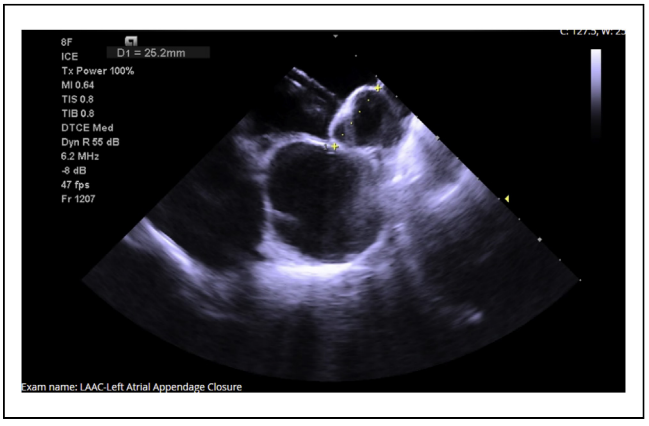
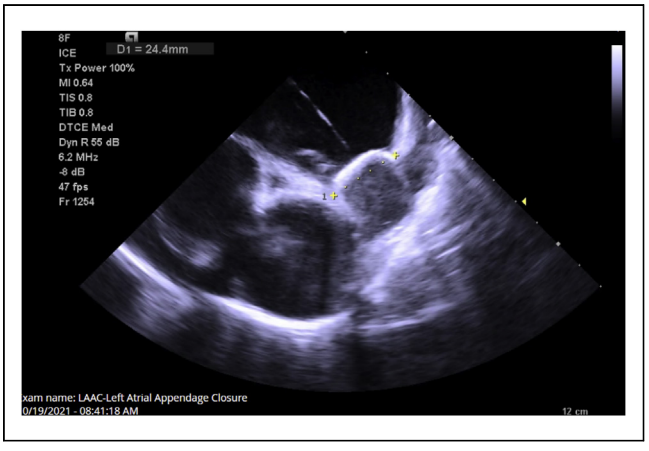
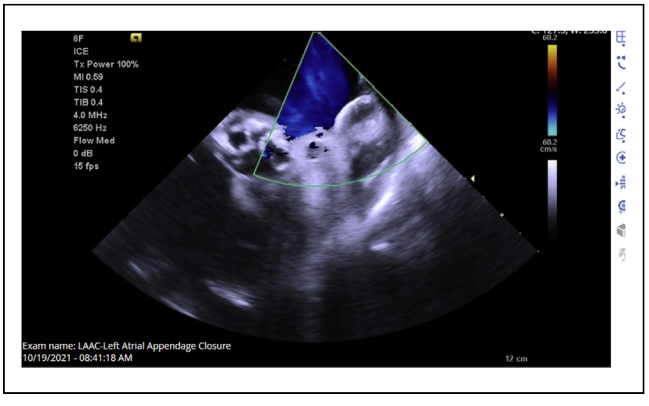
INTERVENTIONAL MANAGEMENT

Procedural Step. Right common femoral vein access was obtained with micropuncture technique under ultrasound guidance. The Seldinger technique was then performed to place two 8 French Sheaths. Heparin was administered to achieve an appropriate activating clotting time. The left atrium was accessed using an AcuNav intracardiac echocardiographic (ICE) probe. A Baylis needle was utilized for transeptal puncture and a Double Curve access sheath was used for device deployment. Angiography of the left atrial appendage was performed using a 6 French angled pigtail catheter. LAAC device sizing was confirmed via angiography and ICE imaging (Figure 5, panel A-C). After satisfying the P.A.S.S. (Position, Anchor, Size, Seal) criteria, a 35 mm WATCHMAN™ FLX device was successfully deployed with 28% compression. The patient was uneventfully discharged home on the same day.







Conclusions. CTA and TEE are both accepted imaging modalities for LAAC planning[2-4]. However, TEE used for structural interventions has been associated with serious complications[4-5]. While CTA has advantages over TEE for LAAC planning, it is contraindicated in patients with renal dysfunction. Our case report highlights the possibility of using CMR for select patients. Here we present a case in which a patient was unable to tolerate TEE from prior stroke and CTA was contraindicated due to renal dysfunction. CMR provided detailed anatomy of the LAA, without risk of renal injury or radiation exposure, and accurately predicted the appropriately-sized device in our patient.

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TCTAP C-165

Real-Time Hybrid Visualization Modality Combining Fluoroscopy and Segmented CT-Scan Facilitates Transcatheter Left Atrial Appendage Closure Procedure

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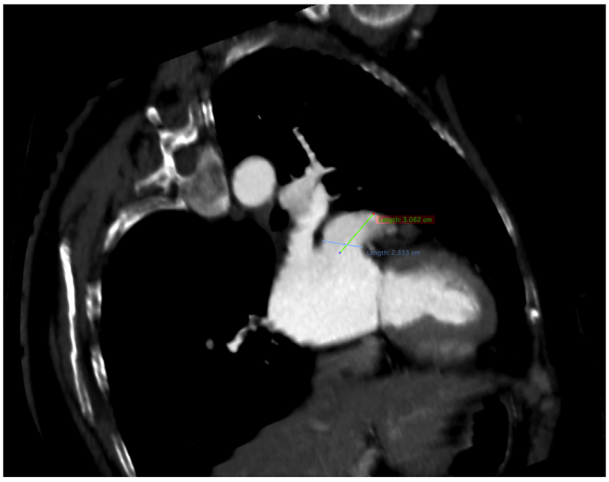
CLINICAL INFORMATION

