

Renal lymphangiectasia: incidental finding at multislice computed tomography and literature review*

Linfangiectasia renal: achado incidental em tomografia computadorizada multicorte e revisão da literatura

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Abstract Renal lymphangiectasia is a rare condition characterized by parapyelic and perirenal fluid collections, which may progress from asymptomatic condition to chronic renal failure. The present report describes a case of incidental computed tomography finding of bilateral lymphangiectasia in an asymptomatic patient, as well as the main imaging findings with a comprehensive literature review.

Keywords: Renal lymphangiectasia; Renal lymphangiomatosis; Malformation; Lymphatic system; Kidney; Computed tomography.

Resumo Linfangiectasia renal é uma condição rara, caracterizada por coleções parapiélicas e perirrenais, que pode progredir de assintomática para insuficiência renal crônica. É apresentado um caso de achado incidental em tomografia computadorizada de linfangiectasia renal bilateral em paciente assintomático, com descrição dos principais achados à luz dos métodos de imagem e ampla revisão da literatura.

Unitermos: Linfangiectasia renal; Linfangiomatose renal; Malformação; Sistema linfático; Rim; Tomografia computadorizada.

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INTRODUCTION

Renal lymphangiectasia is a rare, benign disorder of the lymphatic system of the kidneys that generally is incidentally found. The authors present a case of bilateral renal lymphangiectasia incidentally found at computed tomography, with a literature review and description of the main imaging findings.

CASE REPORT

A female, 65-year-old patient arrived at the unit of radiology of Hospital das Forças

Armadas, Brasília, DF, Brazil, complaining of dyspnea. In her clinical history, there was no report of other symptoms, comorbidities or significant family history. Physical examination was normal.

Chest computed tomography was performed and abdominal sections incidentally demonstrated bilateral perinephric and parapyelic cystic lesions with multiloculated appearance and density ranging from 7 to 20 UH (mean = 11 UH) and with no contrast uptake in the corticomedullary and excretory phases. The renal parenchyma was preserved. The parapyelic cysts determined a subtle distortion of the pyelocalyceal system, with no obstructive sign (Figures 1 to 3). Based on the mentioned imaging findings, the diagnosis was characterized as renal lymphangiectasia.

DISCUSSION

Lymphangiectasia is a rare benign malformation involving the lymphatic system of the kidneys⁽¹⁾.

The origin of such disorder is still controversial, but it is believed that the physiopathogenesis is connected with a

failure of the regional lymphatic system in developing communication with the systemic lymphatic tissue⁽¹⁻³⁾.

This condition is found in both men and women at any age range^(2,3). In most cases reported in the literature, the process involves both kidneys, and in general is found incidentally or in patients presenting palpable abdominal masses and/or flank pain⁽⁴⁾.

Most of times, the diagnosis may be reliably achieved with just imaging methods, since the findings of this condition are quite characteristic^(2,3).

At ultrasonography, such lesions are seen as anechoic septated masses with posterior acoustic shadowing, and possible fine echoes or debris in suspension in cases of hemorrhage^(1,3,5). Additionally, hyper-echogenicity may be observed on both kidneys, with loss of the corticomedullary differentiation^(1,4,6).

Computed tomography identifies uni- or multiloculated, thin-walled cystic masses filled by material with fluid attenuation, with no contrast enhancement, possibly compressing the cortex, expanding the renal sinus and distorting the calyceal sys-

