Böbrek onkositomu: İki olgu sunumu ve literatürün gözden geçirilmesi

Renal oncocytoma: Two case reports and review of the literature

Halil Çiftçi[1], Muhammed Emin Güldür[2], Murat Savas[1], Adem Altunkol[1], Halil Öncel[1], İsmail Yağmur[1]

[1]Harran Üniversitesi Tıp Fakültesi, Üroloji Anabilim Dalı
[2]Harran Üniversitesi Tıp Fakültesi, Patoloji Anabilim Dalı

Correspondence:

Dr. Halil Çiftçi, Harran Üniversitesi Tıp Fakültesi, Üroloji Bilim Dalı, Yenişehir yerleşkesi, 63300, Sanliurfa, Tel: 0 414 3128456, Fax: 0 414 3128144.

Abstract

Oncocytoma is a non-frequent renal neoplasm and it represents in a range from 3 to 9% all primary renal masses originated from parenchymal cells or stem cells. Oncocytomas are mostly asymptomatic, and the majority of tumors are discovered incidentally. This tumor clinically benign and excellent prognosis, rarely, invasive growing and distand metastasis may be seen. Granular forms of renal cell carcinoma and eosinophilic variant of chromophobe cell carcinoma is not always possible to distinguish from this tumor, therefore radical or partial nephrectomy is applied for treatment. In this article, we present and discuss clinical, treatment and histopathological features of two renal oncocytoma cases according to the current literature.

Key words: kidney, neoplasma, oncocytoma, benign tumor

Özet

Onkositomalar, parankim hücreleri ya da kök hücrelerinden gelişen solid renal kitlelerin %3-9'unu oluşturun neoplazmlardır. Genellikle asemptomatik olup başka nedenlerle yapılan taramalar sonucu ortaya çıkmaktadır. Klinik olarak bening kabul edilip prognozu mükemmeldir ama nadirde olsa uzak organ metastazları bildirilmiştir. Renal hücreli karsinomun granüler formları ve kromofob hücre karsinomunun eozinofilik varyantlarından ayırt etmek her zaman mümkün olmadığından tedavide radikal ya da parsiyel nefrektomi uygulanmaktadır. Bu makalede, bu iki vakanın tedavisini, klinik ve histopatolojik özelliklerini güncel literatür doğrultusunda tartışıp sunuyoruz.

Anahtar kelimeler: böbrek, neoplazm, onkositom, benign tümörler

Introduction

Oncocytoma is an uncommon renal neoplasm, is a benign tumor, and accounts for approximately 3–9% of all primary renal tumors (1). Renal oncocytomas were first described by Zippel et al and the first long series of 13 cases presentation by Klein et al (2). Oncocyctomas are most often observed during the seventh decade of life although the ages of the patients ranged between 12 to 86 years old. The male, female ratio was of 1.6:1 (3). Oncocytoma is considered to be a benign neoplasm in the majority of cases; this is the reason why there is only one documented case of liver metastasis in literature (4). They are generally small lesions, but they can reach huge sizes.

Oncocytomas may co-exist with primary renal carcinomas (RCC). RCC may present with oncocytic features and RCC may co-exist with oncocytomas in the same or contralateral kidney for distinction between renal oncocytoma and RCC, ultrasonography (USG), magnetic resonance imaging (MRI), and computerized tomography (CT) scan can be performed, but the accurate diagnosis is not possible before surgery and histologic examinations of the specimens (4, 5). Clinically, oncocytoma may be asymptomatic, but symptomatic patients may present initial signs of haematuria, flank pain or palpable mass. The consensus for the treatment of oncocytoma is surgical excision. In patient with definite preoperative diagnosis, nephron sparing surgery or laparoscopic surgery could be performed (6). In the present study, we review the clinical and histopathological course of our renal oncocytoma cases according to the current literature.

Case report

Case 1

A 59-year-old female was presented with consistent lumbar and left lateral abdominal pain. Physical examination and laboratory tests, including complete blood cell count, electrolytes, liver and renal function

tests screening were normal. However, abdominal USG and a renal CT scan demonstrated a mass measuring 3x3 cm in the upper pole of the left kidney. Further, MRI also showed abnormalities in the left kidney, radiomorphologically characteristic of oncocytoma. The right kidney was found to be normal and nephron-sparing surgery (Laparoscopic partial nephrectomy) was performed. Pathologic diagnosis of renal mass was oncocytoma (Figure 1).

