

Sarcomatoid Carcinoma of Kidney: Case Report

Yddoussalah O*, Touzani A, Karmouni T, Elkhader K, Koutani A and IBN Attya Andaloussi A

Department of Urology B, Mohamed V University, Morocco

*Corresponding author: Othmane Yddoussalah, Department of Urology B, CHU Ibn Sina, Faculty of Medicine and Pharmacy, Mohamed V University, Rabat, Morocco, Tél : 0021268517870; Email: yddoussalah.urob@gmail.com

Submission: 📅 December 24, 2017; Published: 📅 January 18, 2018

Abstract

Sarcomatoid renal carcinoma is a rare and aggressive variant of the cancer of the kidney. This tumor are indifferenciated and originates from all renal cell carcinomas. The diagnosis is exclusively histologic and therapeutic modalities are limited to radical nephrectomy. We report a new case and will discuss diagnosis, therapeutic and prognostic characteristics of this rare and aggressive entity.

Keywords: Sarcomatoid carcinoma; Kidney; Prognosis; Surgery

Introduction

The term sarcomatoid renal cell carcinoma was introduced by Farrow in 1968, who studied 38 cases of kidney tumors with a double contingent of malignant cells: a carcinomatous component and a pleomorphic undifferentiated component of sarcomatoid-like cells [1]. The classification of tumors with features of "carcinoma" and "sarcoma" has been debated since Virchow in 1864, which initiated the term carcinosarcoma [2]. It is currently accepted that sarcomatoid carcinomas of the kidney are not a distinct histological entity, but may develop from all histological subtypes of renal cell carcinomas, as proposed in the WHO 2004 classification [3,4]. Sarcomatoid transformation of renal cell carcinoma seems uncommon (1 to 15%), which explains the low number of series in the literature.

From its description, the pejorative prognosis of the sarcomatoid contingent has been clearly established with respect to conventional renal cell carcinoma [2]. The aim of this article was to carry out a review based on the recent literature of epidemiological, clinical-biological, prognostic and therapeutic sarcomatoid carcinomas of the kidney.

Observation

Mr. K.S, 70 years old, with no pathological history. She complained for four months of low back pain associated with a single episode of hematuria, without other urinary disorders, or digestive associated. On clinical examination, the patient was afebrile. A mass was palpated at the left flank extending 4cm below the costal margin, solid consistency. Computed tomography showed a higher mass of the 14cm long axis, which had a tissue density, which increased in an inhomogeneous manner after injection of the contrast medium. This mass shows a renal pedicle break-in and invasion of the renal pedicle (Figure 1). In view of the suspicion of invasion of the renal pedicle, a magnetic resonance

imaging supplement was performed to show an aggressive renal process with thrombotic material occupying the left renal vein with the IVC is free (Figure 2). The surgical approach was left sub costal. After detachment of the left colic angle at the exploration we discovered a voluminous tumor adherent to the adjacent structure and in particular the adrenal We had proceeded to a left enlarged nephrectomy, before the invasion of the left renal vein an extraction of the thrombus tumor by veinotomy was realized. On gross examination, the nephrectomy piece, measuring 18 x 13 x 8cm and weighing 1kg, found a 13cm beige-white tumor infiltrating perirenal fat. It is the site of extensive tumor necrosis estimated at 60% of the tumor area. The vein lumen is filled by a tumor thrombus. Microscopic examination revealed a malignant tumor proliferation made of fusiform cells, arranged in intersecting bundles associated with numerous figures of mitosis. Presence of pure-tumor vascular emboli (Figure 3). This morphological analysis concluded Furhman's nuclear grade 4 sarcomatoid carcinoma. Class pT3aNx.

