



Complex venous disease in transcatheter left atrial appendage closure

Enfermedad venosa compleja en el cierre percutáneo de orejuela izquierda

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To the Editor,

In left atrial appendage closure (LAAC), venous access is often predictable. These are 2 cases of venous disease found during LAAC and the alternatives proposed for its resolution. Both patients gave their informed consent for publication purposes.

In case #1, an 88-year-old man who was a pacemaker carrier, with permanent atrial fibrillation, ventricular dysfunction, and non-surgical sacral fracture was referred for LAAC due to recurrent hemorrhages.

Through previous ultrasound-guided venous puncture a transseptal system was advanced that experienced significant resistance in the iliac curvature, difficult torsion at the right atrium, and loss of driving force in the fossa ovalis (figure 1, videos 1-4 of the supplementary data). Transseptal puncture was achieved through the rigid section of a 0.014 in angioplasty guidewire by exchanging the flexible section and advancing the sheath towards the pulmonary vein. Afterwards, it was exchanged for a 14-Fr sheath, and the pigtail catheter was mounted over the high-support guidewire. However, significant resistance during retraction and rotation maneuvers was reported. Nevertheless, it was successfully placed in the left atrial appendage and several angiographies were performed. During pigtail catheter withdrawal, resistance was very significant with evidence of severe torsion following the previous lumbosacral surgery. Since it was impossible to advance the device due to damage to the distal border or recanalize the sheath with a 0.035 in guidewire the procedure was stopped. Computed tomography (CT) scan revealed the presence of lateral deviation and elongation of the inferior vena cava bifurcation with endofibrosis at this level and loss of cleavage plane with the sacrum, posterior compression of the right common iliac vein, and horizontalization of the left common iliac vein. Conservative treatment was decided.

In case #2, a 74-year-old man with permanent atrial fibrillation, on hemodialysis, prostate cancer, and an old right pelvic fracture was referred for LAAC due to severe hemorrhages in arteriovenous fistula.

During ultrasound-guided venous puncture, a large caliber common femoral vein with flow inside was reported. Since the Teflon-coated guidewire could not be advanced antegradely, an angiography documented the presence of iliofemoral deep venous thrombosis

(figure 2, videos 5-8 of the supplementary data). Procedure went on via left access using a BRK-1 XS needle (Abbott Vascular, United States) by pre-shaping a secondary curve of additional 15° to 20° while the guidewire was being manipulated and elevated to prevent needle deformation. Given the limited contact with the septum, the rigid section of an angioplasty guidewire was required to perform the puncture. A pigtail catheter, and a high-support guidewire were used to bring the 14-Fr sheath closer to the left atrial appendage. A 31 mm Watchman FLX device (Boston Scientific, United States) was successfully implanted. The CT scan confirmed the presence of chronic deep venous thrombosis at right common iliac vein level.

Venous damage is one of the most dreaded complications of lumbosacral surgery. May-Turner syndrome of posterior location (iliac vein compression due to incorrect alignment following spinal instrumentation) has been described by analogy with the anterior location one due to right common iliac artery crossing.¹ In addition, lower limb fractures can become complicated with deep venous thrombosis and eventually trigger chronification in a third of the cases.² The growing prevalence of this plethora of clinical signs and symptoms requires knowing different alternatives to complete structural heart procedures (table 1).

In case #1, the CT scan revealed the presence of an inelastic right axis, high risk of venous fracture, and extreme elongation and horizontalization of the left axis to an extent that all lower limb procedures were ill-advised. Although procedures have been performed via upper³ or transhepatic access,⁴ experience on this regard is very limited. Case #2 illustrates the possibility of left access in patients without extreme elongation or iliofemoral axis horizontalization. As a last resort, epicardial approaches can be used. However, operators should be aware of the need for an associated transseptal access (hybrid procedures) or thoracotomy.

FUNDING

None whatsoever.

AUTHORS' CONTRIBUTIONS

All the authors participated in the management of the patients, collection of clinical information, drafting, and critical review of the manuscript.

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Received 3 December 2022. Accepted 12 January 2023. Online 16 February 2023.