Case 2

A 34-year-old male was referred to our hospital for routine check-up for urinary tract infection disease. Clinical examination and laboratory tests were normal but abdominal USG and a renal CT showed a hypodense lesion 5x6cm in the central area of her right kidney (Figure 2). MRI also showed abnormalities in the left kidney. The left kidney was found to be normal and the patients have undergone right radical nephrectomy. Renal pelvis was contained in mass cells after surgery (Figure 3). Pathologic diagnosis of renal mass was oncocytoma (Figure 1).

Discussion

The current 2004 World Health Organization classification of renal epithelial tumors recognizes benign lesions such as oncocytoma and angiomyolipoma (7). Renal oncocytoma is benign lesions, differentiating from type A intercalated cells of the renal collecting tubule. It represents 5% of tumors of the kidney and 10% of renal tumors <3 cm. Macroscopically, the tumor must be clearly circumscribed, homogeneous, cortically localized, dark-brown in color, and frequently with the presence of a central scar without necrosis or infiltration at the renal vein. Histologically characterized by uniform polygonal or round cells with mitochondriarich eosinophilic granular cytoplasm that occurs in diffuse sheets or as islands of cells in an edematous stoma (7). Differentiating oncocytoma from RCC histologically can be difficult, especially from chromophobe RCC, which originates from intercalated cells of the kidney tubules as well. The most common microscopic feature shared by oncocytomas and chromophobe RCC is the presence of abundant granular eosinophilic cells (4).

The average size of the tumor was vary 4, 9 – 2, 7 (range: 2–14 cm) in accordance with previous stated reports. In 95% of the cases, the tumor is unilateral, whereas multiple tumors are detected in 5% of the cases (8). Cytogenetically, there is not a great deal of evidence in the available literature, but it is possible to subdivide oncocytomas into three families, as far as their genetic abnormalities are concerned, oncocytomas with losses of chromosomes 1 or Y; oncocytomas with balanced translocations involving 11q13 (region encoding mitochondrial DNA) and oncocytomas with miscellaneous abnormalities (9). Renal oncocytoma is often asymptomatic and diagnosed at autopsy or incidentally, mostly in patients who are being examined with abdominal USG, CT or MRI for other health problems (3). The appearance of a typical central stellate scar can occasionally be mimicked by necrosis in a renal cancer and this feature is not considered specific. Most often, the diagnosis of renal oncocytoma is made after surgical removal of the tumor because of the lack of specific clinical features and imaging findings. Moreover, fine needle aspiration and biopsy are often not diagnostic due to oncocytoma having similar histopathologic characteristics as various eosinophilic variants of RCC. Symptomatic patients may present initial signs of haematuria, flank pain or palpable mass (8, 10).

Considering lack of diagnostic yield and low sensitivity of bioptical procedures and imaging techniques, it is well worth remarking that renal oncocytoma may overlap with other renal neoplasms with a preponderance of granular cytoplasm. Therefore, it would be always acceptable treatment for oncocytoma is a radical nephrectomy, although a radical operation could be regarded as an over-treatment, considering the benign biology of these tumors (11). When a minimally invasive treatment is required (older patients, severe comorbid conditions, patients with a compromised renal function, bilateral disease), a variety of nephron sparing options can be advocated. These include nephronsparing surgery, cryoablation, radiofrequency ablation, high intensity focused ultrasound, microwave thermotherapy and interstitial photon irradiation. The aim of these treatments would be to prevent unnecessary surgery and protect the viable kidney tissue (12, 13).

Only two series are available on the evolution of oncocytomas that were not required surgically treated (14, 15). In a series Davis et al, Oncocytoma was diagnosed radiologically, with no histologic evaluation and twelve patients with suspected oncocytomas were followed for a mean of 7 years, and none of the tumors increased in size. So they concluded that oncocytomas are benign tumors with no further evolution when the final size is reached (15). However in series Neuzillet et al. reported fifteen patients with histologically proven oncocytomas that showed an increase in size. Six of their 15 patients needed surgery (14).