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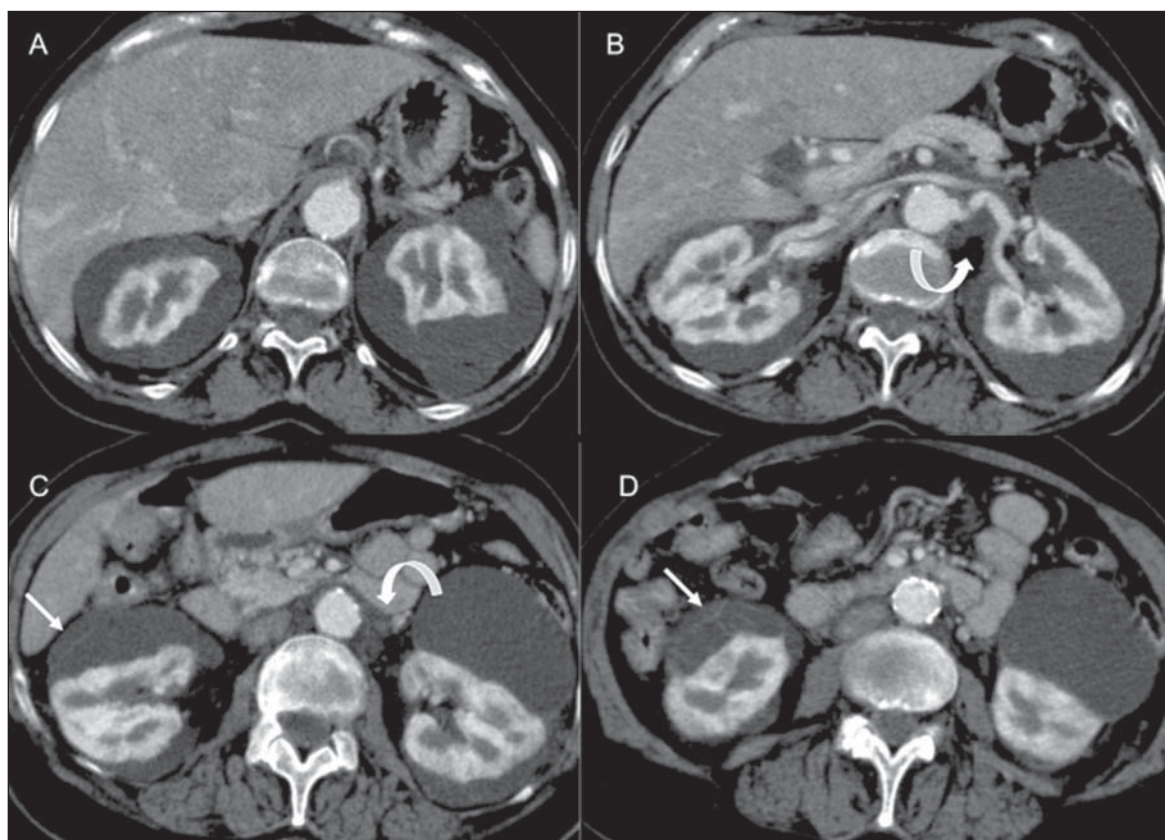


Figure 1. Axial, volumetric images acquired after intravenous iodinated contrast injection, demonstrating voluminous perinephric images, with fine internal septations (straight arrows on **C** and **D**) and extension towards the renal hilum and periaortic space (curved arrows on **B** and **C**).

