

## METANEPHRIC ADENOMA OF KIDNEY: A RARE RENAL NEOPLASM

Varsha Pandey<sup>1</sup>

<sup>1</sup>Assistant Professor, Department of Pathology, Chandulal Chandrakar Memorial Medical College.

### ABSTRACT

**INTRODUCTION:** Metanephric adenomas are rare neoplasm of the kidney with less than 200 cases reported, and though benign, an increase in the familiarity of this pathology may lead to less invasive treatments in the future. We report a case of a metanephric adenoma of right kidney in a 50 year-old female.

### KEYWORDS

Kidney Metanephric Adenoma, Benign.

**HOW TO CITE THIS ARTICLE:** Varsha Pandey. "Metanephric Adenoma of Kidney: A Rare Renal Neoplasm". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 53, December 03, 2015; Page: 8755-8756, DOI: 10.18410/jebmh/2015/1220

**INTRODUCTION:** Metanephric adenoma is a rare neoplasm of kidney, accounting for 0.2% of adult renal epithelial neoplasms.<sup>[1]</sup> It usually presents in patients of 50–60 years of age<sup>[2,3,4]</sup> and show female preponderance by a 2:1 ratio.<sup>[3]</sup> Although metanephric is usually benign, a few cases of metastatic disease have been reported.<sup>[5,6]</sup> The two most important differential diagnosis of metanephric adenoma include Wilm's tumour & papillary variant of renal cell carcinoma. We describe here a case of a renal mass and the challenge of establishing a preoperative diagnosis.<sup>[6]</sup>

**CASE REPORT:** A 50 years old female presented with vague but persistent pain and heaviness in the left flank for few months. There was no history of fever or haematuria. Physical examination was unremarkable. Ultrasonography and CT scan detect renal tumour involving upper pole of right kidney measuring 3x2cm. Diagnosis of renal cell carcinoma was made clinically & radiologically and radical nephrectomy was performed.

**GROSS FEATURES:** Right radical nephrectomy specimen was received measuring 3.5x2.5x2 cm, which showed a tan grey, well-circumscribed solid tumour involving the upper pole of kidney. Cut surface was solid and grey-white. The rest of the kidney was not involved.

**MICROSCOPIC FEATURES:** The tumour was composed of closely packed small tubules and acini. The acini were arranged in clusters separated by bands of acellular, hyalinized oedematous stroma. Individual cells of the acini were small, having round to oval basophilic nuclei. No nucleoli, nuclear atypia or mitosis were seen. The surrounding renal parenchyma was not involved by tumour.

**DISCUSSION:** Kidney develops from metanephric blastema. If their remnants are present in parenchyma, they can give rise to Wilm's tumour or metanephric adenoma. Metanephric adenoma is benign counterpart of Wilm's tumour in adults.<sup>[7]</sup> The mean age of presentation is 41.<sup>[8]</sup> It is a benign, well-differentiated tumour in adults.<sup>[9]</sup> There has been one report in a 7-year-old child with an metanephric adenoma that had metastasize to the paraaortic, hilar, and aortic bifurcation lymph nodes.<sup>[10]</sup> It may be often incidental findings on imaging.<sup>[11]</sup> It usually presents with haematuria, flank pain, or abdominal mass. Twelve percent of patients present with polycythaemia Vera which is higher than that of other renal neoplasms.<sup>[11,12]</sup> Tissue cultured from a metanephric adenoma was found to produce significantly elevated concentrations of erythropoietin.<sup>[13]</sup> Unfortunately, there are no definitive radiologic findings in metanephric adenoma that can differentiate them from other renal masses.<sup>[14,15]</sup> It has been reported that there is a higher incidence of calcifications in metanephric adenoma (20%) than other renal neoplasms on CT, but this is not diagnostic. Most often, they present as solitary well-circumscribed and well-defined tumours.<sup>[12]</sup> Histopathology has shown to reveal primitive type, uniform, small cells with scant cytoplasm, without mitosis, distributed in small round acini, and phenotypically similar to nephroblastomas.<sup>[16]</sup> One case of a 78-year-old was reported in which metanephric adenoma was diagnosed with a renal biopsy and was treated with surveillance.<sup>[17]</sup> Four other studies showed similar histologic findings leading to the diagnosis of metanephric adenoma using fine-needle aspiration.<sup>[10]</sup> Renal biopsy can in this setting obviate the need for surgical intervention.

Historically, patients with metanephric adenomas treated with partial or total nephrectomy have an excellent prognosis. Due to its benign history and surgical treatment, the follow-up has been short and not well documented.<sup>[18]</sup>

**CONCLUSION:** Metanephric adenomas are morphologically distinct benign renal tumours with characteristic histological features. Hence, it is important to diagnose this tumour preoperatively to allow surgeons to avoid a radical nephrectomy in favour of a more conservative surgery.

Submission 21-11-2015, Peer Review 23-11-2015,

Acceptance 30-11-2015, Published 03-12-2015.

Corresponding Author:

Dr. Varsha Pandey, B 36, VIP Estates,  
Vidhan Sabha Road, Raipur, Chhattisgarh.

