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Percutaneous Left Atrial Appendage Closure
with WATCHMAN™ Device.

Patient Case

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With the courtesy of:
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PATIENT HISTORY

Male, 77-years old. Cardiovascular risk factors: hypertension, prior smoker, ex drinker, previous TIA. Cardiovascular History: Wolff-Parkinson-White Syndrome treated with surgical ablation in 1981. Permanent Atrial Fibrillation. Last Electrocardiogram (2010): Moderate left and right atrial dilatation; moderate aortic root dilatation of 40 mm. Double mild aortic lesions. Mild mitral insufficiency. Moderate tricuspid insufficiency. Pulmonary hypertension (PSAP 53 mmHg). Both ventricles with adequate size and condition. Medication: Enalapril 20 mg /24h; Eprosartan 600 /HCTZ 12.5 mg/24h; Furosemide 40 mg/24h; Acenocumarol 3 mg/24.

LATEST MEDICAL HISTORY

First hospitalization: Patient arrived at Emergency care after episodes of vomiting and immediate loss of consciousness lasting up to 5 minutes (4 episodes), without any posterior neurologic deficit or sphincter relaxation. No infectious or cardiovascular symptoms were referred. After the physical examination, a cranial CT scan showed bilateral subdural hematomas, with 17mm maximum width on the left side. Treatment: hospitalization and observation, waiting for the appropriate moment to undergo a neurological surgery. Further CTs done at 24 and 96 hours showed further bleedings. At the fifth day, as the patient developed hemiparesis, he underwent trepanation with a good response. After 17 days, a new CT showed hematoma organization. As the patient was asymptomatic, he was discharged without any antithrombotic therapy.

Second hospitalization: 5 days after discharge, the patient came back to Emergency care with diffuse abdominal pain and vomiting. He was hospitalized at the Gastroenterology department, and had a gastroscopy and a CT scan done. They detected gastroparesis and a mass of 3,2 cm on the superior pole of the right kidney, suggesting a hypernephroma. The patient also had bleeding due to hemorrhoids requiring a packed red blood cell transfusion.

DECISION MAKING, LAAC INDICATION

After a meeting with the urology team, taking into account the permanent atrial fibrillation, the high risk of stroke (CHA_2DS_2-VASc = 5) and significant risk of bleeding (HAS-BLED = 6), the closure of the left atrial appendage (LAAC) was agreed. Plus, this patient, having had several intracranial bleeds, was at an even greater risk of the known complications of anticoagulants. LAAC was therefore felt to be a great solution. It was decided to do it before the renal surgery and to shorten the post procedure double antiplatelet therapy (DAPT) to 3 to 4 months.

LAAC

Preliminary echocardiogram: the transesophageal echocardiogram (TEE) showed an appropriate anatomy and size, and confirmed the absence of thrombus in the LAA.

PROCEDURE

LAAC was performed under general anesthesia and with the support and guidance of TEE.

Degrees	0°	45°	90°	135°
Diameter (mm):	24	17	20	23
Length (mm):	-	28	25	28

(Preliminary LAA measurements)

The main steps followed are briefly described: Left femoral artery cannulation to place a pigtail in the aorta, to guide transseptal puncture. Right femoral vein cannulation.Transseptal puncture, and then left atrial pressure measurement and injection of 5000 IU of heparin. Sheath exchange to place a double curve WATCHMAN™ Access Sheath (WAS) in the Left Atrium. Pigtail advancement in the LAA, through the WAS. 27 mm device marker of the WAS alignment at the ostium. WATCHMAN™ Delivery System (WDS) flushing. Distal marker bands of WAS and WDS alignment. WAS sheath snapping onto WDS. WATCHMAN™ device deployment. Release criteria evaluation with TEE and fluoroscopy.

Degrees	0°	45°	90°	135°
Post procedural Device Diameter (mm):	20	22	20	20
Device Compression (%):	26	18	26	26

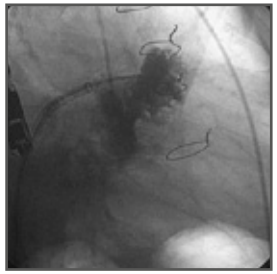

Fig 1. Opacification of LAA by contrast injection via pigtail catheter.

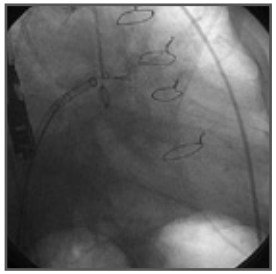

Fig 2. Device deployed

FOLLOW-UP

The patient was discharged the 4th day after the implant under double antiplatelet therapy with Clopidogrel 75 mg/24 h plus Aspirin 100 mg/24h. At 45 days, the device was in good position, with neither peri-device leak nor thrombus as demonstrated by trans-esophagial echocardiography. Bearing in mind that the patient had to undergo non-cardiac surgery as soon as possible, the Clopidogrel was stopped at 4 months and the patient was left with Aspirin only. Patient underwent surgery to remove the renal mass successfully - the mass was diagnosed to be a clear cell renal carcinoma. 6 months after the implant, the device showed no changes in the follow up TEE.

COMMENT

The case represents the paradigm of the LAAC indication, as it was a patient with both a high risk of stroke (CHA_2DS_2-VASc= 5), and a significant risk of bleeding (HAS-BLED= 6), having had gastrointestinal and intracranial bleeding. Furthermore, there was a high risk of future intracranial bleeding in the event anticoagulants were to be used. This patient had the additional challenge of needing renal surgery. WATCHMAN™ Device implantation was felt to be the best solution and it was performed with a 4 month period of post implant double antiplatelet therapy, which was not related to any complications.