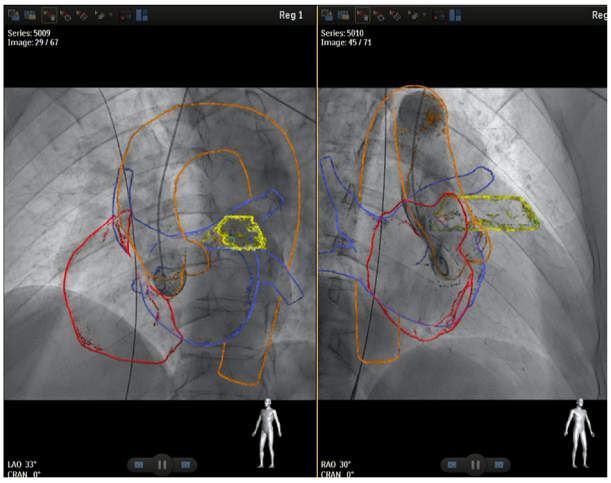
Patient Initials or Identifier Number. NSM

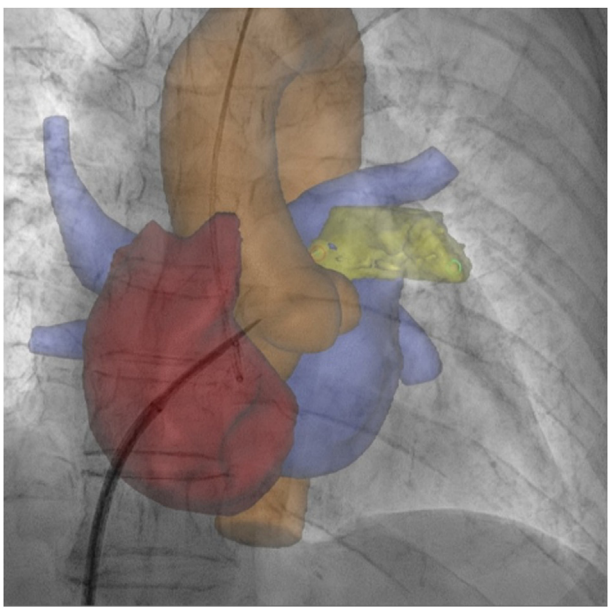
Relevant Clinical History and Physical Exam. N. S. M., a 68-year-old female was admitted to the Department of Interventional Cardiology on September 24, 2021, with complaints of irregular and faster heart beats during prolonged walking and shortness of breath (NYHA class II) since 2018. Atrial fibrillation was detected by ECG during outpatient clinic and the patient was treated with metoprolol, valsartan, and warfarin.

Relevant Test Results Prior to Catheterization. 2D TEE color Doppler showed spontaneous contrasting in the left atrial cavity with a blood flow velocity in the left atrial appendage (LAA) of 50 cm/s without signs of blood clots. LAA dimensions were 1.9 cm x 3.4 cm. Chest CT angio (Figure 1) confirmed LAA volume up to 17 ml, 56 mm long, ostium appendage of 24 mm and the absence of inner thrombosis. CT angio scans have been segmentated using Philips HeartNavigator software and uploaded to Philips angiographic system.



Relevant Catheterization Findings. Right femoral venous and arterial approaches were used. Aortography was performed in two orthogonal projections to synchronize CT images on the fluoroscopic unit. The multispiral cardiac CT scan was synchronized with the angiographic picture using the HeartNavigator System (Fig. 2). After the transseptal puncture, a 6-Fr pigtail catheter was placed in LAA for contrast injection. Fig. 3 showed the correspondence of angiographic picture and segmentated CT. LAA entrance size was measured as 24 mm.