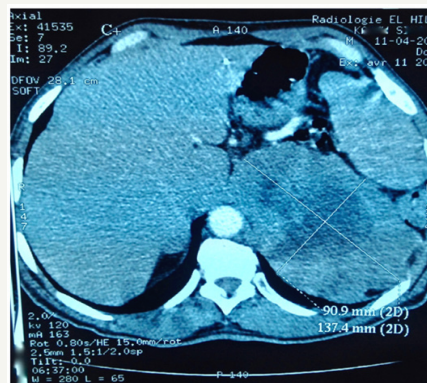


Figure 1: Tomodensitometric section showing superior polar mass of the left kidney with injection of the heterodense contrast medium. This process measures 140x83mm of large and necrotic zone seat.

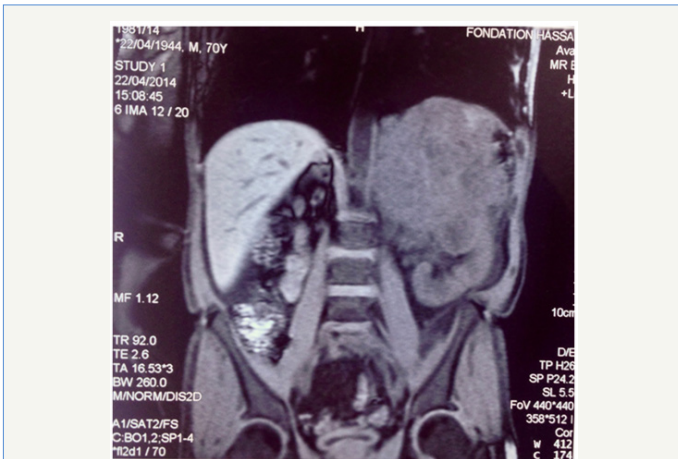


Figure 2: Sagittal magnetic resonance imaging showing a left renal process, infiltrating the renal sinus and the renal pedicle. The VCI remains free and of normal caliber.

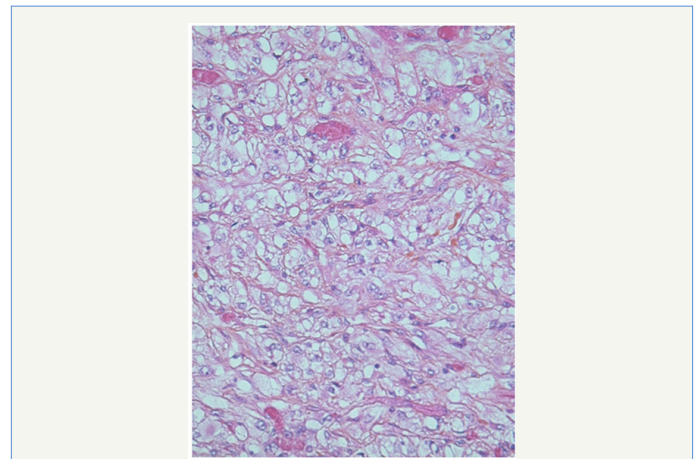


Figure 3: Histological aspect (HES, x 400): mixed appearance with the tumor is made of fusiform cells sometimes irregular nucleus.

Discussion

Sarcomatoid carcinoma of the kidney is a rare variant of kidney cancer. Its incidence in contemporary studies is estimated to be between 1 and 13% of all renal tumors [5]. The median age of these patients, between 55 and 60 years of age (32-87 years), was comparable to renal cell carcinomas without sarcomatoid transformation [6,7].

The sex ratio did not seem not different with about twice as many men as women. Sarcomatoid kidney carcinomas were frequently

found on clinical signs (85 to 90% of cases after the series), whereas renal carcinomas without sarcomatoid differentiation with more than 50% chance of discovery [2,8-10]. The most common symptoms were lower back pain or hematuria. Microscopically It is about bulky masses, with numerous haemorrhagic and necrotic foci. This tumor often extends into the perirenal fat and invades the vessels of the hilum. Sarcomatoid carcinoma is a very aggressive, discovery often at an advanced stage of the TNM classification of kidney cancer. Below the detailed TNM classification for kidney cancer variant (Table 1).

