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# The "central stellate scar" sign in renal oncocytoma

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The "central stellate scar" sign is a characteristic radiological finding of renal oncocytoma described in cross-sectional images [1]. It refers to a central zone of fibrous connective tissue, with the bands of fibrosis radiating toward the periphery of the lesion, resembling a star (Fig. 1) [2].

Renal oncocytoma is a benign renal tumor, representing approximately 3–7% of all renal neoplasms [3]. It usually remains asymptomatic, so that its diagnosis is incidental on abdominal imaging. Possible symptoms of a renal oncocytoma include flank pain and hematuria, secondary to cystic change and hemorrhage [1].

Although the central stellate scar is a "classic" description for the sonographic, CT (Fig. 2) and MR imaging appearance of oncocytoma, it is reportedly seen in up to 33% of cases, especially in lesions larger than 2.5 cm in diameter [3]. Thus, its absence does not exclude the diagnosis of oncocytoma [3, 4]. Furthermore, this sign is not pathognomonic. A stellate fibrous core cannot be differentiated on imaging from the central necrosis commonly found in renal cell carcinoma [5]. Pathologic confirmation in a specimen obtained at percutaneous biopsy of renal oncocytoma is often necessary, because a confident preoperative distinction from renal cell carcinoma is not possible [5].

**Fig. 1** Earth's star. Public domain image (https://pixabay.com/it/paesaggio-nebbia-stato-d-animo-2090495/). Accessed 21/12/2018

**Fig. 2** Renal oncocytoma in a 40-year-old man. Axial contrast-enhanced CT image on cortico-medullary phase shows a round, sharply circumscribed, renal lesion (arrow), partially exophytic from the interpolar aspect of the right kidney. The mass is less attenuating than the renal parenchyma, and enhances homogeneously, except for a stellate central area of low density, the "central stellate scar"

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## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interests.

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**Research involving human participants and/or animals** This article does not contain any studies with human participants or animals performed by any of the authors.

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