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Oncology

Fast growing papillary renal cell carcinoma in first trimester pregnancy with postoperative inferior vena cava thrombosis: A case report

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A B S T R A C T

Renal cell carcinoma (RCC) is an extremely rare and fatal tumor for women of childbearing age. Consequently, the cases published in the literature are limited and medical experience with therapeutic management of newly diagnosed RCC in pregnant women is poor. We report our clinical experience with a renal tumor diagnosed in first-trimester pregnancy complicated in postoperative by an inferior vena cava thrombosis. Further reporting of such a case should help to collect more data in purpose to establish a clear, systematic and evidence guide-ligne in front of this unique situation.

Introduction

The incidence of malignancies diagnosed in pregnant women in developed societies is 1/1000 pregnancies. Breast and cervical cancer are the most common tumors diagnosed during pregnancy while Lung, gastrointestinal and urological tumors are rarely observed.[1] Renal cell carcinoma (RCC) is a rare and potentially fatal tumor in pregnancy. It stills, however, the most frequent urological malignancy reported in pregnancy.[2] In this case report, we describe an RCC diagnosed a few days before knowing about the pregnancy in a young woman with 16 years history of primary infertility complicated in late postoperative with a deep venous thrombosis.

Case report

A 39 years old woman with a history of 16 years of primary infertility who presented with for months history of groin right pain and flank mass syndrome. An ultrasonography examination revealed a right renal mass. PT-scan of march 7th 2019 objectified a right renal polar inferior mass with double solido-cystic component measuring 120 mm along its long axis (Fig. 1). As part of the extension assessment, a thoraco-abdominopelvic scan was performed at April 26th, 2019 objectifying an increasing tumoral diameter of 17 mm in 8 weeks, exerting a sufficient effect on the neighboring structures, without invasion of the renal vein or the inferior vena cava and without visualization of distant metastasis (Fig. 2).

One week later, the patient was transferred to our center. She reported two weeks delayed period and a 10 kg weight loss at the last for months with body mass index (BMI) at 37 at the moment. No macroscopic hematuria was reported. Physical examination revealed no pallor. however, abdominal examination revealed a palpable right flank mass. The obstetrical ultrasonography and BetaHCG level have confirmed a 6 weeks pregnancy. Urine culture and urine cytology showed normal results, the hemoglobin concentration was 13,1 g/dL, platelets concentration at 376000 platelets/ml, prothrombin level at 81%, creatinine at 6mg/l. The rest of the laboratory investigations showed no abnormalities.

The case was discussed in a multidisciplinary consertation meeting, considering the early stage of pregnancy and the increasing tumoral volume and after a long discussion of the malignancy probabilities, evaluating the available therapeutic choices and associated risques, the surgical options were discussed with the patient and her husband. The possibility of spontaneous abortion, if radical nephrectomy was done at 6 weeks of gestation, was explained to her. She accepted the procedure (Fig. 3). The open radical nephrectomy lasted 3 hours with no perioperative incident.

Despite early prophylactic anticoagulation, the patient presented at the third postoperative day a bilateral heaviness of the lower limbs. The Doppler ultrasound revealed an inferior vena cava, bilateral primitive iliac vena and deep venous axis of the lower limbs thrombosis. The obstetrical ultrasonography has no evidence of fœtal cardiac activity controlled twice.

Given the need to start urgent therapeutic anticoagulation and the high risk of bleeding, the decision of abortion was made. The evolution