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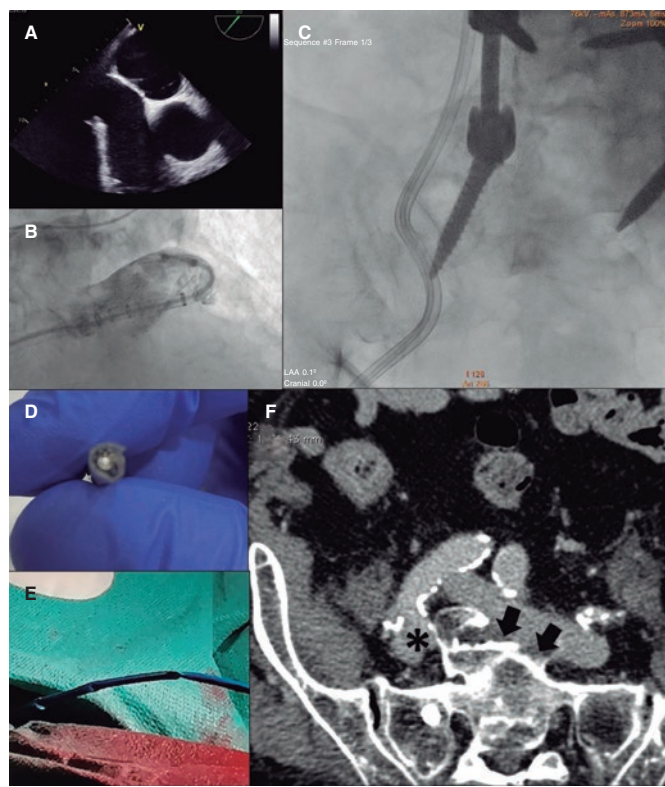


Figure 1. Limited contact pressure of transseptal system (A), and difficult maneuverability of the pigtail catheter (B) due to the severe torsion of the delivery catheter (C). Procedure stopped due to the impossibility of advancing a new device or guidewire (D, E). Computed tomography scan (F) of a compressed right iliac vein (asterisk) between the fracture and the homolateral common iliac artery. Presence of endofibrosis (arrows) and lack of cleavage plane between the left common iliac vein and the sacrum.

Table 1. Technical resources to perform left atrial appendage closure in the presence of elongation, calcification, tortuosity or venous obstruction

Stage of the procedure	Maneuver proposed
Suspected venous disease	Past medical history of trauma/vertebral or pelvic surgery or venous thromboembolic disease
	Ultrasound-guided access (hypoplasia, increased caliber due to venous hypertension, collateral circulation)
	Computed tomography scan (venous stage) and specialized assessment
Correction of tortuosity, and increased passive support	Work on a larger caliber introducer sheath like the ones used for transcatheter valve implantation (anticipate risk of venous lesion and possibilities of transcatheter repair)
	Transseptal puncture
Transseptal puncture	Pre-shaping of the needle additional curve
	Needle with additional sharpening (XS series)
	Sequential use of the rigid and flexible parts of the angioplasty guidewire
	SafeSept system
System crossing through the septum	Radiofrequency or electrocautery needle
	Greater support guidewires
Navigation through left atrium and placement into the left atrial appendage	Septal dilatation with balloon or dilators like the ones used for transcatheter mitral valvuloplasty
	Use of flexible, deflectable or pre-shapable sheaths
Impossibility of lower access route	Additional support with a catheter of a larger caliber (≥ 6 -Fr), and a high-support guidewire inside
	Upper limb access with deflectable sheath
	Epicardial closure (eg, stapling or clips)
	Anticoagulation at lower doses compared to the standard ones

