Case Report/รายงานผู้ป่วย

Concomitance of Renal Cell Carcinoma and Angiomyolipoma in a Kidney of a 76-year-old Thai Woman: A Case Report and Review of Literature.

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Abstract

We report the first case of a 76-year-old healthy Thai woman who had renal cell carcinoma and angiomyolipoma in the right kidney. This very rare condition has been reported about 50 cases since 1975. She has no tuberous sclerosis. She was admitted for right nephrectomy after two incidental renal masses was found by CT scan. Pathological examination of the upper pole mass and the lower pole mass show classical histopathology of renal cell carcinoma and angiomyolipoma, respectively.

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Clinical history

A 76-year-old woman who had two masses in the right kidney, which were incidentally discovered by computer tomography during checked up without any abnormal symptoms. She had underlying disease of diabetes mellitus, hypertension and dyslipidemia. The hematocrit was 38 mg% and the urinalysis was normal. The abdominal CT showed a well-defined heterogenous enhancing mass with central necrosis at the upper pole of the right kidney and another well-defined heterogenous enhancing nodule with some area of fat, involving the cortex of the right lower pole kidney. Laparoscopic nephrectomy was done after a few weeks.

Pathologic examination

Gross Pathology

The right kidney measured 9 x 5.5 x 4.5 cm, which had easily peeled-off renal capsule. It showed red brown granular external appearance with simple cortical cysts. The lager tumor located at the upper pole: it was a well-circumscribed firm yellow tan mass and measuring, 4.5 cm in diameter. The tumor involved renal cortex, renal medulla and invading to the renal vein. The other tumor was 2.5 cm in diameter, well-circumscribed rubbery yellow fatty appearance, located at the lower pole (Figure 1). Both of them did not penetrate the renal capsule.

Histopathology

Histopathologic examination of the renal cell carcinoma at the upper pole (Figure 2a) showed nests of clear cells and eosinophilic granular cells separated by scanty delicate richly vascular network. The clear cells were polygonal with distinct cellular border. The eosinophilic cells had fine granular cytoplasm. Both of them contain slightly pleomorphic and hyper-chromatic nuclei with distinct nucleoli. The mass at the lower pole (Figure 2b) was composed of mature adipose cells admix with smooth muscle cells and thick wall blood vessels which were characteristic of angiomyolipoma.

Discussion

Angiomyolipoma is a usually benign tumor of the kidney. It has incident 0.3 -3% of renal neoplasm.

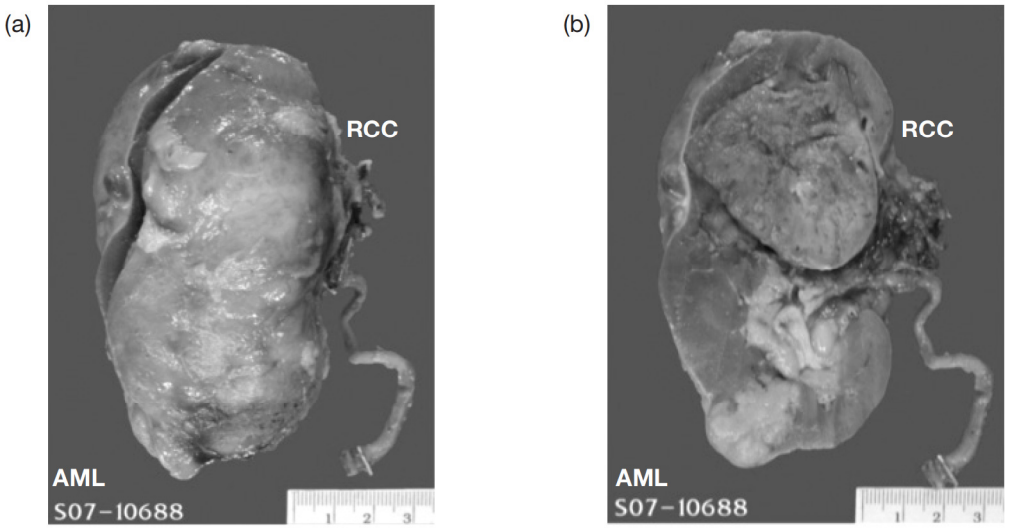

Fig.1 *The external appearance of the kidney (a) and the cut surface of the kidney (b). Renal cell carcinoma (RCC) is in the upper pole and angiomyolipoma (AML) is in the lower pole of a kidney.*

