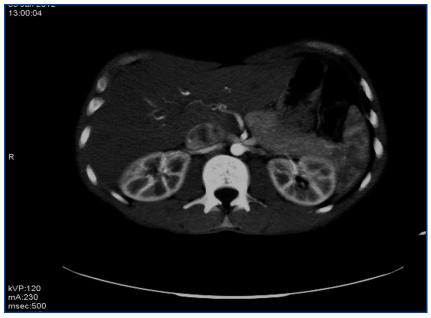

Figure 1. Computed tomography angiography of the abdomen.
Axial maximum intensity projection image showing compression of the renal vein at the level of the superior mesenteric artery.

Figure 2. Computed tomography angiography of the abdomen.
3D volume rendering image showing that the left renal vein is pinched between the two arteries.

ciated with other entities such as IgA glomerulonephritis, although there is no evidence that associates these two conditions.[1-3]

This disease is difficult to diagnose using routine methods. Initially, a haematuria analysis must be carried out in order to rule out other, more common causes. Cystoscopy will reveal unilateral emission of haematuric urine from the left ureter, in the case of macroscopic haematuria. A retrograde venography and angiography with renocaval pressure gradient (difference in pressure between the distal portion of the renal vein and the inferior vena cava) is accepted as the gold standard for establishing a definitive diagnosis of nutcracker syndrome; however, since these are invasive testing methods, there are other diagnostic alternatives, such as CTA scans and 3D reconstructions that also facilitate diagnosis. Depending on the severity of the bleeding, treatment varies between observation and monitoring and surgical techniques for correcting the anatomical anomaly, such as autologous transplantation and left renal vein transposition.[4-5]

In conclusion, given a young patient with haematuria, and negative diagnostic tests suggesting haematuria of a renal origin, we must keep in mind the possibility of this urological pathology.

Conflicts of interest

The authors affirm that they have no conflicts of interest related to the content of this article.

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Manuel Polaina-Rusillo[1], Leticia Liébana-Carpio[2], Josefa Borrego-Hinojosa[1], Antonio Liébana-Cañada[1]

[1] Servicio de Nefrología.
Complejo Hospitalario Ciudad de Jaén.
(Spain).

[2] Servicio de Radiología.
Complejo Hospitalario Ciudad de Jaén.
(Spain).

Correspondence: Manuel Polaina Rusillo
Servicio de Nefrología.
Complejo Hospitalario Ciudad de Jaén.
Extremadura, 2, portal 3, 2º E. 23008 Jaén.
(Spain).
nefropolaina@yahoo.es

Role of transthoracic echocardiography in the screening of thrombi in patients with tunnelled haemodialysis catheters

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To the Editor,

Haemodialysis catheter dysfunction is a complex issue that results in high morbidity rates. Classic studies evaluated the presence of thrombus in catheters using transoesophageal echocardiography.[1] However, never has the role of transthoracic echocardiography been studied as a useful tool in the evaluation of haemodialysis catheters. Poorly functioning tunnelled haemodialysis catheters are usually caused by system thrombosis, probably associated with endothelial damage caused by the continuous rubbing of the catheter tip against the vessel wall or right atrium.[2] The clinical manifestations of this condition are catheter dysfunction due to lumen obstruction, pulmonary embolism, paradoxical systemic embolism, and system superinfection.[3] The majority

of cases involve thrombi that develop insidiously.

The aim of our study was to evaluate the usefulness of transthoracic echocardiography as an initial diagnostic test for detecting thrombi in patients with tunnelled venous catheters for haemodialysis. Eighteen patients (7 female and 11 male) were monitored at our hospital (mean 39.59±38.12 months on haemodialysis), with a mean age of 72.53±18.09 years. Patient characteristics were: hypertension (82.4%), diabetes mellitus (41.2%), dyslipidaemia (17.6%), tobacco use (23.5%), and previous ischaemic heart disease (11.8%). No patients were diagnosed with thrombophilia; 17.6% were receiving antiplatelets and 5.9% were receiving oral anti-coagulants. All patients underwent transthoracic echocardiograms using a Philips iE33 device. Among the echocardiographic findings, left ventricular hypertrophy with preserved left ventricular systolic function and valve calcification stood out (Table 1). We were able to correctly view the tip of the catheter in 14 cases (77.8%), and only 5 patients underwent catheter replacement due to poor functioning (27.8%).

Thrombi in the right atrium were found in a 36-year-old patient (5.6% of the sample), who was asymptomatic and on haemodialysis due to nephrotic syndrome with focal segmental hyalinosis. These findings were confirmed by transoesophageal examination.

Despite the reduced size of our study sample (the vast majority of which were on chronic dialysis with arteriovenous fistulas), the novelty of this study lies in the fact that it is the first time that a non-invasive, low-cost method such as transthoracic echocardiography has been used to visualise catheters and evaluate the presence of thrombi, so as to avoid potentially severe complications in patients with tunnelled haemodialysis catheters. In our study, we were able to correctly visualise the catheter in a high percentage of patients so we recommend echocardiography on a routine basis in patients with chronic haemodialysis catheters. However, further studies with larger sample size would help reinforce the usefulness of this diagnostic technique.

Conflicts of interest

The authors affirm that they have no conflicts of interest related to the content of this article.

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Jeremías Bayón[1], Francisco Torres[2], Sandra Secades[2], María Martín[2]

[1] Servicio de Cardiología. Hospital Universitario Lucus Augusti. Lugo. (Spain).

[2] Servicio de Cardiología. Hospital Universitario Central de Asturias. Oviedo. (Spain).

Correspondence: Jeremías Bayón
Servicio de Cardiología.
Hospital Universitario Lucus Augusti. Lugo. (Spain).
jerebayon@hotmail.com

Table 1. Primary echocardiographic findings

	Echocardiographic measurements
Left atrium (cm²)	18.6±6.2
Left ventricular thickness (mm)	14.4±2.9
LV telesystolic volume	32.6±24.8
LV telediastolic volume	71.7±30.9
Ejection fraction	57.3±14.9
Aortic valve calcium (% patients)	65%
Aortic stenosis (% patients)	29%
Aortic regurgitation (% patients)	35%
Mitral valve calcium (% patients)	71%
Mitral stenosis (% patients)	6%
Mitral regurgitation (% patients)	65%
Right atrium (cm²)	12.4±4.3
RV telediastolic diameter	26.8±6.3
RV telesystolic diameter	18.9±5.1
TAPSE	18.8±5.6
Tricuspid regurgitation (% patients)	41%
Inferior vena cava (mm)	11.1±2.4

TAPSE: Tricuspid Annular Plane Systolic Excursion; RV: right ventricle; LV: left ventricle