E-mail: varshanema@live.com

DOI: 10.18410/jebmh/2015/1220

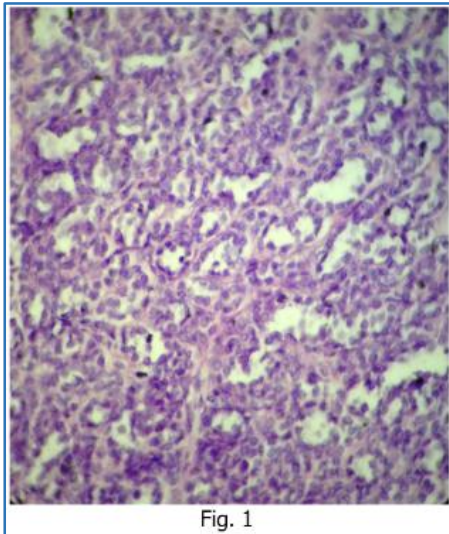


Fig. 1

**REFERENCES:**

1. Amin MB, Amin MB, Tamboli P, et al. Prognostic impact of histologic subtyping of adult renal epithelial neoplasms: an experience of 405 cases. *Am J Surg Pathol.* 2002; 26: 281–91.
2. Burger M, Junker K, Denzinger S, et al. Metanephric adenoma of the kidney: a clinicopathological and molecular study of two cases. *J Clin Pathol.* 2007; 60: 832–3.
3. Schmelz HU, Stoschek M, Schwerer M, et al. Metanephric adenoma of the kidney: case report and review of the literature. *Int Urol Nephrol.* 2005; 37: 213–7.
4. Renshaw AA, Freyer RD, Hammers AY. Metastatic metanephric adenoma in a child. *Am J Surg Pathol.* 2000; 24: 570–4.
5. Pins MR, Jones EC, Martul EV, et al. Metanephric adenoma-like tumours of the kidney: report of three malignancies with emphasis on discriminating features. *Arch Pathol Lab Med.* 1999; 123: 415–20.
6. Nakagawa T, Kanai Y, Fujimoto H, et al. Malignant mixed epithelial and stromal tumours of the kidney: a report of the first two cases with a fatal clinical outcome. *Histopathology.* 2004; 44: 302–4.
7. Bas S, Yoshi S, Tsuruta A, Gotoh Y, Onda T, Shimizu Y, Shibata. Metanephric adenoma of the kidney: ultrastructural immunohistochemical and lectin histochemical studies. *Pathol Int* 1996, 46: 661-666.
8. S. R. Granter, J. A. Fletcher, and A. A. Renshaw, "Cytologic and cytogenetic analysis of metanephric adenoma of the kidney: a report of two cases," *American Journal of Clinical Pathology*, vol. 108, no. 5, pp. 544–549, 1997.
9. P. Argani, "Metanephric neoplasms: the hyperdifferentiated, benign end of the wilms tumour spectrum?" *Clinics in Laboratory Medicine*, vol. 25, no. 2, pp. 379–392, 2005.
10. A. A. Renshaw, D. R. Freyer, and Y. A. Hammers, "Metastatic metanephric adenoma in a child," *American Journal of Surgical Pathology*, vol. 24, no. 4, pp. 570–574, 2000.
11. C. Bastide, J.-J. Rambeaud, A. M. Bach, and P. Russo, "Metanephric adenoma of the kidney: clinical and radiological study of nine cases," *BJU International*, vol. 103, no. 11, pp. 1544–1548, 2009.
12. S. P. Raman, R. H. Hruban, and E. K. Fishman, "Beyond renal cell carcinoma: rare and unusual renal masses," *Abdominal Imaging*, vol. 37, no. 5, pp. 873–884, 2012.
13. S. R. Prasad, V. R. Surabhi, C. O. Menias, A. A. Raut, and K. N. Chintapalli, "Benign renal neoplasms in adults: cross-sectional imaging findings," *American Journal of Roentgenology*, vol. 190, no. 1, pp. 158–164, 2008.
14. T. Araki, H. Hata, E. Asakawa, and T. Araki, "MRI of metanephric adenoma," *Journal of Computer Assisted Tomography*, vol. 22, no. 1, pp. 87–90, 1998.
15. R. Fielding, A. Visweswaran, S. G. Silverman, S. R. Granter, and A. A. Renshaw, "CT and ultrasound features of metanephric adenoma in adults with pathologic correlation," *Journal of Computer Assisted Tomography*, vol. 23, no. 3, pp. 441–444, 1999.
16. C. J. Davis Jr., J. H. Barton, I. A. Sesterhenn, and F. K. Mostofi, "Metanephric adenoma: clinicopathological study of fifty patients," *American Journal of Surgical Pathology*, vol. 19, no. 10, pp. 1101–1114, 1995.
17. N. Zafar, D. Spencer, and A. D. Berry III, "Embryonal adenoma of the kidney: a report of two cases," *Diagnostic Cytopathology*, vol. 16, no. 1, pp. 42–46, 1997.
18. Algaba F. Renal adenomas: pathological differential diagnosis with malignant tumours. *Adv Urol.* 2008 974848.