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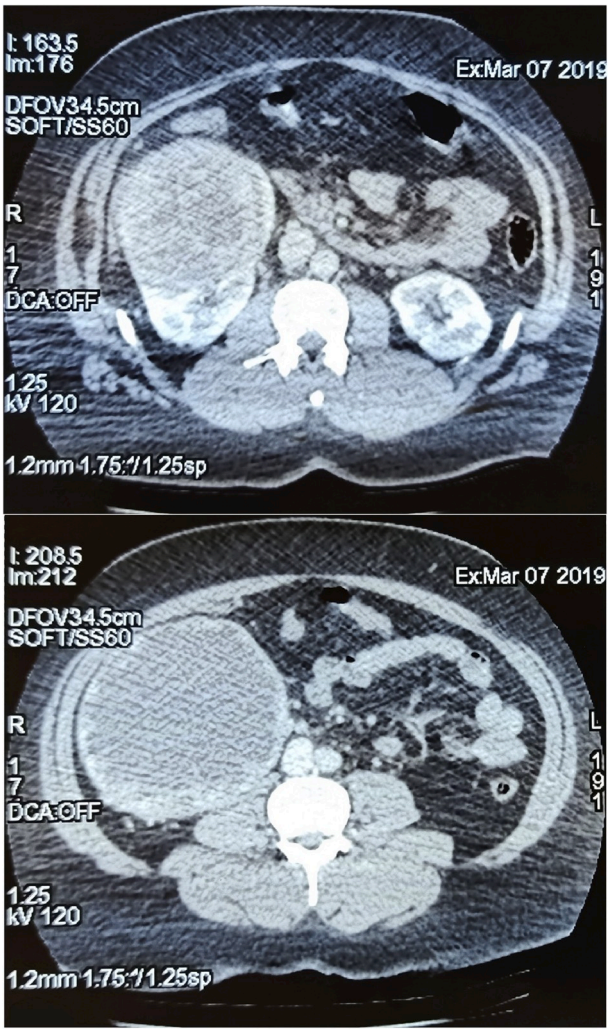

Fig. 1. Abdominal CT showing a right renal polar inferior mass with a double solido-cystic component measuring 120 mm along its long axis.

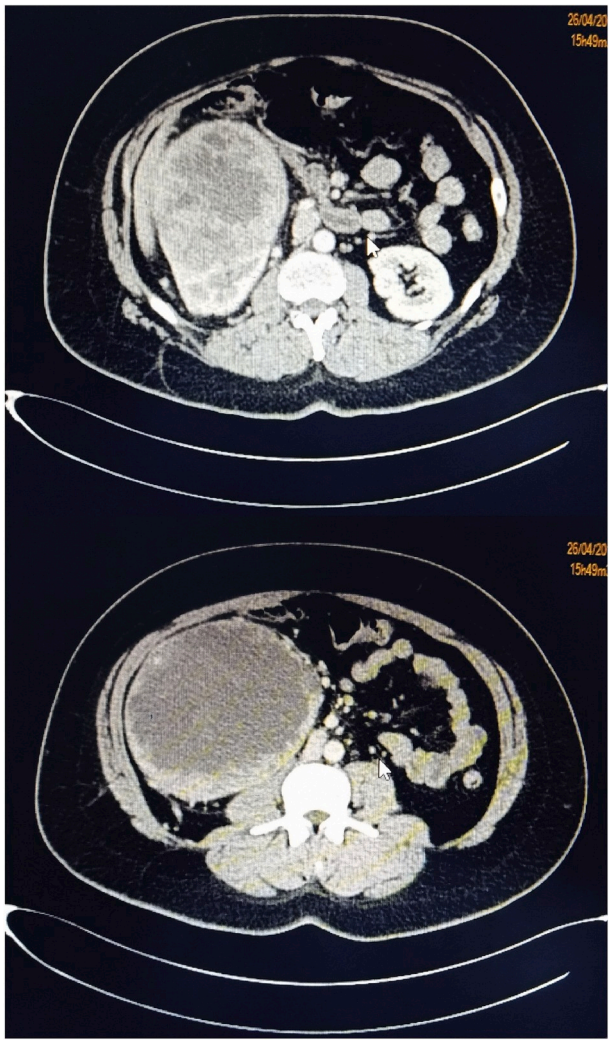

Fig. 2. Abdominal CT showing an increasing size of the right renal mass by 17mm in 8 weeks.

was favorable. The patient was declared outgoing on 26th day under oral anticoagulation for 6 months. The anatomopathological study was in favor of a largely necrotic primary renal papillary carcinoma with limits of surgical excesses passing into the healthy zone. A thoraco-abdominopelvic control scan done 12 weeks after the surgical procedure did not show any abnormality suggesting a tumor recurrence or metastasis with no signs of venous thrombosis and the creatinine concentration was normal. In her last follow-up in the 24th postoperative week, the patient was at her 7th-week pregnancy.

