Urological Science 27 (2016) 51–52

Contents lists available at ScienceDirect

Urological Science

journal homepage: www.urol-sci.com

Practical Uroradiology

Renal leiomyomas

Jia-Hwia Wang [a, b, c, *]

[a] Department of Radiology, Cheng Hsin General Hospital, Taipei, Taiwan
[b] Department of Radiology, Taipei Veterans General Hospital, Taipei, Taiwan
[c] School of Medicine, National Yang-Ming University, Taipei, Taiwan

ARTICLE INFO

Article history:
Received 6 November 2014
Accepted 18 November 2014
Available online 23 January 2015

Keywords:
computed tomography
magnetic resonance imaging
kidney
leiomyoma

1. Introduction

Renal leiomyomas are benign renal tumors, most of which are asymptomatic. With the widespread use of cross-section imaging, the detection of clinically asymptomatic renal leiomyomas is increasing. Although definite diagnosis should depend on histopathological examination, radiologists should be familiar with the imaging of renal leiomyomas to suggest their possible presence.

2. Case Report

A 46-year-old man visited a hospital complaining of left flank pain 2 months earlier. Sonography and computed tomography (CT) of the abdomen were performed. CT of the kidneys revealed a protruding tumor mass measuring 7.8 cm × 7.4 cm × 7.0 cm in the lower pole of the right kidney; it showed central density and irregular marginal high density in the precontrast CT scan and marginal contrast enhancement and central low density of this tumor in the postcontrast CT scan (Fig. 1). A small stone in the upper third of the left ureter, causing mild left hydronephrosis and mild left proximal hydroureter, was also noted. Because of the presence of the right renal tumor, he visited our hospital for a second opinion and was admitted for further investigation. After admission, physical and laboratory examination results were normal. Left ureteroscopic lithotripsy and right nephrectomy were performed. Pathological examination revealed the right renal tumor to be a renal leiomyoma. The postoperative course was uneventful. The patient was discharged in a stable condition, and outpatient department follow-up was recommended.

3. Discussion

Renal leiomyomas are benign tumors originating from the smooth muscle cells of the renal capsule, pelvis, calyces, or blood vessels. They may be subcapsular (53%), capsular (37%), or renal pelvic (10%). They frequently occur in women and in the 2nd–5th decades of life. They occur in both kidneys with equal frequency and predominantly occur in the lower pole. Most are asymptomatic and tend to be found incidentally. In a few cases, the clinical presentations include palpable mass, abdominal and flank pain, and hematuria.[1,2]

The CT findings of renal leiomyomas have been reported to include hyperdensity compared with the adjacent normal renal parenchyma in precontrast CT, lower contrast enhancement than the adjacent normal renal parenchyma, peripheral location without involvement of the renal cortex, and well-defined margins.[1,3–5] Magnetic resonance imaging findings include isointensity on T1-weighted images, hypointensity on T2-weighted images, and less hetero- or homogeneous enhancement than the adjacent normal renal parenchyma.[3,6] The tendency for continuous contrast enhancement was described previously by Cong et al.[6]

The CT findings of our case were different from the reported cases, probably because the renal leiomyoma in our case might have aroused from a blood vessel. The imaging of renal leiomyomas that originate from different structures of the kidney may vary. More cases are necessary to explore this suggestion further.

Treatment includes watchful waiting or partial or total nephrectomy. Although definite diagnosis should depend on histopathological examinations, imaging can suggest the possibility of renal leiomyomas.

* Department of Radiology, Cheng Hsin General Hospital, 45 Cheng Hsin Street, Beitou, Taipei 112, Taiwan.
E-mail address: wangjh@vghtpe.gov.tw.

http://dx.doi.org/10.1016/j.urols.2014.11.005

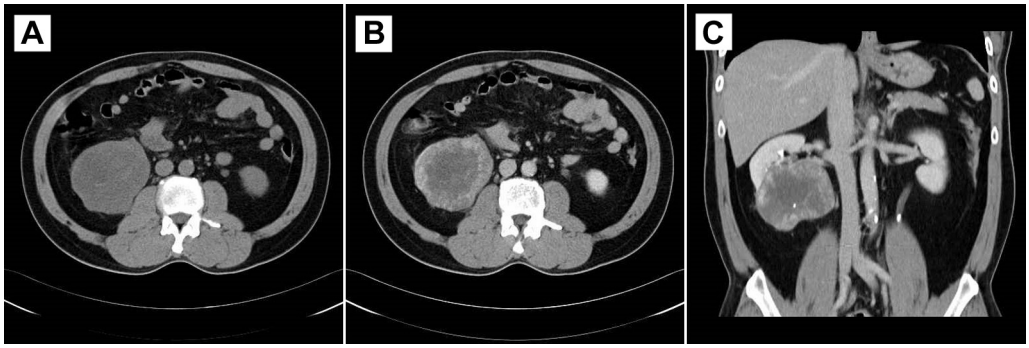

Fig. 1. Renal leiomyoma. (A) Axial noncontrast computed tomography reveals a protruding mass measuring 7.8 cm × 7.4 cm × 7 cm in size in the lower pole of the right kidney, which shows a central low density and irregular marginal high density. (B) Axial and (C) coronal contrast-enhanced computed tomography reveals marginal contrast enhancement and central low density of this tumor.

Conflicts of interest

The authors declare that they have no financial or non-financial conflicts of interest related to the subject matter or materials discussed in the manuscript.

Sources of funding

No funding was received for the work described in this article.

References

1. Steiner M, Quinlan D, Goldman SM, Millmond S, Hallowell MJ, Stutzman RE, et al. Leiomyoma of the kidney: presentation of 4 new cases and the role of computerized tomography. *J Urol* 1990;**143**:994–8.
2. Ko SF, Ng SH, Tsai CC, Lo SW. Cortical renal leiomyoma with extension to renal pelvis. *Abdom Imaging* 1994;**19**:70–1.
3. Derchi LE, Grenier N, Heinz-Peer G, Dogra V, Franco F, Rollandi GA, et al. Imaging of renal leiomyomas. *Acta Radiol* 2008;**49**:833–8.
4. Nagar AM, Raut AA, Narlawar RS, Bhatgadde VL, Rege S, Thapar V. Giant renal capsular leiomyoma: study of two cases. *Br J Radiol* 2004;**77**:957–8.
5. Wagner BJ, Wong-You-Cheong JJ, Davis Jr CJ. Adult renal hamartomas. *Radiographics* 1997;**17**:155–69.
6. Cong Z, Gong J, Wang Y. Radiological findings of renal leiomyomas: a report of five surgically confirmed cases. *Abdom Imaging* 2011;**36**:604–8.