Table 1: TNM staging of renal cell carcinoma.

Primary Tumor (T)				
TX		Primary tumor cannot be assessed		
T0		No evidence of primary tumor in the kidneys		
T1		Tumor ≤7cm in greatest dimension, limited to the kidneys		
	T1a	Tumor ≤4cm in greatest dimension, limited to the kidneys		
	T1b	Tumor >4cm but not >7cm in greatest dimension, limited to the kidneys		
T2		Tumor >7cm in greatest dimension, limited to the kidneys		
	T2a	Tumor >7cm but not >10cm in greatest dimension, limited to the kidneys		
	T2b	Tumor >10cm in greatest dimension, limited to the kidneys		
T3		Tumor extends into major veins or perinephric issues, but does not invade the adrenal gland or spread beyond Gerota’s fascia		
	T3a	Tumor extends into renal veins or its muscles or perirenal and/or renal sinus fat, but not beyond Gerota’s fascia		
	T3b	Tumor grossly extends into vena cava below the diaphragm		
	T3c	Tumor grossly extends into vena cava above the diaphragm or invades the wall of the vena cava		
T4		Tumor invades beyond Gerota’s fascia and extends into the contiguous adrenal gland		
Regional lymph nodes (N)				
NX		Regional lymph nodes cannot be assessed		
N0		No regional lymph nodes metastasis		
N1		Metastasis to regional nodes		
Stage Grouping				
Stage 1		T1	N0	M0
Stage 2		T2	N0	M0

Stage 3	T1	N1	M0
	T2	N1	M0
	T3a	N0-N1	M0
	T3b	N0-N1	M0
	T3c	N0-N1	M0
Stage 4	T4	Any N	M0
	Any T	Any N	M0
	Any T	Any N	M1

Sarcomatoid carcinoma of the kidney is frequently found in a metastatic stage. The usual sites of sarcomatoid carcinoma metastases are the lung, bone, liver, ganglia, and brain [8,11]. Microscopically, it is a mixed-component tumor, comprising varying degrees of pseudo-sarcomatous elements and malignant epithelial elements [12]. The sarcomatoid beaches are sometimes so dense that it is difficult to assert the epithelial nature of the

lesion. It is therefore necessary to multiply the cutting plans. Immunohistochemicals can be of great help in these cases since tumor cells express cytokeratin in 94% of cases, EMA in 50% of cases and vimentin in 56% of cases [6]. Cytologically, they are classified into Fuhman 4 nuclear grade. We find below the complete Fuhman grading of kidney cancer (Table 2).

Table 2: Complete Fuhman grading of kidney cancer.

Grade	Nuclei		Nucleoli
	Size (µm)	Shape	
1	10	Round, Uniform	Inconspicuous or absent
2	15	Slightly irregular	Evident at high power (X400 magnification)
3	20	Obviously irregular	Prominent, large at low power (X100 magnification)
4	>20	Bizzare, Often multilobed	Heavy chromatin clump

Numerous composite morphologic and nuclear grading systems have been proposed for RCC and although that of the Fuhman classification have achieved widespread usage, the validity of the grading criteria of this classification has been questioned. In addition, there are few studies that have attempted to validate the Fuhman system for RCCs beyond that of the clear cell subtype. Recent studies have indicated that grading of papillary RCC should be based on nucleolar prominence alone and that the components of the Fuhman grading classification do not provide prognostic information for chromophobe RCC.

are ongoing (gemcitabine-sunitinib), (gemcitabine-capecitabine-Bevacizumab)

Conclusion

Sarcomatoid carcinoma of the kidney is not a distinct histological entity, but is derived from all renal cell carcinomas. The natural evolution of these kidney tumors is formidable with a poor spontaneous prognosis of this tumor. Currently In the absence of a recommendation, the management of sarcomatoid carcinoma of the kidney should be that of renal cell carcinoma at high risk.