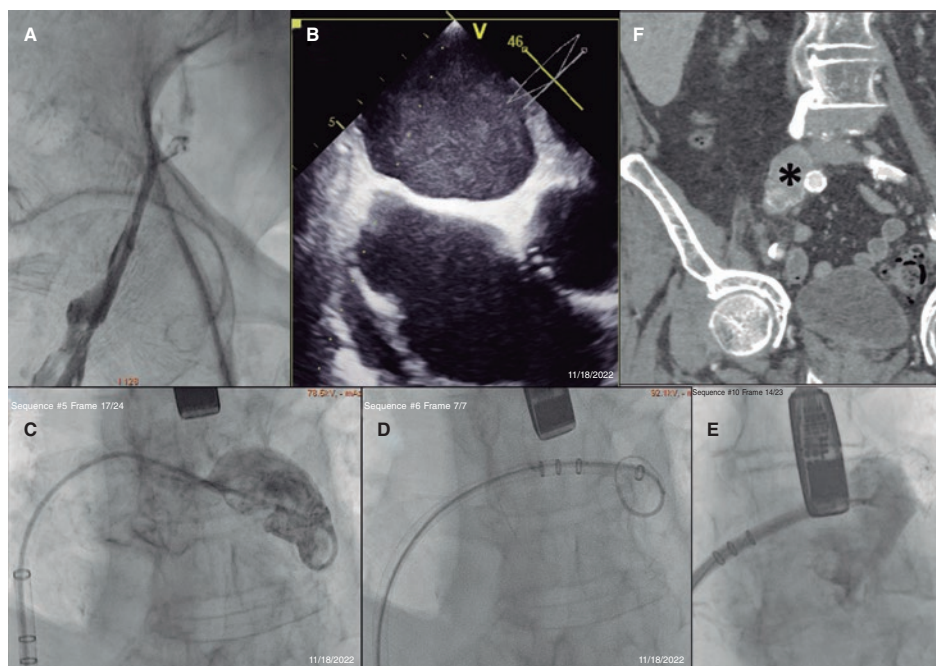


Figure 2. Venography reveals the presence of a complete obstruction that triggered change to left access route (A). Note the unusual position and limited support of both the transseptal puncture needle (B) and the delivery catheter (C). The increased support provided by the rigid guidewire to the 6-Fr pigtail catheter facilitated sheath placement and device release (D, E). The CT scan (F) revealed the presence of an oversized right common iliac vein with hyperdensities inside.

CONFLICTS OF INTEREST

D. Martí Sánchez received consultancy and training fees from Boston Scientific Ibérica. The remaining authors declared no conflicts of interest whatsoever.

SUPPLEMENTARY DATA



Supplementary data associated with this article can be found in the online version available at <https://doi.org/10.24875/RECICE.M23000364>.

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<https://doi.org/10.24875/RECICE.M23000375>

Syphilitic aortitis as a rare cause of coronary ostial stenosis



Aortitis sífilítica como causa rara de estenosis de los ostium coronarios

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To the Editor,

This is the case of a 62-year-old man who presented to the emergency department with signs of an acute neurological syndrome. He remained under regular monitoring due to spastic paraparesis. The patient's past medical history also included dyslipidemia, active smoking, former alcohol abuse, and psoriasis. His routine medication included daily aspirin 150 mg, and simvastatin 20 mg. Due to severe worsening of his neurological status, he was admitted for further evaluation. After careful clinical evaluation, diagnosis of cerebellar and pyramidal syndrome in the neurosyphilis setting was achieved. Penicillin was started. During hospitalization, cerebral magnetic resonance imaging revealed the presence of a massive hernia at C4-C5 causing significant spinal cord compression. Decompressive surgery was advised. During hospitalization, he complained of chest pain. The ECG showed signs of sinus rhythm with sustained diffuse ST-segment depression and ST-segment elevation in aVR and V1. The transthoracic echocardiography showed a severely impaired left ventricular ejection fraction with severe hypokinesia of the apex, anterior, posterior, and lateral walls. The aortic root was mildly enlarged, but no flaps were seen. Due to refractory chest pain and progressively worsening hypotension, the patient was given unfractionated heparin (5000 IU) and underwent an emergency coronary angiography that revealed the presence of critical left main coronary artery ostial stenosis (videos 1 and 2 of the supplementary data). No further lesions were identified. Due to the complexity of the lesion, percutaneous angioplasty under left ventricular assist device was advised. It was necessary to make a multidisciplinary decision due to the patient's condition.

Due to the patient's unstable and worsening hemodynamic condition, a coronary angioplasty using a drug-eluting stent was decided and successfully performed (figure 1, and figure 2). Before the angioplasty was performed, the patient was given a loading dose of ticagrelor 180 mg. The procedure was backed by intracoronary ultrasound (IVUS), which showed good stent positioning and expansion at the end of the procedure (minimum in-stent area of 16 mm²) (videos 3 and 4 of the supplementary data). No signs of coronary artery dissection were reported. After the procedure, the patient was pain-free, and blood pressure levels came back to normal.

The transthoracic echocardiography was repeated, and confirmed a mildly dilated aortic root (40 mm to 41 mm) with apparent posterior wall thickening. The left ventricle was not dilated. The left ventricular ejection fraction was 30%-35% with an apical akinetic area, and anterior, lateral, and posterior walls. The right ventricular function was normal. No significant valvular disease, pericardial effusion or intracardiac masses were reported.

A thoracic computerized tomography scan showed multiple atheromatous aortic calcifications and significant wall thickening, which correlated to aortitis phenomena of syphilitic etiology. The patient remained on dual antiplatelet therapy and completed his antibiotic cycle with penicillin. The patient had favorable cardiovascular progression with gradual improvement of the left ventricular function and was discharged to the neurosurgery unit after 7 days. At 1 month, ticagrelor was withdrawn, and the patient underwent neurosurgery. His neurological recovery was uneventful and after 6 months, left ventricular function was normal.

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Online 11 May 2023.

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