Primary Intrarenal Lipoma: A Case Report

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Fat-containing tumors of the kidneys are not uncommon, but primary intrarenal lipomas are extremely rare, with only 19 documented cases reported to date. In most cases, total nephrectomy is performed. We report on a 71-year-old man with the complaint of epigastralgia. Series image studies revealed a high fat-containing tumor with low vascularity arising from the lower pole of the left kidney. We performed partial nephrectomy, and the subsequent pathology report revealed a pure lipoma.

Key Words: intrarenal lipoma, kidney neoplasm, partial nephrectomy
(*Kaohsiung J Med Sci* 2005;21:383–6)

Primary intrarenal lipomas are the rarest of benign renal tumors. A review of the literature, to date, reveals only 19 previously reported cases [1–3]. We present a case of a large renal lipoma with the initial presentation of nonspecific gastrointestinal symptoms.

Case Presentation

A 71-year-old man with medically controlled hypertension and chronic renal failure came to our gastrointestinal clinic because of epigastralgia. Other complaints included nausea, anorexia and abdominal fullness. No hematuria or flank pain was found, and an initial physical examination was unremarkable. Except for a high serum creatinine level (2.7 mg/dL) and proteinuria (30 mg/dL), the other laboratory values, such as complete blood count and serum electrolytes, were within normal limits.

An abdominal sonography showed a solid mass with heteroechogenicity in the lower pole of the left kidney. In computed tomography, a large perirenal mass of 9.5 cm in diameter with exophytic growth pattern and fatty content was observed in the left renal cortex (Figure 1). Angiography revealed a hypovascular mass, with the feeding artery arising from the anterior division of the left renal artery. A fat-containing renal tumor was diagnosed, and due to malignant potential that could not be ruled out, the tumor was excised.

During operation, a yellowish fatty tumor was identified within the Gerota fascia, attached to the middle-inferior aspect of the left kidney. A frozen section biopsy revealed much fatty tissue without evidence of malignancy. Partial nephrectomy was performed, excising the entire mass with a cutting margin of normal renal parenchyma.

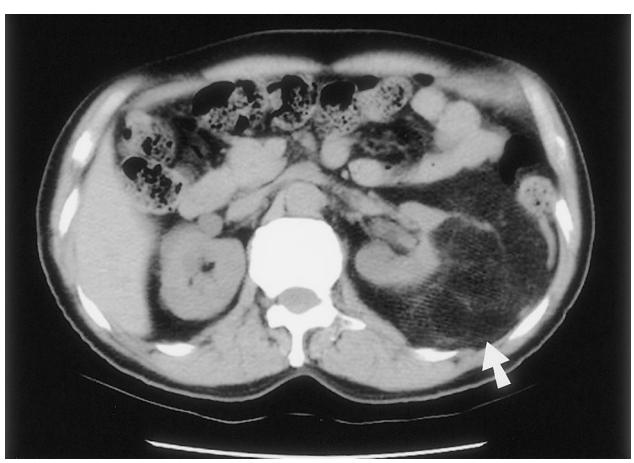

Figure 1. *Computed tomography of a low-density mass, exophytic from left renal cortex (arrow).*

Received: March 11, 2005 Accepted: April 27, 2005
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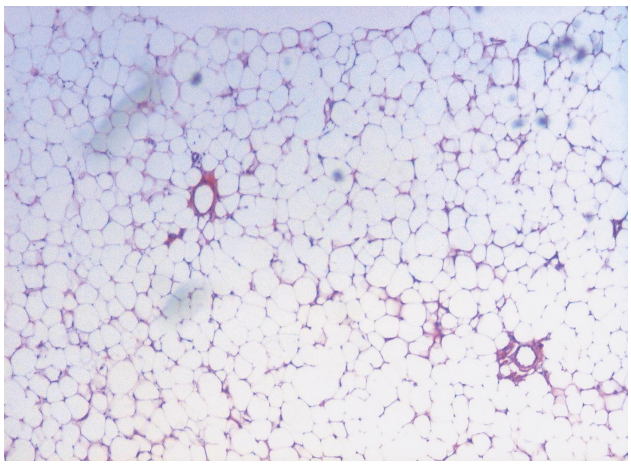

