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Giant renal oncocytoma

Julien Al Shakarchi, MBChB; Iain Wharton, MBChB, FRCS(Urol); Amgad Youssef, MBChB, Mrcpath; and Paul Anderson, MBChB, FRCS(Urol)

We present the case of a 70-year-old male who presented with a large lesion in the right kidney, which was noticed on ultrasonography. CT confirmed the large tumor, and both clinical and radiological findings raised suspicion of a renal cell carcinoma. Surprisingly, histological examination showed it to be a giant oncoytoma.

Introduction

First described by Zippel (1) in 1942, oncocytomas are the most common benign renal tumor and are reported to account to up to 7% of resected solid renal neoplasms (2). Despite this, it was not until 1976 that their specific pathological features were fully described by Klein and Valensi (3). Oncocytomas develop from the intercalated cells of the distal collecting tubules and are characterised by uniform polygonal or round cells with mitochondria-rich eosinophilic granular cytoplasm. These cells occur in diffuse sheets or as islands of cells in an edematous stroma (2). Oncocytomas tend to be small and asymptomatic, with the majority being diagnosed as an incidental finding on ultrasonography, CT, or MRI (4). To our knowledge, we report here the largest resected case of this type of renal tumor in the United Kingdom.

Case report

An asymptomatic 70-year-old male presented following an abdominal ultrasonography. The ultrasound scan had been requested in primary care due to an elevated creatinine and demonstrated a 14.5cm-diameter mass of mixed echogenicity in the right kidney. The features of the mass were highly suggestive of malignancy, replacing most of the kidney. The patient had no symptoms contributable to the mass, and urinalysis was normal. Physical examination of the patient revealed a right-sided varicocoele of recent onset, but the kidney itself was not palpable (5). As renal-cell carcinoma was highly suspected, an urgent CT renogram was requested. The CT revealed a 15.5cm predominantly cystic tumor occupying the mid and lower poles of the right kidney and a normal left kidney (Fig. 1). The periphery of the mass was enhanced and demonstrated internal nodularity. The inferior vena cava appeared compressed from the encroaching tumor (T2/3a, N0, M0). Following this, a right

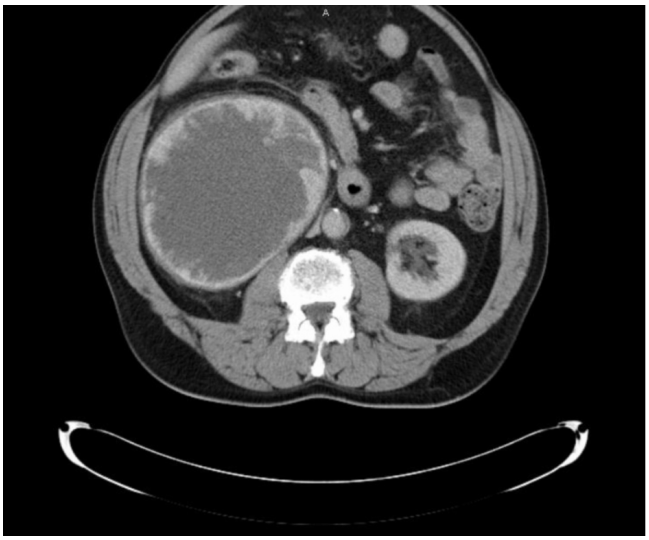

Figure 1. 70-year-old male with renal mass. Axial CT demonstrates a 15.5cm predominantly cystic tumor occupying the mid and lower poles of the right kidney. The left kidney is normal.

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Julien Al Shakarchi, I.P. Wharton, and P.C.B. Anderson are in the Department of Urology, and A. Youssef is in the Department of Pathology, Russells Hall Hospital, Dudley, West Midlands, UK.

