

## Chromophobic Renal Carcinoma with Liposarcomatous Component: A Case Report

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### Abstract

Chromophobic renal carcinoma is a rare subtype of RCC, usually seen in the fifth decade and accounts for 5% of kidney tumors. The incidence of this type of tumor is more increased in women than in men. The majority of chromophobic carcinomas are diagnosed at an early stage, and they have a good prognosis compared to other malignant kidney tumors. We report in this article a case of renal carcinoma with chromophobic cells with a lipoma sarcomatous component.

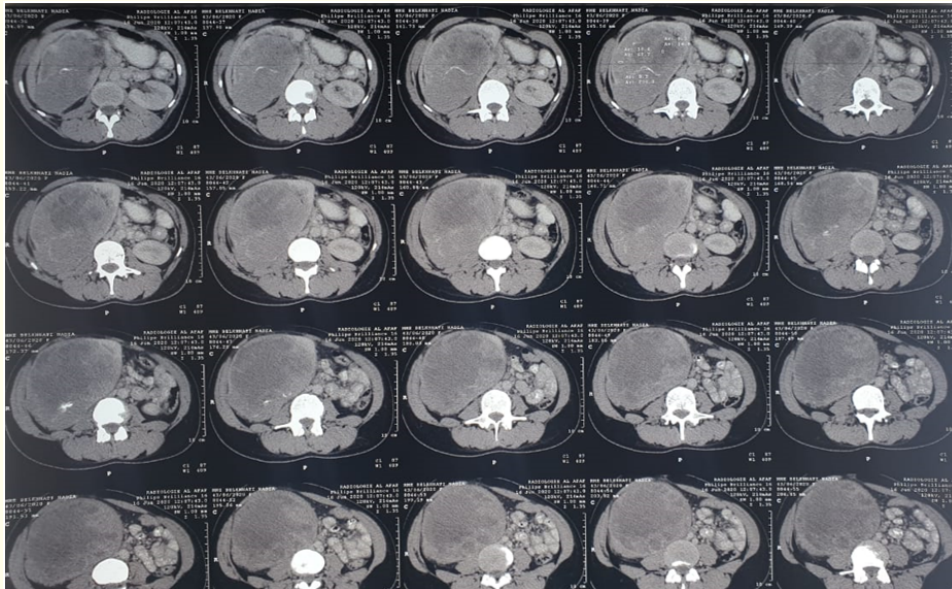
**Keywords:** *Chromophobic Renal Carcinoma; Liposarcomatous; Kidney Tumors*

### Introduction

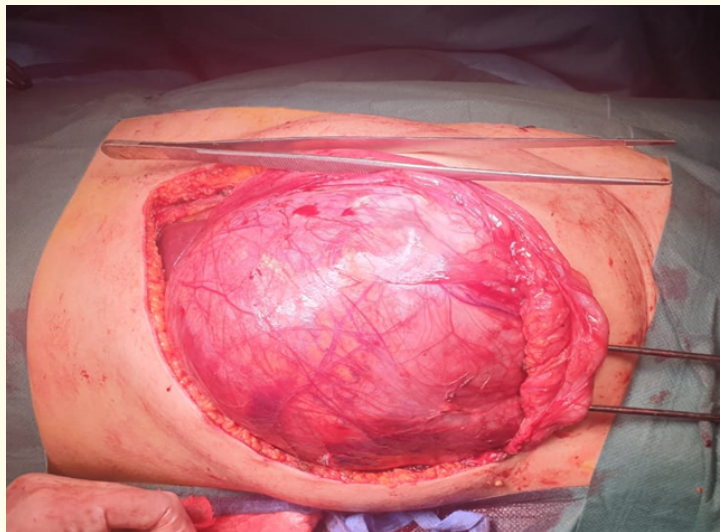
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### Clinical Case

Mrs. F.D, 54 years old, with no medical history. She had complained for six months of right back pain radiating to the umbilicus and the right thigh, with no associated urinary or digestive disorder. On clinical examination, the patient was afebrile. His conjunctivae were normally stained and his abdomen was supple, distended, with palpation of a large mass in the right flank, movable relative to the skin plane. The lymph node areas were free. Pelvic touches were normal. Computed tomography revealed a very large heterogeneous mixed tumor with an encapsulated appearance that did not seem to invade the perirenal fat containing calcifications, the injection of contrast product revealed heterogeneous contrast enhancement of the fleshy part, the internal edges of which are irregular. There was no invasion of the renal vein or the inferior vena cava (Figure 1). No lymphadenopathy visible on this examination. Biologically, the patient had a hemoglobin level of 12 g/dl, leukocytes at 5700/mm<sup>3</sup>, normal renal function with a creatinine level of 8.37 mg/L. The patient underwent an enlarged total nephrectomy via the right subcostal approach. The exploration objectified a large tumor (Figure 2), with intimate relationships with the renal pedicle. The operative consequences were simple. On gross examination, the piece weighed 2482g, measuring 20 x 18 x 18 cm, the mass was soft, encapsulated in appearance and yellowish in color when cut (Figure 3). The microscopic examination revealed a largely necrotic infiltrating tumor proliferation with a double component, a predominant sarcomatous component composed of pleomorphic lipoblast plaques, the second component is in the minority and made of a few carcinomatous clusters composed of large cells, the cytoplasm was sometimes eosinophilic, sometimes clarified. An immunohistochemical study was carried out, showed that the liposarcomatous component was positive for PS100, negative for CK7, CKE1/AE3, for desmin and for myogenin. The carcinomatous com-