Discussion

Renal cell carcinoma is rarely reported during pregnancy. It represents 3% of adult malignancies, of which 10–15% are papillary renal cell carcinoma. It is, however, the commonest urological malignancy reported in pregnancy with a percentage of 50%.[2]

The environmental factor associated with the renal cancer is smoking, while other factors such as hypertension, diabetes, chronic diuretic use, treatment for kidney failure, recurrent urinary tract infections, multigravidity, certain inherited syndromes like tuberous sclerosis complex and a female body mass index (BMI) higher than 35 in the age group 35–50 are identified risk factors.[3]

RCC may be asymptomatic and appear as a completely incidentally detected renal mass during the antenatal period. Flank mass is the most frequent presentation of RCC in pregnancy followed by the flank pain which may sometimes be the only warning. Finally, Hematuria is reported less commonly. Like in the non-pregnant population, the classical triad of hematuria, palpable mass, and pain is a feature of the late disease.[2]

The preferred diagnostic modality in pregnancy is Ultrasonography because there is no risk of radiation to the developing fetus. Yet, it is operator-dependent. Computed tomography (CT) scan is the imaging modality of choice for the diagnosis of renal masses. However, Magnetic resonance imaging (MRI) is an alternative to CT scan for the evaluation of renal masses in pregnant patients.[4] In our case, while the pregnancy was firstly unknown, 2 CT scans within 8 weeks delay were performed before admitting the patient in our center showing a remarkable growing size of the tumor of 17 mm in 8 weeks. Yet, we estimated that the mean cell doubling time of the tumor was 420 days.

Due to the rare incidence of renal neoplasms during pregnancy, evidence-based guidelines are impossible to draft. therefore, the optimal timing of surgery should be discussed in a multidisciplinary setting and must be reviewed on a case by case basis.[3,5]

In general, in the case of benign lesions, surgery may be postponed until after delivery.[5] Since the mother's welfare is the primary concern, surgery should not be delayed with malignant tumors, especially renal cell carcinoma or sarcomatoid tumors. Two publications were found when aggressive tumors caused metastatic disease with the fatal outcome due to late intervention.[5]

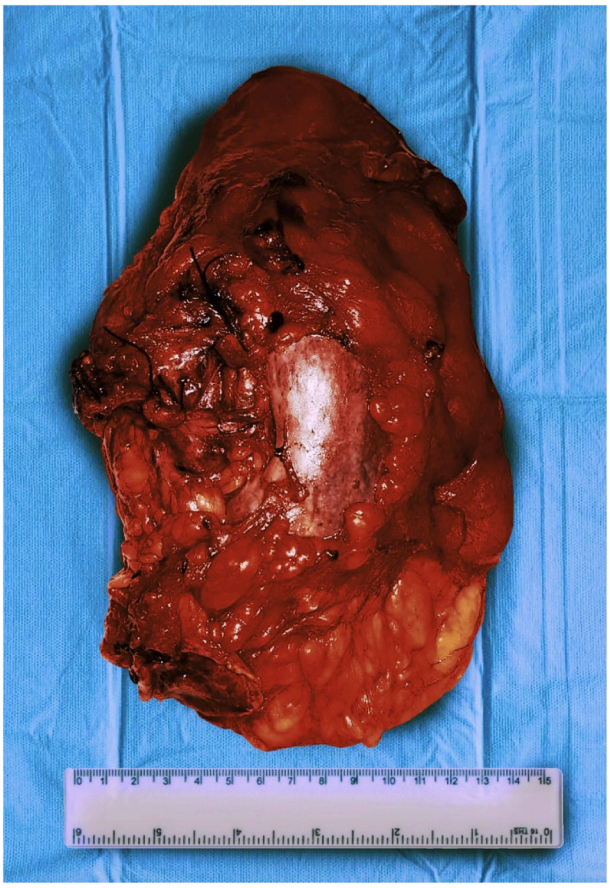

Fig. 3. Gross appearance of the surgical specimen.

Conclusion

Renal masses during pregnancy are an extraordinary unique entity, forming a rare diagnostic, ethical, and therapeutic challenge. The key treatment is radical nephrectomy. Getting a patient to accept the treatment at any stage of pregnancy is difficult. Further reporting of these cases and long-term studies are needed to establish clear and evidence-based guidelines for these patients.

Declaration of competing interest

None of the contributing authors have any conflict of interest, including specific financial interests or relationships and affiliations relevant to the subject matter or materials discussed in the manuscript.

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