# 52 yaşındaki kadın hastada metanefrik adenom: Olgu sunumu ve literatür taraması

*Metanephric adenoma in a 52-year-old woman: Case report and review of literature*

**Halil Lütfi Canat[1], Basri Çakıroğlu[2], Turhan Çaşkurlu[3]**

[1] SB Kastamonu Dr Münif İslamoğlu Devlet Hastanesi, Üroloji Kliniği

[2] Hisar Intercontinental Hospital, Üroloji Kliniği

[3] İstanbul Medeniyet Üniversitesi Göztepe EAH, Üroloji Kliniği

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**Yazışma / Correspondence**
Halil Lutfi Canat
İstanbul Cad. 12/14. Kastamonu
Tel: 0505 688 42 34
E-mail: drhlcanat@gmail.com

**Abstract**

Metanephric adenoma (MA) is a rare renal neoplasm and is considered to have a good prognosis. It is often difficult to distinguish this entity from other malignant neoplasms preoperatively. We report a case of MA in the lower pole right kidney of a 52-year-old woman who presented with abdominal pain for two weeks. Relevant literature is reviewed and discussed.

**Key Words:** Metanephric adenoma, renal neoplasm, differential diagnosis.

**Özet**

Metanefrik adenom nadir görülen bir böbrek tümörüdür ve prognozu iyi kabul edilir. Preoperatif olarak diğer malign tümörlerden ayırt etmek genellikle zordur. Bu olgu sunumunda; iki hafta süreyle karın ağrısı olan 52 yaşındaki kadın hastanın sağ böbrek alt poldeki metanefrik adenom patolojili olgusunu rapor ettik. İlgili literatür gözden geçirilmiş ve tartışılmıştır.

**Anahtar Kelimeler:** Metanephric adenoma, renal neoplasm, differential diagnosis.

## Introduction

Metanephric neoplasms comprise a spectrum of kidney tumors containing renal epithelial or stromal cells or both (1). These tumors also designated nephronogenic nephroma or renal epithelial tumor resembling immature nephron, has just been recently recognized as a special type of benign renal epithelial tumor. Metanephric adenoma (MA) is a rare neoplasm, accounting for 0.2% of adult renal epithelial neoplasms (2). The majority of cases occurs in patients 50–60 years of age and is seen predominantly in females by a 2:1 ratio (3). The rare entity of metanephric adenoma is not well recognized yet by either clinicians or pathologists, not have the clinical and morphologic features of this tumor been well documented. Recently their benignity has been questioned with the publication of two cases, one with atypical histological features that metastasized to bone (1) and another with typical histological features which metastasized to lymph nodes (4). The purpose of this paper is to describe our clinical, imaging and histological / immunohistological observations of MA diagnosed in this case.

## Case Report

The patient was a 52-year-old woman with no previous health problem, who presented with abdominal pain for two weeks. Physical examination, laboratory findings and urine analysis did not any pathological findings. Abdominal ultrassonography (USG) showed a 4x3 cm nodular, solid and heterogenic lesion with hyperecogenic areas in the lower third of right renal parenchyma. Computed tomography (CT) showed; isodense with the characteristics of renal parenchyma unenhanced examination, at the early and late arterial phase were hypovascular, well-defined, spherical-shaped 3.5x 3 cm in size cystic mass lesion the lower pole right kidney (Figure 1). Considering all sonographical and radiological findings the mass was suspicious renal cell carcinoma. Right partial

nephrectomy was therefore performed.

The resected portion of the kidney contained a 3.8x2.8x3.0 cm tumor with central hemorrhagic cystic lesion. Cross-sectional face was gray-brown. On microscopy the tumor was together in a tight, uniform, small, round, consisting of tubular and acinar structures with surrounded by a thick fibrous capsule. Tumor cells were small, uniform and thin chromatin, round-oval nuclei, non prominent nucleoli, monotonous appearance showed. There was a loose stroma showing focal hyalinizasyon. There are a large number of the psammom body around the tumor. There was no mitotic figures. Immunohistochemically, the tumor showed diffuse positive staining for WT-1, vimentin and high molecular weight keratin. CD57 staining was detected in the medium-level. EMA, CK7, and low-molecular-weight keratin was observed focal positive staining. CD 10 and RCC were negative. According to histological and DNA cytometric analysis the final diagnosis of metanephric adenoma was made .

The patient received no adjuvant radiotherapeutical or chemotherapeutical therapy. She is without progress or metastasis after 8 months of follow up.