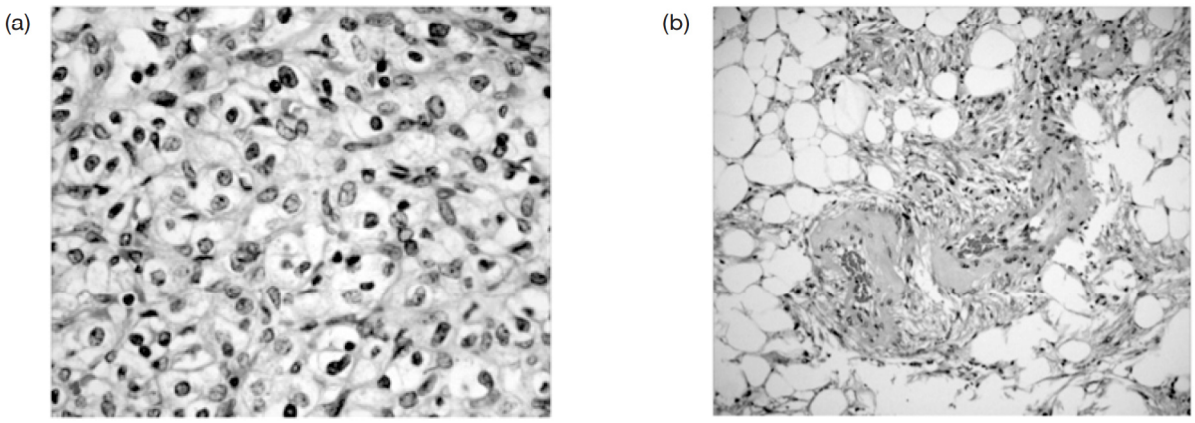

Fig.2 *The renal cell carcinoma (a) composed of nest of clear cells and eosinophilic granular cells separated by delicate vascular network (H&E x 400). The angiomyolipoma (b) composed of mature adipose cells, smooth muscle cells and thick wall blood vessels (H&E x 100).*

Two types of angiomyolipoma are described, isolated type (80%) and that is associated with tuberous sclerosis (20%).[1] Tuberous sclerosis is a genetic disorder that has mutation on two genetic loci, TSC1 on chromosome 9q34 and TSC2 on chromosome 16p13, which has autosomal dominant pattern inheritance and 100% penetrance.[2] Angiomyolipoma is the most common associated renal tumor which occurs in 85% of tuberous sclerosis complex, following by renal cysts in 45% and renal cell carcinoma in 4%.[7] Angiomyolipoma that is associated with tuberous sclerosis is often bilateral and multiple occurrence and typically larger than isolated angiomyolipoma.[1]

Renal cell carcinoma is the most common primary kidney carcinoma in adults, which arise from proximal renal tubular epithelium. Renal cell carcinoma occurs in both sporadic and hereditary forms, which are associated with structural change in short arm of chromosome 3 (3p). Von Hipple-Lindau (VHL) disease is one of recognized inherited genetic condition associated with renal cell carcinoma. The classic triad clinical presentations are consisted of flank pain, hematuria, and flank mass, that is generally advanced stage.[3]

Coincident of renal cell carcinoma and angiomyolipoma in the same kidney is very rare.[4] In 1975, the first report of angiomyolipoma and renal cell carcinoma in the same kidney was published by Kavaney P. and Fielding I.[5] until now, about 50 cases are reported in either tuberous sclerosis associated patients or non-tuberous sclerosis patients, besides renal cell carcinoma there are 3 reports of oncocytoma occur with angiomyolipoma in the same kidney. The incidence of angiomyolipoma and renal cell carcinoma in the same kidney is more frequent in female.[6,8-11]

This is the first report of concomitance of renal cell carcinoma (clear cell type) and angiomyolipoma in the same kidney in non-tuberous sclerosis patient in Thailand.

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