

# Spontaneous Rupture of a Renal Cell Carcinoma Associated with Fatal Bleeding

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## ABSTRACT

Spontaneous rupture of the renal parenchyma is rarely reported, usually seen as a complication of an underlying disease like the benign and malignant tumors of the kidney, also except from tumors among the causes of spontaneous renal rupture associated with bleeding, there were claimed vascular anomalies affecting the parenchyma, infections and coagulation disorders. Presented case was a 79-year-old male found dead at home. At the autopsy in macroscopic examination; all of the organs with signs of putrefaction, free blood at perihepatic and post hepatic retroperitoneal area, bloody coat at colon serous surface and 25x30x25 cm of hematoma at the right perirenal area were observed. In dissection, 5x2 cm of crescent shaped residual kidney structure was detected at the inferior pole adjacent to the 15x5x8 cm of pale yellow tumor mass settled in the upper pole of right kidney dissection associated with kidney, and 3x3 cm of tumor rupture and bleeding area in the upper part of tumoral pseudo capsule was inspected. Tumor sections were dirty yellow in color, bleeding and a large area of autolysis in appearance were also observed. Histopathological examination of the samples prepared from the tumoral mass taken from on the right kidney revealed renal cell carcinoma. Our aim was to present a rare case of spontaneous rupture of renal cell carcinoma detected at the autopsy.

**Keywords:** renal cell carcinoma, hemorrhage, death, autopsy

## INTRODUCTION

Spontaneous rupture of the renal parenchyma is rare phenomenon, usually seen as a complication of an existent underlying disease (1,2). The most common causes of spontaneous

renal hemorrhage are benign and malignant tumors of the kidney among which angiomyolipoma and the renal cell carcinoma are the most common ones (1-8). As well as tumors, among the causes of spontaneous renal rupture associated with bleeding, there are vascular anomalies affecting the parenchyma, infectious

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causes and coagulation disorders (1,2). Renal cell carcinomas derived from renal tubular epithelium especially settle in the cortex and they constitute 80 to 90% of primary malignant tumors and 2-4% of all adult cancers (9). In our study, we aimed to discuss a patient that was found dead at home and he was detected to have died from internal bleeding depending on spontaneous rupture of renal cell carcinoma at autopsy in recent literature. □

### CASE REPORT

Presented case was a 165 cm tall, weighing 65-70 kg, 79-year-old male who was found dead at home. At the external examination; in front of the neck and chest and at the inferior of the abdomen green discoloration area depending on putrefaction, 2.8 cm in diameter lipoma on the back in interscapular area was observed. At the autopsy, all of the organs along with signs of putrefaction, free blood at perihaptic and post hepatic retroperitoneal area, bloody coat at colon serous surface and 25x30x25 cm of hematoma at the right perirenal area were observed (Figure 1). In the process of dissection, 5x2 cm of crescent shaped residual kidney structure was detected at the inferior pole adjacent to the 15x5x8 cm of pale yellow tumor mass settled in the upper pole of right kidney dissection associated with kidney, and 3x3 cm of tumor rupture and bleeding area in the upper part of pseudo capsule was

inspected. When it was weighed together with tumoral mass and haematoma, the right kidney was measured 1000 grams. Tumor sections were in dirty yellow color, bleeding and autolytic in appearance. Histopathological examination of the samples prepared from the tumoral mass settled in the right, revealed renal cell carcinoma. In the toxicological analysis of samples taken during the autopsy, no toxic substances were detected. The cause of death was reported to have been internal bleeding caused by spontaneous rupture of renal cell carcinoma. □

### DISCUSSION

Although non-traumatic spontaneous rupture of renal parenchyma is rare phenomenon, it is a life-threatening condition that requires immediate surgery. In etiology of spontaneous rupture of the renal parenchyma, benign and malignant tumor formation is specified as the most common underlying cause (61%), and among them angiomyolipoma is the most common one (29%), followed by renal cell carcinoma (26%) (10). Vascular diseases are the second most frequent causes of spontaneous rupture of renal parenchyma (17-18%). In addition, among the vascular diseases, polyarteritis nodosa (PAN) is the most common cause (8,11).

Cinman et al. reported that they examined 27 cases of spontaneous rupture of the renal parenchyma; 33% of which is angiomyolipoma, 26% of which is renal adenocarcinoma, and 26% of which is vascular diseases (12). Mas MR et al. have presented two cases of renal involvement of PAN resulting in bilateral perirenal haematoma due to spontaneous rupture of intrarenal arterial aneurysms as a dramatic complication of PAN (13). Spontaneous renal hemorrhage or rupture may be the first sign of PAN or renal cell carcinoma, as in these two cases. Similarly, in our case, spontaneous rupture of renal parenchyma was the first sign of renal cell carcinoma.

The exact mechanism of renal tumor rupture has not clearly been understood but while some researchers claim that rupture occur depending on a direct tumoral invasion of capsular or vascular structures (14), others have proposed that it may develop due to tension as a result of increased renal venous pressure depending on tumoral emboli (10). According to

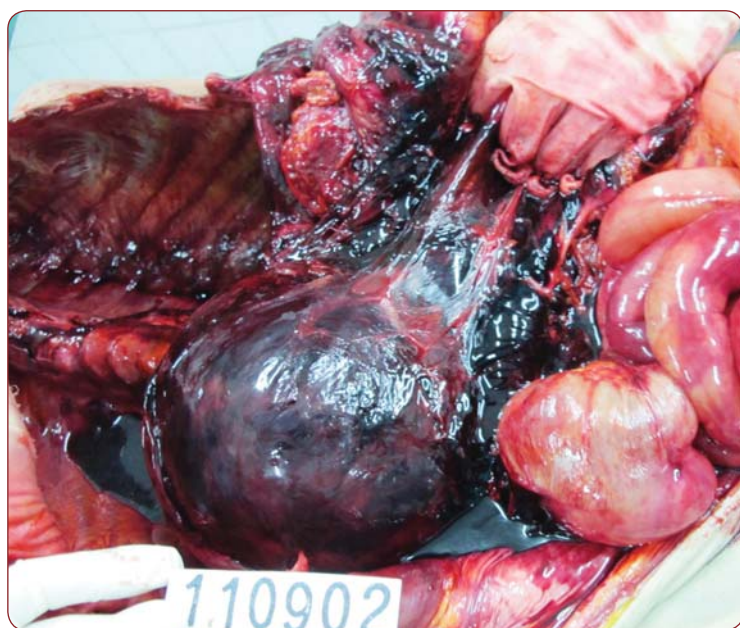


FIGURE 1. Hematoma on the right perirenal area.

another view, necrosis depending on the growth of the tumor is thought to be causing rupture (1).

As etiologic factors causing spontaneous rupture of the renal parenchyma are generally chronic diseases, reported cases are often the ones that were medically followed-up and treated. For this reason, in the majority of cases, conditions that may require forensic au-

topsies did not occur. There were published studies and case reports about spontaneous rupture of renal cell carcinoma available; however, there are no previously published cases of forensic autopsy depending on spontaneous rupture of renal cell carcinoma.

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