



Small Renal Mass with Level 4 IVC Thrombus

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Introduction

Involvement of the inferior vena cava (IVC) tumour thrombus is associated with advance stage of renal cell carcinoma (RCC) as well as other malignant neoplasms such as retroperitoneal tumours, gynaecologic tumours and hepatocellular carcinoma [1–4]. RCC has a biological predisposition for vascular invasion resulting in vascular thrombus extending to IVC in 4 to 25% of patients [5]. We report an unusual case of small renal mass with level 4 thrombus extending up to the right atrium (Fig. 1).

Case Report

A 60-year-old diabetic hypertensive lady presented with a left lower limb oedema for 4 years with worsening of symptoms for 6 months. She had no history of loss of appetite, haematuria or abdominal pain. On examination, she had a bilateral pitting oedema with dilated veins in both the lower limb and anterior abdominal wall. All blood parameters were within normal limits. On CT abdomen, she was found to have a heterogeneously enhancing lesion measuring approximately 2.9 (CC) × 3.4 (AP) × 2.5 (T) cm in the upper pole and interpolar region of the right kidney with thrombus extending up to right atrium. She underwent MRI venogram which was suggestive of thrombus extending up to the right atrium (enhancing in infrahepatic IVC and non-enhancing above it)

(Fig. 2). She underwent prep coronary angiogram which was suggestive of coronary artery disease (double vessel disease). She underwent open radical nephrectomy with IVC thrombectomy under cardiopulmonary bypass followed by CABG (Fig. 3). She tolerated the procedure well and was discharged on the 8th POD. Histology came as clear cell RCC (2 × 1.8 × 2.4 cm) with no sarcomatoid features, Fuhrman grade 3 with a tumour extending into the renal sinus fat and renal vein. Pathologic stage pT3cNoMx. She is doing well with no evidence of recurrent disease on 1-year follow-up.

Discussion

RCC has a high predisposition for intravascular tumour thrombus with 4 to 25% incidence in various reports, nearly one third of these patients have associated metastatic disease. Tumour thrombus in small renal mass is extremely uncommon. The average liner growth rate of small renal mass is 0.28 to 0.36 cm per year with the progression to metastatic disease is around 1 to 2% [6, 7]. Tumour behaviour is determined by the biology of tumour with a high-grade tumour more likely to have a distant metastasis. In our case, presenting symptoms were related to the venous thrombus. Histology conformed it to be high-grade tumour (Fuhrman grade 3) with a tumour extending into the renal sinus fat.

Conclusion

Our case report signifies that even very small tumours can present with level 4 IVC thrombus. High-grade tumours with close proximity to renal sinus may result in early metastasis in small renal tumours.

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Fig. 1 **a** Small renal mass. **b** Small renal mass with intra renal component of tumour thrombus