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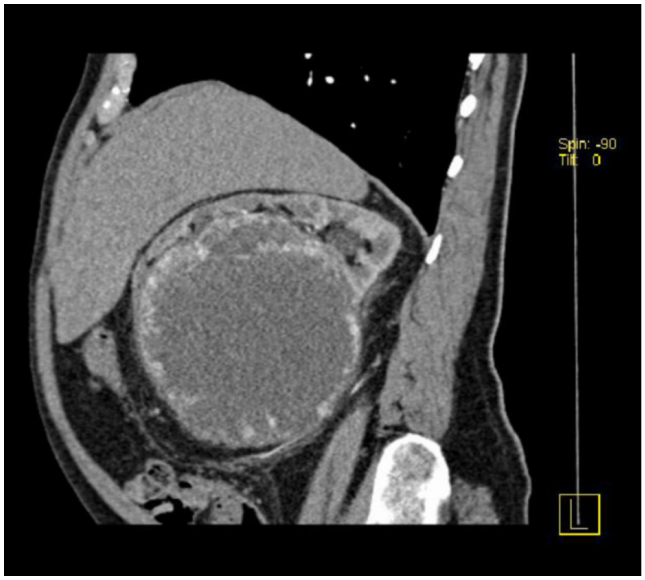

Figure 2. 70-year-old male with renal mass. Coronally reformatted CT again demonstrates a large mass involving the mid and lower poles of the right kidney and elevating the liver.

radical nephrectomy was performed. The patient made a full recovery and was discharged home. The macroscopic examination of the resected specimen revealed a heterogeneous tumor mass, partly haemorrhagic, measuring 13.0 x 11.0 x 5.5cm (Fig. 2). Histological examination revealed this very large tumor to be, surprisingly, an oncocytoma (Fig. 3). The patient made a full recovery following the surgery.

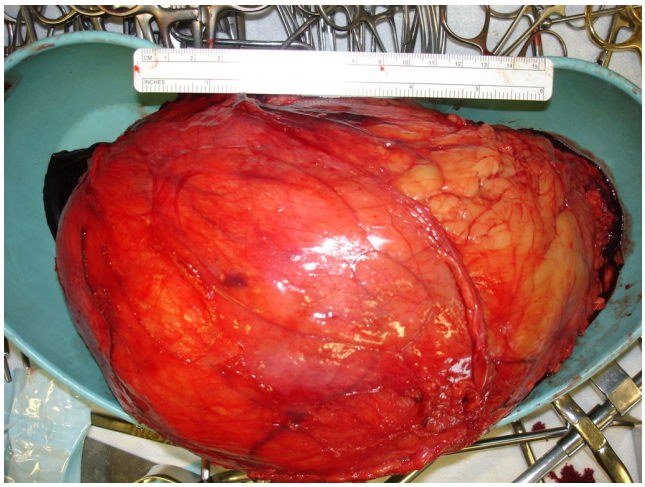

Figure 3. 70-year-old male with renal mass. Gross specimen of the heterogeneous and partly hemorrhagic tumor mass, measuring 13.0 x 11.0 x 5.5cm..

Discussion

By presenting this case, we would like to emphasise the difficulty in diagnosing oncocytomas preoperatively. There is a wide variation of presentations and radiological findings, which often overlap with renal-cell carcinoma. Clinically, these tumors are often asymptomatic; however, a thorough clinical examination can reveal signs of an underlying mass such as a varicocoele in our case, which can often be found with renal masses. Ultrasonography usually reveals a homogeneous mass with an area of central scarring. However, even though only a small proportion of renal-cell carcinomas show similar features, as their incidence is much greater, a homogeneous mass is as likely to be carcinoma as oncocytoma. A recent study has showed that the typical CT features of an oncocytoma, such as hypervascularity and homogeneity with a characteristic central stellate scar, are found only in a small proportion of cases (6). Fine-needle aspiration and biopsy are often not diagnostic, as the pathological features of oncocytomas can be similar to renal-cell carcinoma (7). The described case illustrates this difficulty in the clinical and radiological diagnosis of even large giant renal oncocytomas. Therefore, most patients will be managed aggressively with either a partial or radical nephrectomy.

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