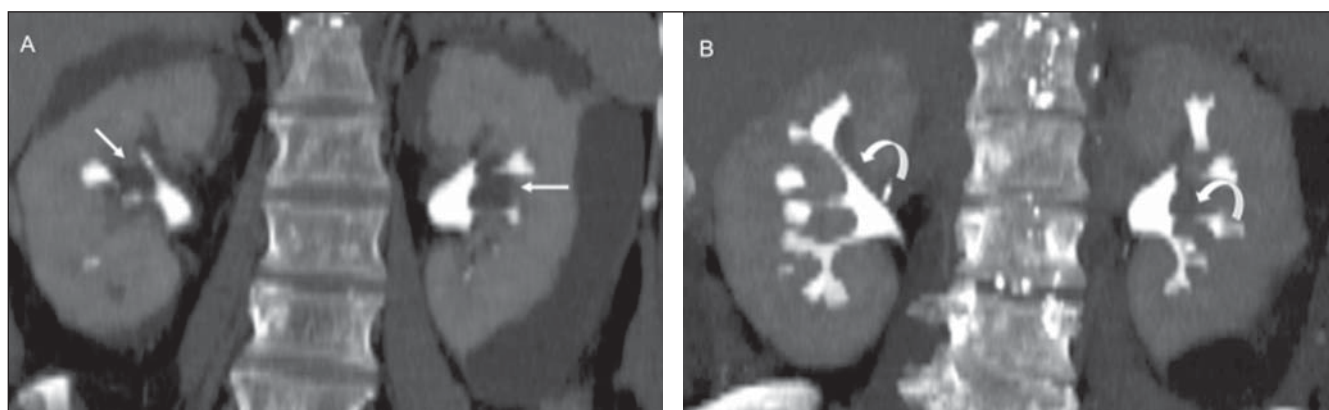


Figure 2. Coronal MIP reformation of sections in excretory phase demonstrating small parapelvic cystic images (straight arrows on **A**) determining subtle elongation and deformity of calyceal groups (curved arrows on **B**).

tem^(1,2,5,6). In the cases of cystic hemorrhage, increased attenuation may be observed. Also, one may visualize renal fasciae thickening⁽¹⁾ and retroperitoneal collections crossing the midline at the level of the renal hilum^(1,2).

At magnetic resonance imaging, hypointense lesions are visualized on T1-weighted sequences and hyperintense le-

sions on T2-weighted sequences. In cases of hemorrhage, foci of hyposignal intensity may be seen within the cysts on T1-weighted sequences. Also, cortical hyper-signal and relative medullary hyposignal on T2-weighted sequences. It is suggested that such pattern of corticomedullary inversion visualized only on T2-weighted images could be a result of renal edema/congestion

secondary to the lymphatic obstruction, also explaining the hyperechogenicity and loss of corticomedullary differentiation at ultrasonography^(1,3).

Several hypotheses may be considered in the differential diagnosis. Abscess or urinoma can be differentiated with basis on the clinical history by eventual enhancement or contrast agent extravasation origi-