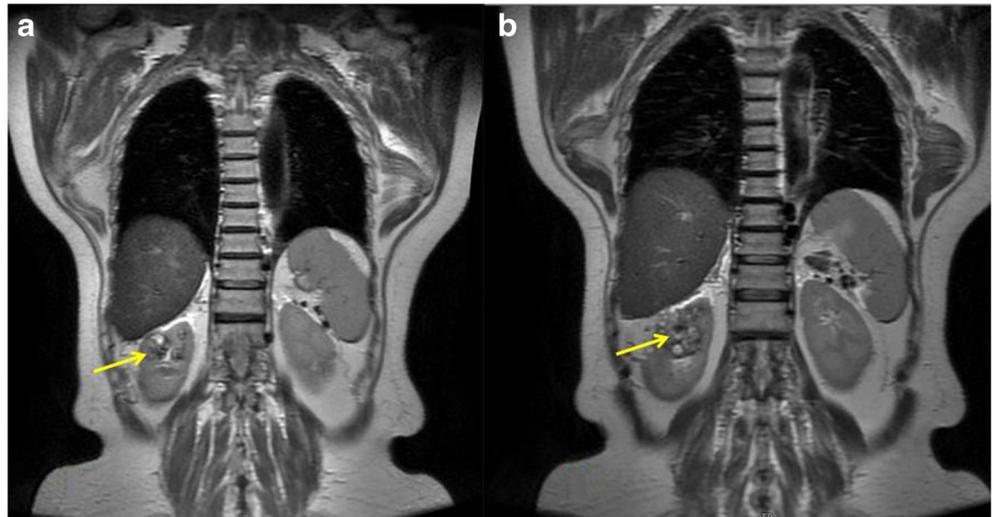


Fig. 2 **a, b** Large IVC thrombus extending up to the right atrium

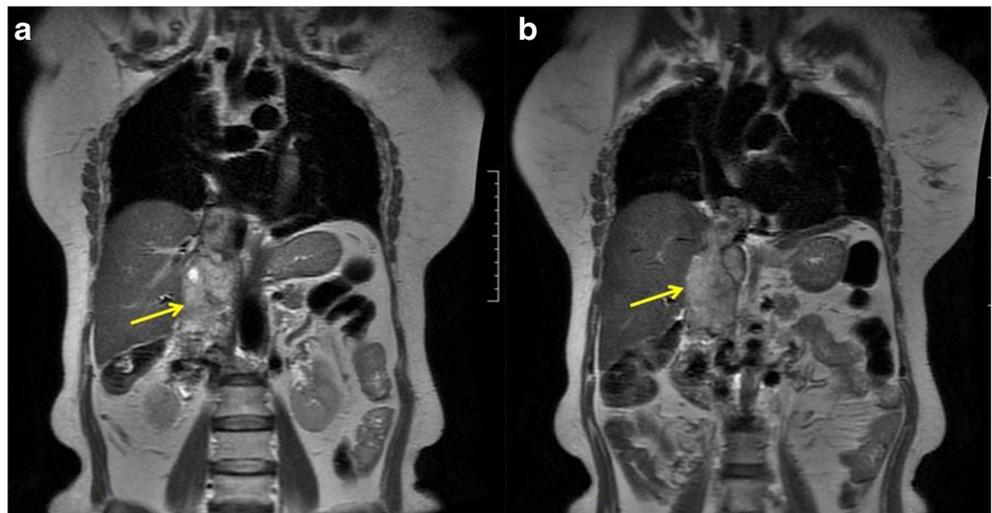
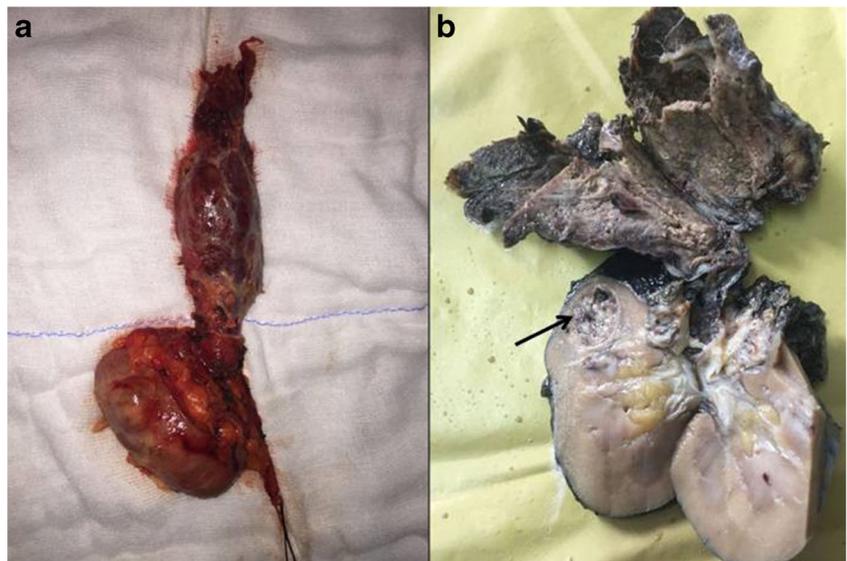


Fig. 3 **a** Post-nephrectomy specimen with IVC thrombus. **b** Cut-open specimen showing a small renal mass with large IVC thrombus



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