Central Venous Catheter into the Aortic Arch Despite the Use of Ultrasound Guidance

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## CLINICAL INFORMATION

**Patient Initials or Identifier Number.** MJ

**Relevant Clinical History and Physical Exam.** A 62-year-old female presented to her local district general hospital (DGH) with a 2-day history of shortness of breath and a productive cough. Previous medical history included chronic obstructive pulmonary disease (COPD), type II diabetes mellitus, hypertension and obesity.

After starting oxygen therapy, her consciousness level deteriorated. She was transferred to intensive care unit (ICU) for non-invasive ventilation and ongoing medical management for treatment of an infective exacerbation of COPD.

**Relevant Test Results Prior to Catheterization.** Admission oxygen saturations were 69% on air and high flow oxygen was administered. Admission bloods: CRP 23, WCC of 15.4, electrolytes and renal function were within normal range. An arterial blood gas revealed a type 2 respiratory failure (pO<sub>2</sub> 8.19, pCO<sub>2</sub> 8.14, HCO<sub>3</sub> 37.5).

Despite ICU care, she developed septic shock. The patient was mechanically ventilated and inotropic support was required, therefore a central venous catheter (CVC) was inserted.