Figure 2. *Tumor pathology reveals mature adipose cells in lobular pattern (hematoxylin & eosin, ×40).*

Grossly, the tumor was yellowish, and the dimensions were 15 × 9 × 7 cm. It was well circumscribed and covered with the renal capsule. Microscopically, the tumor consisted of mature adipose cells in a lobular pattern (Figure 2). Pure intrarenal lipoma was diagnosed. Convalescence was uneventful, and the patient was discharged 11 days postoperatively. His gastrointestinal symptoms subsided during follow-up in the out-patient department, and no tumor recurrence was noted within 6 months.

Discussion

Primary lipomas of the kidneys are extremely rare. In 1941, Robertson and Hand described 12 previously reported cases of intrarenal lipoma and added two cases of their own. However, after careful histological review of these cases, only three were proved to be pure intrarenal lipoma [1]. To date, only 16 cases of pure intrarenal lipoma have been identified, resulting in a total of 19 reported cases [2,3].

The origin of intrarenal lipomas is unclear. Fat is not normally found within the renal capsule. Keenan and Archibald considered that renal fat was a proliferation of mesenchymal cells changing into fat cells by taking up fat into the cells [4]. Hunt and Simon suggested an origin from perivascular connective tissue undergoing a fatty metamorphosis [5].

In the review of the previous 19 cases, intrarenal lipoma was mostly found in middle-aged women [2, 3], where both left and right kidneys were equally involved. Various flank or abdominal pains were the most common symptoms, and pain was noted on the side of the lesion and varied from dull ache to renal colic. Some patients presented with vague gastrointestinal discomfort. Hematuria was never a complaint in these patients.

The most common fat-containing tumor in the kidney is angiomyolipoma. An intrarenal lipoma appears as a hypovascular mass on angiography, with displaced and stretched arteries [6]. However, an angiomyolipoma typically shows neovascularity with "corkscrew" vessels [7].

Intrarenal lipomas are often confused with perirenal lipomas. An intrarenal lipoma is confined within the renal capsule, while a perirenal lipoma grows beyond the renal capsule. That is, the renal capsule can be found between the renal parenchyma and the perirenal lipoma. In addition, the blood supply of an intrarenal lipoma comes from renal arterial branches [3].

The malignant potential of intrarenal lipomas had been suggested by Keenan and Archibald, in 1907 [4]. Subsequent investigations reported that these tumors tended to recur and become more cellular with each recurrence. Nephrectomy followed by radiation therapy was advised by Lower and Belcher, in 1927 [8]. Later, in 1941, a review article written by Robertson and Hand indicated that, although intrarenal lipomas might contain variable types of mesenchymal tissues, no true sarcomas of this type had been reported to date [1]. Furthermore, until now, no case of a pure intrarenal lipoma with sarcomatous transformation has been documented.

In our opinion, because of the benign nature of lipomas, we suggest that partial nephrectomy should be considered if possible. Primary intrarenal lipomas are extremely rare benign renal tumors, and we conclude that computed tomography and magnetic resonance imaging may be helpful in the diagnosis of this high fat-containing tumor. Preoperative or intraoperative biopsy may clarify the characteristics of the tumor, and nephron-sparing surgery may be considered under the diagnosis of intrarenal lipoma.

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原發性腎脂肪瘤 — 病例報告

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原發性腎脂肪瘤極為罕見，文獻上只有發表過十九個案例，而這些案例幾乎都接受腎切除手術，我們報告一位七十一歲男性，因為上腹部悶痛求診，一系列影像學檢查發現在左側腎臟有一富含脂肪組織的腫瘤，經部分腎臟切除手術摘除腫瘤後，病理報告證實為原發性腎脂肪瘤。

關鍵詞：腎脂肪瘤，腎臟腫瘤，部分腎臟切除手術

（高雄醫誌 **2005;21:383–6**）

收文日期：**94** 年 **3** 月 **11** 日

接受刊載：**94** 年 **4** 月 **27** 日

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