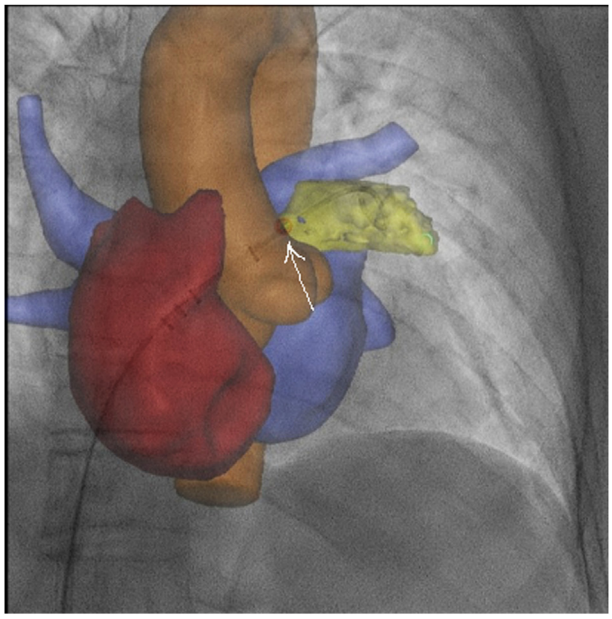
INTERVENTIONAL MANAGEMENT

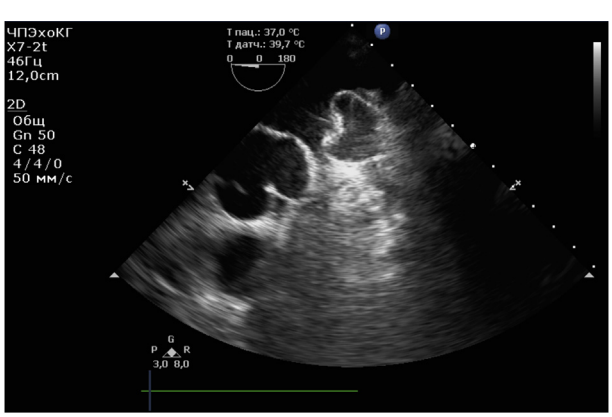
Procedural Step. Transseptal puncture was done with the support of this hybrid visualization that resulted to be of paramount importance to understand x-ray negative structures of the heart (Fig. 4) in all C-arch positions (frontal, oblique, etc.).

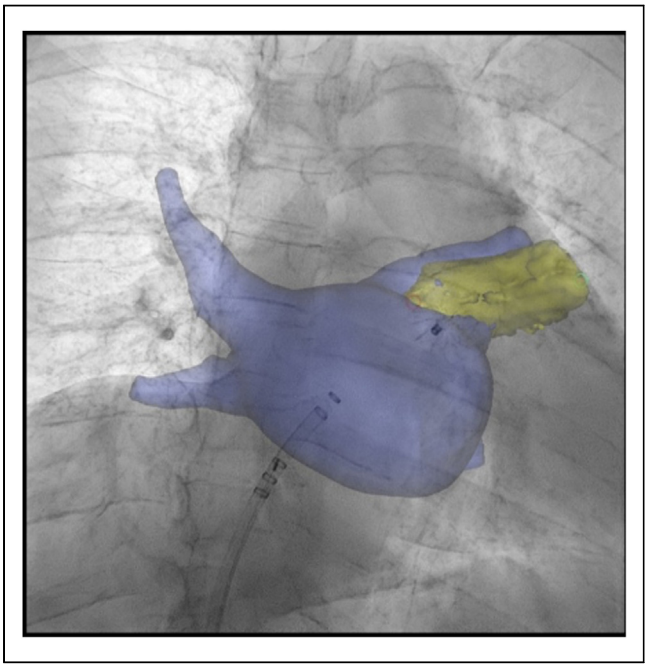
The dedicated delivery system 12F Angioline reached the left superior pulmonary vein and moved to LAA over the pigtail. Markers of the appendage ostium on segmented CT were set. These markers (Figure 5) were used as reference landmarks to deliver the LAA closure device 27 mm (Angioline). The presence of markers allowed us to

position the occluder device safely and securely without the need for contrast injection and risk of embolism. After the opening of the device, a TEE check was performed (Figure 6). Contrast injection was done by hand. A pull-and-push maneuver was performed to check occluder stability and the device was successfully deployed. Patient was discharged home on the second postoperative day without any complication.

At 2-month follow up the patient remained symptom free and 2D transthoracic echocardiography confirmed stable position of the LAA occluder with no residual leaks.







Conclusions. 1. The hybrid visualization modality by HeartNavigator System allows merging segmented CT-scan and real-time fluoroscopy. HeartNavigator System turned out to be useful to visualize x-ray negative structures and landmarks without contrast injection.

2. During LAA closure procedure, there are at least 2 crucial procedural steps where a good understanding of anatomical landmarks is necessary: transseptal puncture and implanting LAA occluder in the correct position.

3. HeartNavigator during LAA closure procedure may be key to successful definition of the relationships and landmarks of the anatomic structures.

STRUCTURAL HEART DISEASE - OTHERS (STRUCTURAL HEART DISEASE) (TCTAP C-166 TO TCTAP C-170)

TCTAP C-166

Percutaneous Pulmonic Balloon Valvuloplasty in Carcinoid Heart Disease With Bioprosthetic Tricuspid Valve

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CLINICAL INFORMATION

Patient Initials or Identifier Number. GM

Relevant Clinical History and Physical Exam. A 52-year-old female presented with easy fatiguability. She is a known case of Carcinoid tumor stage IV with multiple hepatic metastases. She underwent ileal resection, transarterial chemoembolization, Selective Internal Radiation and Tricuspid bioprosthetic valve replacement for severe TR last 2018. She is on monthly octreotide injections. On physical examination, a mid systolic crescendo-decrescendo murmur heard best at 2nd left ICS right sternal border accentuated during inspiration was noted.

Relevant Test Results Prior to Catheterization. Her urine 5-HIAA was elevated at 125.9 mg/24. On 2D echocardiogram the bioprosthetic TV was structurally normal but the right atrium was dilated, and the right