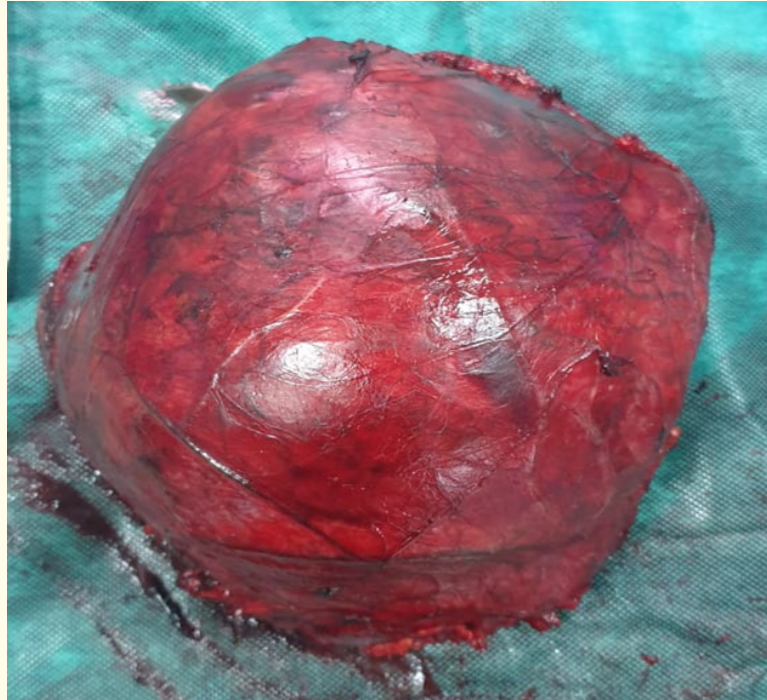


**Figure 1:** CT aspect of a large encapsulated tumor, mixed, with heterogeneous contrast enhancement of the fleshy part.



**Figure 2:** Intraoperative aspect of the large mass.

ponent was positive for CK7 and for CKAE1/AE3. This histological analysis concluded in a chromophobic carcinoma of the kidney with an important liposarcomatous component, absence of vascular embolus, renal capsule, perirenal fat, non-tumor hilum and adrenal gland, non-tumor ureteral and vascular limits.



**Figure 3:** Appearance of the tumor after surgical removal.

## Discussion

Chromophobic renal carcinoma was first described in 1985, by Thoenes., *et al.* It accounts for around 5% of renal cancers [1]. Smoking and obesity are risk factors for chromophobic kidney cancer [2]. It is a tumor that preferentially affects the female sex at a younger age than other types of renal carcinoma [3]. Clinically, they are most often asymptomatic and discovered incidentally during abdominal imaging for various indications. The clinical signs are gross hematuria, low back pain and lumbar fossa mass syndrome. The median tumor size is on average 6.0 cm and it is larger than that of the other subtypes [4]. The presence of clinical signs is often synonymous with a larger and more advanced tumor.

Several studies have shown, directly or indirectly, the less aggressive nature of chromophobic renal carcinoma [5-8]. Even in the context of metastatic disease, chromophobic carcinoma has a better prognosis than tubulopapillary carcinoma, and a prognosis similar to clear cell renal carcinoma [9], an American study has shown that there are factors of risks of aggression linked to this type of tumor, such as size greater than 7 cm, presence of vascular emboli, presence of tumor necrosis, and the presence of a sarcomatous component [10].

In computed tomography, renal carcinomas with chromophobic cells take up the contrast homogeneously, whereas in clear cell carcinomas, papillary carcinomas and carcinomas of the collecting tubes, contrast uptake is peripheral and heterogeneous [11]. On the other hand, in magnetic resonance imaging, the two tumor subtypes generally share the same characteristics, namely a hypointense lesion in T1.

Chromophobic carcinoma is a heterogeneous group including a classical variant, possessing more than 80% of classical cells, an eosinophilic variant, possessing more than 80% eosinophils and a mixed variant, possessing more than 20% of both types of cells [12]. Tumor cells generally appear as large polygonal cells with a prominent cell membrane and a relatively transparent cytoplasm with a fine reticular pattern that has been described as a “plant cell” appearance, perinuclear or “halo” compensation is generally found and under the electron microscope, numerous microvesicles of 150 - 300 nm are found, which are the most distinctive and defining feature of chromophobic carcinoma [13,14]. The main differential diagnosis of chromophobic carcinoma, especially eosinophilic cell carcinoma, is oncocytoma. The two types can coexist in Birt-Hogg-Dubé syndrome, an autosomal dominant genodermatosis; this syndrome is clinically manifested by benign skin tumors, pulmonary cysts associated with recurrent pneumothorax and renal tumors, often bilateral and multiple [15]. In case of doubt, Hale’s stain can confirm the diagnosis of chromophobic carcinoma since it characteristically marks the cytoplasm of cells, whether clear or eosinophilic [16].

Przybicyń, *et al.* did a study of 203 chromophobic kidney tumors, and found that the sarcomatous component is rare in these types of tumors, unlike what has been shown in other studies [10], but poor prognosis if associated.

Until now, there is no universal consensus for the adjuvant treatment of chromophobic cell carcinoma with sarcomatous component, given the aggressive nature of the tumor, our patient has benefited from chemotherapy with cisplatin and radiotherapy of the renal compartment.

### Conclusion

Chromophobic carcinoma is a relatively rare variant of renal cell carcinoma. These are generally mild tumors, of limited stage and of low grade. It must first be distinguished from oncocytomas. Metastatic or recurrent forms are exceptional. The association with a sarcomatous component makes the prognosis pejorative. More studies are needed to improve the diagnostic and prognostic tools for chromophobic renal cell carcinoma. Total nephrectomy remains the standard of reference.

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