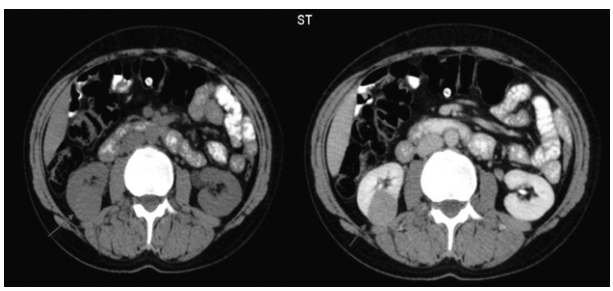


**Figure 1:** Computer tomography image of the abdomen in the axial plane. Arrows indicate the location of a mass.

**Discussion**

Around 100 cases of MA have been described individually or in aggregated studies and the name 'metanephric adenoma' has been uniformly accepted for these tumors (5). Clinical manifestations related to MA are very unspecific and sometimes even absent, being the majority of these renal tumors incidentally found (6). When present, signs and symptoms include abdominal or flank pain, hematuria, palpable mass, hypertension and fever. Our cases presented only abdominal pain. Among renal lesions, MA has the highest incidence (%12) of polycythemia. But it was not found in our case. MA ranges widely in size, most being 30-60 mm in diameter with the largest being 200 mm in diameter. Small cysts are present in about %10 of the tumors, as was also found in our case (7).

Some authors found adenomas to be hyperechoic at USG. MA has been described to show enhancement on contrast CT, but angiography reveals neither neovascularization nor tumor staining (8-9). On both T1- and T2-weighted MR images, the tumor is represented as an isointense mass (10). Bastide et al reported their imaging findings in nine patients, describing MA as a lesion with no vascular flow on color Doppler USG, presence of calcifications, and minimal enhancement in contrast CT (11). It is possible to realize that MA has same common findings, however none is so specific neither can exclude malignity. In our case USG showed nodular, solid and heterogenic lesion with hyperecogenic areas and CT showed; isodense at unenhanced examination, at the early and late arterial phase were hypovascular, well-defined, spherical-shaped cystic mass lesion.

MA as s highly cellular tumor composed of tightly packed small, uniform and round acini, mistaken as solid sheets on low power examination. Long branching and angulated tubular structures, papillae with glomeruloid structures and psammoma bodies were also seen in few of their cases (1,7). MA is composed of small epithelial cells with small regular nuclei, a high nuclei –to-cytoplasm ratio, and no mitotic figures (12). In our case; on microscopy the tumor was together in a tight, uniform, small, round, consisting of tubular and acinar structures with surrounded by a thick fibrous capsule, tumor cells were small, uniform and thin chromatin, round-oval nuclei, non prominent nucleoli, monotonous appearance showed and there are a large number of the psammom body around the tumor. There was no mitotic figures.

There is no immunohistochemical profile specific for metanephric adenoma (13). By analyzing all described findings at immunohistochemical and lectin histochemical studies, MA has shown reactivity for keratin, CD 57, vimentin, S-100 protein, EMA, lysozyme, a-1-antitrypsin, PNA, DBA, SBA and WT-1 (14). Torricelli at al. demonstrated that on immunohistochemic examination WT-1, EMA and CK7 locally positive (15). In our case

immunohistochemic examination revealed positive staining for WT-1, vimentin and high molecular weight keratin. CD57 staining was detected in the medium-level. EMA, CK7, and low-molecular-weight keratin was observed focal positive staining. CD 10 and RCC were negative.

As atypical cytologic features are very rare in MA, the authors considered various possiblities including cystic nephroma with intraluminal and mural malignant tumor, papillar renal cell carcinoma, Willm's tumor, collecting duct carcinoma, cystic partially differentiated nephroblastoma, in differential diagnosis (13).

Most reports describe total nephrectomy as gold standard treatment for MA, but partial nephrectomy must be considered a good option. Our patient was also treated with partial nephrectomy, procedure with better renal function preservation, without compromising the patient's survival. Ebine et al (16) in 2004 for MA treatment in a 31 years old female patient with a left renal mass of 4.5 cm detected incidentally during an abdominal ultrasound examination. Three years latter, Kumar et al (17)reported a laparoscopic partial nephrectomy as treatment for MA in a 47-year-old patient. In the biggest MA series reported, Bastide et al (11) performed four radical and five partial nephrectomies.

As a result MA is a rare renal neoplasm. Taking into account atypical cytological features and potential for metastasis, they should not be considered entirely benign thus necessitating follow-up.

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