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Sclerosing angiomatoid nodular transformation (SANT), a rare splenic tumor with increasing incidence

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INTRODUCTION

Sclerosing angiomatoid nodular transformation (SANT) is a solitary splenic tumor of vascular origin, with an increasing incidence since its description in 2004 (1). Most cases are asymptomatic and the diagnosis is incidental, based on radiological suspicion (Table 1), with no indication for a diagnostic needle biopsy. Splenectomy is recommended when malignancy cannot be ruled out based on radiological characteristics or growth pattern (2), especially in cases with a cancer history (3). It has a benign behavior, requiring neither adjuvant treatment nor specific subsequent surveillance.

CASE REPORT

We present two cases of SANT splenic lesions (Fig. 1). The first case was a 53-year-old male with an incidental splenic finding on a computed tomography (CT) scan requested for coronary assessment, which showed hypointensity and heterogeneous enhancement on magnetic resonance imaging (MRI). The second case was a 56-year-old female with a history of metastatic lung adenocarcinoma, who had a suspicious splenic lesion on a follow-up CT scan, confirmed as

SANT after splenectomy. In both cases, the pathological report described a multinodular, non-encapsulated lesion composed of vascular structures surrounded by fibrous stroma and mixed inflammation without cytological atypia, mitotic activity or necrosis. Both patients underwent minimally invasive splenectomy without surgical morbidity and are currently disease-free (42 and 12 months after surgery, respectively).

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Table 1. Main features of SANT

Main features	*SANT tumor*
Etiology	Unknown
Lineage	Vascular
	Benign behavior
	No recurrences have been reported following splenectomy
Clinical suspicion	Incidental diagnosis on radiological test
	Usually asymptomatic
	Nonspecific abdominal pain associated with growth, splenomegaly
	Spontaneous ruptures have not been described
	Refractory anemia
Epidemiology	More frequent in women (2:1)
	Mean age 50 years
	Possible relation with elevated IgG4
Radiological features	Radial, star-shaped pattern, in “cartwheel” configuration
	Hypodense mass with possible central calcification
	Centripetal filling in dynamic MRI
	No pathognomonic pattern
	May show uptake in PET-CT (inflammatory infiltrate)
Treatment	Surgical (diagnostic splenectomy, to rule out malignancy)
	Oncological surgery
	No specific follow-up required
Differential diagnosis	Metastatic disease
	Cavernous hemangioma
	Angiosarcoma
	Hemangioendothelioma
	Hamartoma
	Lymphoma
	Inflammatory pseudotumor
	Littoral cell angioma

Histopathological features	*Macro:* solitary, well-circumscribed brownish lesion *Micro:* nodules composed of vascular proliferation, separated by fibrous stroma tracts, without atypia, necrosis, or mitotic activity *Immunohistochemistry:* three types of vessels: capillaries [CD34(+)/CD8(-)/CD31(+)], sinusoidal-type vessels [CD34(-)/CD8(+)/CD31(+)], and small veins [CD34(-)/CD8(-)/CD31(+)]

MRI: magnetic resonance imaging; PET-CT: positron emission tomography with computed tomography; SANT: sclerosing angiomatoid nodular transformation.

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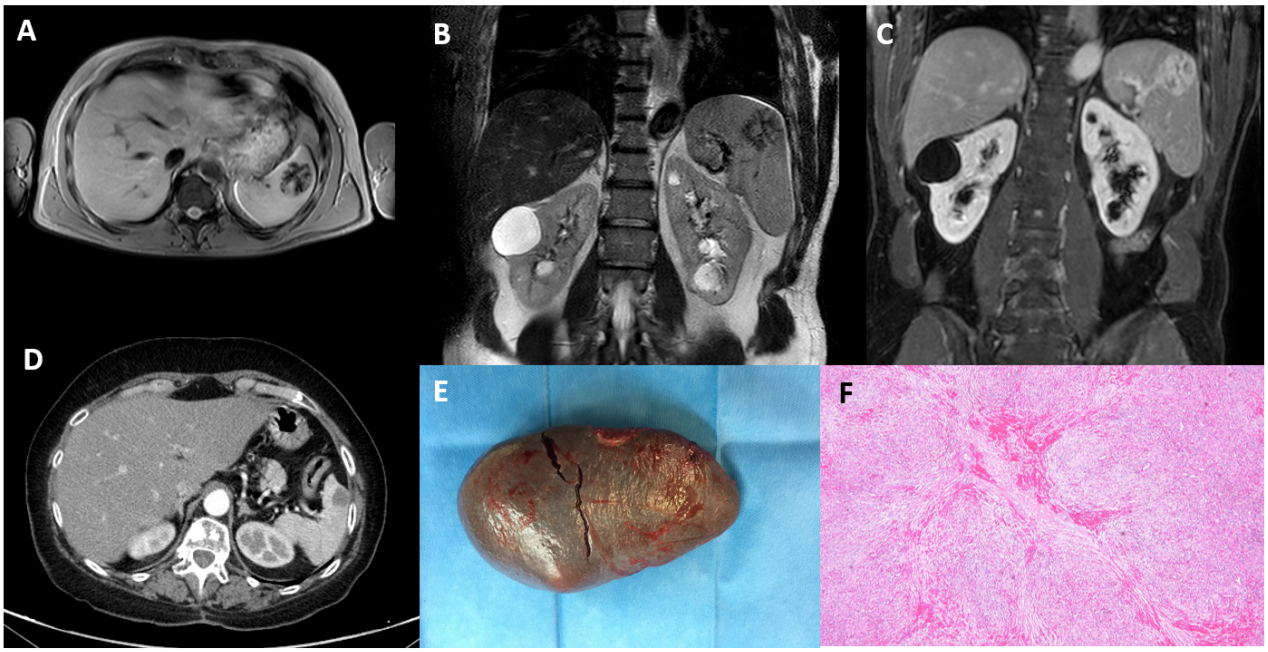

Fig. 1. Radiological and pathological aspects of a SANT tumor. A. Axial cut of T2-weighted GRE magnetic resonance imaging (MRI) sequence showing a markedly hypointense lesion with a heterogeneous appearance (case 1). B. Coronal cut of T2-weighted MRI sequence (case 1) depicting the hypointense and heterogeneous lesion in the upper third of the spleen. C. Coronal cut of an MRI after intravenous contrast administration displaying the characteristic radial aspect resembling a "cartwheel" (case 1). D. Contrast-enhanced arterial phase computed tomography (CT) scan revealing a hypodense lesion with lobulated borders (case 2). E. Surgical specimen from splenectomy highlighting an intraparenchymal nodular lesion in the upper pole (case 1). F. Hematoxylin-eosin staining. Multinodular pattern lesion with nodules separated by fibrous tracts, exhibiting fibroblastic-like cells. The nodules consist of a proliferation of vascular structures with prominent endothelium, accompanied by extravasation of red blood cells and mixed inflammation.