The natural history of oncocytomas follows a benign and usually slow-growing course not metastasize and have an excellent prognosis despite the occasional presence of invasive features such as lymphovascular, liver and perinephric fat tissue involvement (3, 14).

In conclusion, renal oncocytoma behaves as a benign

tumor, and the long-term prognosis is excellent. Nephron-sparing surgery is the mainstay of treatment, especially for patients with small tumors. However, as accurate preoperative diagnosis based on imaging studies was difficult. Therefore, it would be always acceptable treatment for oncocytoma is a radical nephrectomy.

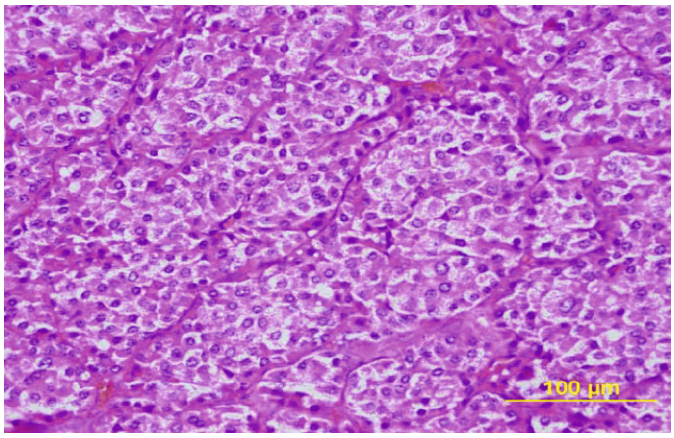

Figure 1: *In the microscopical examination of two cases, the tumour tissue is seen as alveolar structures which are composed of epithelial cells with oval nucleus, wide eosionophilic cytoplasms (H&E, x400)*

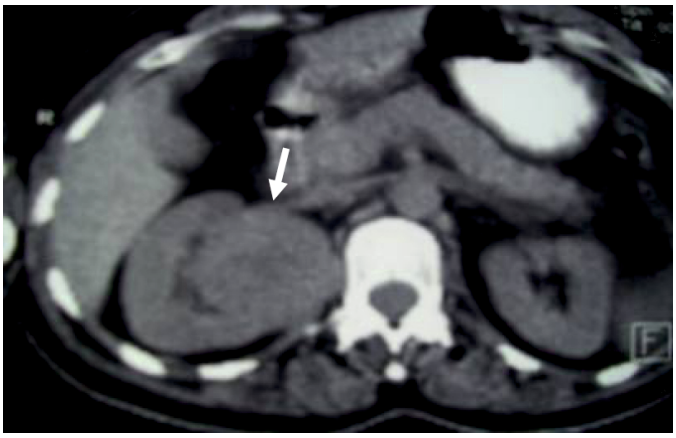

Figure 2: *Imaging of oncocytoma (arrow) (case 2) (diameter=6 cm).*

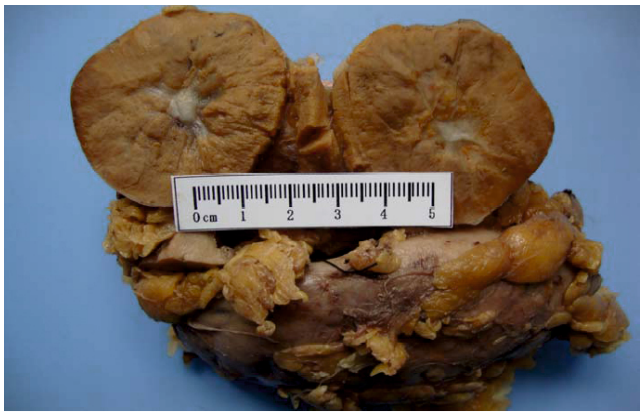

Figure 3: *Gross appearance of oncocytoma in the kidney (case 2). The lesions surface is typically well bordered and in its section fibrous central scar is seen.*

Yazarlarla ilgili bildirilmesi gereken konular (Conflict of interest statement) : Yok (None)

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