Oncocytic papillary renal cell carcinoma in a monorenal patient: a case report.

Oncocytic papillary renal cell carcinoma:
- recently classified in papillary renal cell carcinoma (PRCC) group
- considered as low-grade neoplasm
- indolent clinical course and rare metastasizing cases
**Morphology:** solid/papillary tumor composed of large cells with deeply granular eosinophilic cytoplasm, spherical nuclei, occasionally prominent nucleoli, and low nucleus to cytoplasm ratio.

**ICH:** Racemase+, CD10+ CK7+ (similar to PRCC type 1)

**Genetics:** often trisomy of chromosomes chr. 7, 17
less frequently loss of chr. Y.

**Differential diagnosis:** oncocytoma, chromophobe RCC, clear cell eosinophilic RCC (CC-RCC), oncocytoma-like angiomyolipoma and unclassified renal cell tumor could be challenging.
A 65 years old woman, with a clinical history of right nephrectomy (for a clear cell-RCC), presented radiologically an exophytic nodule at the superior pole of the left kidney, resembling an oncocytoma (diameter: 3 cm).

A diagnostic ago-biopsy was performed and a surgical enucleation was decided because of the radiological and histologic features of the lesion.

Either biopsy and surgical specimen were analyzed histologically, immunohistochemically and with FISH analysis of 7-17 chromosomes.
Exophytic nodule at the superior pole of the left kidney with a rich perilesional vascularization;
Diameter: 3 cm.
Macroscopy: multiple fragments (length range 0.2-0.7 cm).

Microscopy: neoplasm composed by a solid-tubular and focally micropapillary neoplasm with thin-capillary vascularization. Focal microaggregates of foamy cells were identified. Lesion was composed by medium-large sized eosinophytic neoplastic cells with finely granular cytoplasm (Fuhrman grade 2).

ICH: diffuse membrane positivity for CD10, RCC, Vimentin and Racemase (CK7 neg).

Genetics: FISH analysis revealed only disomic cells for chromosomes 7-17.

Differential diagnosis: oncocytoma, chromophobe carcinoma and an oncocytic papillary RCC.
Results: Ago-biopsy (2/3)

Foamy cells

“Micropapillary”
Results: Ago-biopsy (3/3)

**Diagnosis:** oxyphilic renal cell neoplasm.

Agobiopsy did not solve completely differential diagnosis between oncocytoma, chromophobe carcinoma and an oncocytic papillary RCC.
**Results: nodule resection (1/3)**

*Macroscopy:* grey-brown neoplasm of 3.5 cm partially capsulated.

*Microscopy:* in comparison with the ago-biopsy, surgical specimen revealed rare well formed papillary structures, Fuhrman grade 3.

*ICH:* positivity for CD13, CD10, RCC, Vimentin, Racemase (CK7 neg.)

*Genetics:* disomia of 7-17 chromosomes was confirmed.
Results: nodule resection (2/3)

Foamy cells
Results: nodule resection (3/3)
Diagnosis: oncocytic papillary renal cell carcinoma

Conclusions: We described an oncocytic papillary renal cell carcinoma with a less frequent genetic pattern (disomia of 7-17), in a complex clinical background (monorental patient), and in a multisteps diagnostic process. An accurate morphologic observation with immunohistochemical and genetic aids, allowed the correct diagnosis and it helped the management of the lesion.
- Oncocytic papillary renal cell carcinoma: a clinicopathologic, immunohistochemical, ultrastructural, and interphase cytogenetic study of 12 cases.

- Oncocytic papillary renal cell carcinoma: potential pitfall in small enucleation.
Pathologica 2012 Jun; 104(3): 98-100. G. Martignoni et al

- Oncocytic papillary renal cell carcinoma with solid architecture: mimic of renal cell oncocytoma

- Gains of chromosomes 7, 17, 12, 16, and 20 and loss of Y occur early in the evolution of papillary renal cell neoplasia: a fluorescent in situ hybridization study.

- Clinicopathologic and interphase cytogenetic analysis of papillary (chromophilic) renal cell carcinoma.

- Renal tumors in the Birt-Hogg-Dubé syndrome

- "Diagnostic Pathology Genitourinary" Amin 1st edition
- “Pathology and Genetics of Tumours of the Urinary System and Male Genital Organs” WHO 2004