Consent of Patients

Written informed consent was obtained from the patient's next of kin for publication of this case report and any accompanying images.

References

1. Farrow GM, Harrison Jr EG, Utz DC, ReMine WH (1968) Sarcomas and sarcomatoid and mixed malignant tumors of the kidney in adults. *I Cancer* 22(3): 545-550.
2. Chao D, Zisman A, Freedland SJ, Pantuck AJ, Said JW, et al. (2001) Sarcomatoid renal cell carcinoma: basic biology, clinical behavior and response to therapy. In *Urologic Oncology: Seminars and Original Investigations*. *Uro Onco* 6(6): 231-238.
3. Compérat E, Camparo P, Vieillefond A (2006) WHO classification 2004: tumors of the kidneys. *Journal de radiologie* 87(9): 1015-1024.
4. Lopez-BA, Scarpelli M, Montironi R, Kirkali Z (2006) 2004 WHO classification of the renal tumors of the adults. *European urology* 49(5): 798-805.



5. Mian BM, Bhadkamkar N, Slaton JW, Pisters PW, Daliani D, et al. (2002) Prognostic factors and survival of patients with sarcomatoid renal cell carcinoma. *The Journal of urology* 167(1): 65-70.
6. de Peralta-V, Moch M, Amin H, Tamboli M, Hailemariam P, et al. (2001) Sarcomatoid differentiation in renal cell carcinoma: a study of 101 cases. *The American journal of surgical pathology* 25(3): 275-284.
7. Pal SK, Jones JO, Carmichael C, Saikia J, Hsu J, et al. (2013) Clinical outcome in patients receiving systemic therapy for metastatic sarcomatoid renal cell carcinoma: A retrospective analysis. In *Urologic Oncology: Seminars and Original Investigations* 31(8): 1826-1831.
8. Golshayan AR, George S, Heng DY, Elson P, Wood LS, et al. (2009) Metastatic sarcomatoid renal cell carcinoma treated with vascular endothelial growth factor-targeted therapy. *Journal of Clinical Oncology* 27(2): 235-241.
9. Shush B, Breathlessly G, Shih J, Courante S, Finley D, et al. (2012) Impact of pathological tumour characteristics in patients with sarcomatoid renal cell carcinoma. *BJU international* 109(11): 1600-1606.
10. Ljungberg B, Campbell SC, Cho HY, Jacqmin D, Lee JE, et al. (2011) The epidemiology of renal cell carcinoma. *Européan urology* 60(4): 615-621.
11. Shuch B, Said J, La Rochelle JC, Zhou Y, Li G, et al. (2009) Cytoreductive nephrectomy for kidney cancer with Carcinomes rénaux à contingent sarcomatoïde 437 sarcomatoid histology-is up-front resection indicated and, if not, is it avoidable? *J Urol* 182: 2164-2171.
12. Chevillat JC, Lohse CM, Zincke H, Weaver AL, Leibovich BC, et al. (2004) Sarcomatoid renal cell carcinoma: an examination of underlying histologic subtype and an analysis of associations with patient outcome. *The American journal of surgical pathology* 28(4): 435-441.
13. Ljungberg B, Cowan NC, Hanbury DC, Hora M, Kuczyk MA, et al. (2010) EAU guidelines on renal cell carcinoma: the 2010 update. *European urology* 58(3): 398-406.
14. Patard JJ, Baumert H, Correas JM, Escudier B, Lang H, et al. (2010) Recommendations Onco-Urology 2010: Kidney cancer. *Prog Urol* 20(Suppl4): S319-339.
15. Haas NB, Lin X, Manola J, Pins M, Liu G, et al. (2012) A phase II trial of doxorubicin and gemcitabine in renal cell carcinoma with sarcomatoid features: ECOG 8802. *Medical Oncology* 29(2): 761-767.