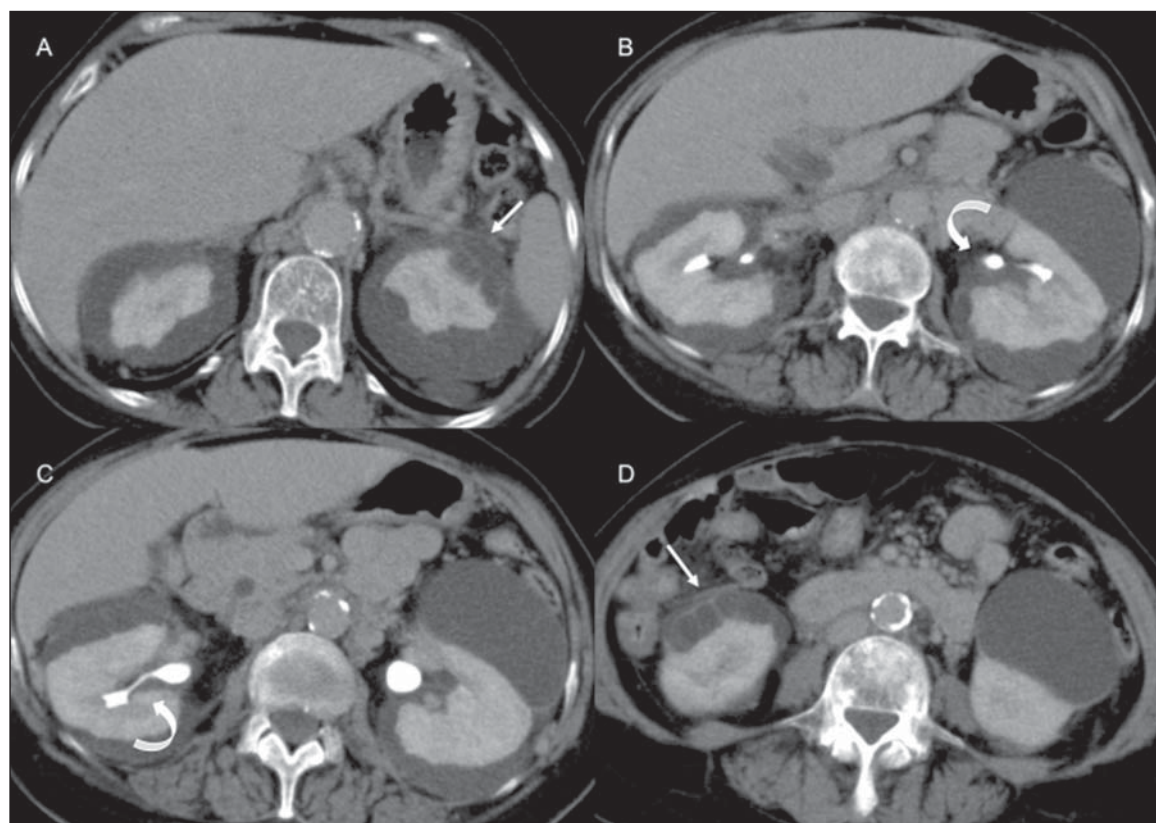


Figure 3. Axial sections in excretory phase demonstrating irregularity of the renal cortical contour bilaterally, in association with several septated perinephric (straight arrows on **A** and **D**) and parapyelic cystic images with calyceal elongation (curved arrows on **B** and **C**).

nating from the calyceal system^(3,4). Hereditary polycystic renal disease presents multiple cysts predominantly the renal cortex, besides most commonly determining changes in the renal function and involvement of other organs^(1,2,4). Lymphomas and other malignancies can be differentiated for affecting the cortical renal parenchyma, by their soft parts attenuation and eventual contrast enhancement^(1,2).

Despite the well defined clinical/radiological findings, the natural history of this disease still remains uncertain⁽²⁾. There are reports of cases where the disease was incidentally diagnosed and did not present loss of renal function over the follow-up period^(1,4). However, rare cases have progressed to chronic renal failure. Another relevant situation is the occurrence of lymphangiectasia during gestation, with deterioration of the renal function and arterial hypertension, similarly to signs and symp-

toms of preeclampsia, with post-delivery reversion.

Other complications described in the literature were superimposed infection, intracystic hemorrhage⁽⁴⁾, severe and prolonged arterial hypertension⁽⁷⁾, obstructive uropathy⁽⁵⁾ and renal vein thrombosis⁽⁸⁾.

Since most patients are asymptomatic, no treatment is usually required^(1,3). However, considering the possibility of progression to chronic renal failure and complications, clinical and imaging follow-up must be periodically performed^(4,5,8). Additionally, female patients in childbearing age should be guided on the risks during gestation⁽⁴⁾. For the great majority of asymptomatic patients with large fluid collections, percutaneous drainage may be utilized as a conservative treatment, with surgery remaining reserved for cases of recurrence and complicated or uncontrollable collections^(1,3-5).

REFERENCES

1. Rastogi R, Rastogi V. Computed tomographic scan in the diagnosis of bilateral renal lymphangiectasia. *Saudi J Kidney Dis Transpl.* 2008;19:976-9.
2. Ramseyer LT. Case 34: renal lymphangiectasia. *Radiology.* 2001;219:442-4.
3. Mani NB, Sodhi KS, Singh P, et al. Renal lymphangiomas: a rare cause of bilateral nephromegaly. *Australas Radiol.* 2003;47:184-7.
4. Özmen M, Deren Ö, Akata D, et al. Renal lymphangiomas during pregnancy: management with percutaneous drainage. *Eur Radiol.* 2001;11:37-40.
5. Chiu JS, Wu CJ, Sun GH, et al. Obstructive uropathy associated with bilateral renal lymphangiomas. *Nephrol Dial Transplant.* 2004;19:2923.
6. Varela JR, Bargiela A, Requejo I, et al. Bilateral renal lymphangiomas: US and CT findings. *Eur Radiol.* 1998;8:230-1.
7. Lindsey JR. Lymphangiectasia simulating polycystic disease. *J Urol.* 1970;104:658-62.
8. Riehl J, Schmitt H, Schäfer L, et al. Retroperitoneal lymphangiectasia associated with bilateral renal vein thrombosis. *Nephrol Dial Transplant.* 1997;12:1701-3.