

of invasiveness. There was moderate but inhomogeneous enhancement, suggesting the diagnosis of malignancy. Based on the MDCT findings the preoperative histologic characterization of the neoplasm was extremely difficult. Renal malignancies, like RCC, lymphoma, and other uncommon tumors, e.g. sarcoma, were included in the differential diagnosis.

It is known that imaging cannot predict the histology of a renal mass, although the presence of heterogeneous and significant enhancement on CT should suggest the preoperative diagnosis of a conventional RCC [9, 10]. The major question to be answered with cross-sectional imaging modalities (either CT or MRI) is whether a renal mass represents a surgical or non-surgical lesion. The most important criterion used in this differentiation is mass enhancement, and any enhancing solid renal lesion should be considered a possible renal tumor, as in our patient.

Shirikhoda and Lewis [6] described the CT (on conventional CT scanners) and angiographic features in 4 cases

of advanced-stage SRCCs, detected as soft-tissue density, hypervascular masses, originating from the renal parenchyma. The differentiation from RCC in these cases was not possible, as was also the case in our patient [6]. The same group of authors suggested the preoperative diagnosis of renal sarcoma in the presence of a tumor arising from the renal capsule or the renal sinus, appearing hypovascular or avascular on angiography [6]. Our case was neither capsular in origin, nor avascular. Based on our findings, the presence of heterogeneous enhancement on imaging should suggest an aggressive nature of renal malignancies preoperatively.

Acknowledgement

The authors acknowledge Prof. Stavros C. Efremidis for his instructive comments.

References

- 1 Cangiano T, Liao J, Naitoh J, Dorey F, Figlin R, Belldgrun A: Sarcomatoid renal cell carcinoma: biologic behaviour, prognosis, and response to combined surgical resection and immunotherapy. *J Clin Oncol* 1999;17:523–528.
- 2 Lin L, Teichberg S, Steckel J, Chen Q: Sarcomatoid renal cell carcinoma with divergent sarcomatoid growth patterns. A case report and review of the literature. *Arch Pathol Lab Med* 2005;129:1057–1060.
- 3 Cheville JC, Lohse CM, Zincke H, Weaver AL, Leibovich BC, Frank I, Blute ML: Sarcomatoid renal cell carcinoma. An examination of underlying histologic subtype and an analysis of associations with patient outcome. *Am J Surg Pathol* 2004;28:435–441.
- 4 De Peralta-Venturina M, Moch H, Amin M, Tamboli P, Hailemariam S, Mihatsch M, Javidan J, Sticker H, Ro JY, Amin MB: Sarcomatoid differentiation in renal cell carcinoma. A study of 101 cases. *Am J Surg Pathol* 2001;25:275–284.
- 5 Goessl C, Muller M, Heicappell R, Perez-Canto A, Miller K: Long-term survival after surgery for recurrent advanced sarcomatoid renal carcinoma. *BJU Int* 1999;84:888–889.
- 6 Shirikhoda A, Lewis E: Renal sarcoma and sarcomatoid renal cell carcinoma: CT and angiographic features. *Radiology* 1987;162:353–357.
- 7 Wong JA, Whelan T, Morse M: Radical nephrectomy with en bloc resection of liver, diaphragm, and lung for locally invasive sarcomatoid renal cell carcinoma. *Urology* 2006;68:890.e1–890.e4.
- 8 Farrow GM, Harrison EG, Utz DC: Sarcomas and sarcomatoid and mixed malignant tumors of the kidney in adults. Part III. *Cancer* 1968;22:556–563.
- 9 Sheth S, Scatarige JC, Horton KM, Corl FM, Fishman EK: Current concepts in the diagnosis and management of renal cell carcinoma: role of multidetector CT and three-dimensional CT. *Radiographics* 2001;21:S237–S254.
- 10 Kim JK, Kim TK, Ahn KJ, Kim CS, Kim KR, Cho KS: Differentiation of subtypes of renal cell carcinoma on helical CT scans. *AJR Am J Roentgenol* 2002;178:1499–1506.

Erratum

The name of one of the authors was misspelled in the article: Split technique in horseshoe kidney transplantation. *Urol Int* 2006;77:6–8.

The correct name is Ricardo Miyaoka, instead of 'Myiaoka'.