同窓会賞

42. *RENAL ONCOCYTOMA WITH INTRAVASCULAR EXTENSION INTO THE BRANCHES OF RENAL VEIN*

Naoto Kuroda,[1] Ondrej Hes,[2] Michal Michal,[2] Radek Šíma,[2] Tomáš Vaněček,[2] Matteo Brunelli,[3] Guido Martignoni,[3] Isabel Alvarado Cabrero,[4] Delia Perez-Montiel,[5] Ximing Yang[6]

[1]Department of Pathology, Kochi Red Cross Hospital (Department of Pathology, Kochi Medical School, Kochi University), Japan, [2]Department of Pathology, Charles University Hospital Plzeň, Czech Republic, [3]Department of Pathology, Verona University, Italy, [4]Department of Pathology, Centro Medico Mexico City, United Stades of Mexico, [5]Department of Pathology, Institute Nacional de Cancerología, Mexico City, United Stades of Mexico, [6]Department of Pathology, Weill Medical College of Cornell University, New York, NY, USA

Background

Renal oncocytomas (ROs) with renal vein extension are extremely rare. To the best of our knowledge, there are no reports on genetic study of ROs with renal vein extension.

Materials and Methods

We identified 7 ROs with extension into the branches of renal vein and performed clinicopathological study, immunohistochemistry, ultrastructure and molecular genetic analysis (FISH, LOH of 3p, *VHL* gene mutation, array CGH).

Results

The age of 7 patients ranged from 61 to 82 years. Five cases were identified incidentally, 2 patients had gross hematuria. After surgery, all patients were alive and free of tumors with follow-up of 1 to 5 years (mean = 3.6). ROs measured from 2.2 cm to 7.5 cm. Renal vein extension was grossly suspected in 5/7 cases and histologically confirmed in all 7 cases. Tumor cells were positive for cytokeratins, MIA (mitochondrial-antigen), EMA and parvalbumin; 5/7 tumors were focally positive for CD117. Ultrastructurally, the cytoplasm was packed by mitochondria. Molecular genetic analysis did not detect abnormal numbers of chromosomes 1, 2, 6, 7, 10, 17 and XY by fluorescence in situ hybridization, LOH on 3p and mutation of *VHL* gene in all cases. Array CGH analysis of two cases did not show any major genetic changes.

Conclusions

1) ROs may have intravascular extension to the branches of the renal vein. 2) ROs with intravascular extension to the branches of the renal vein have the same morphological, immunohistochemical and cytogenetic findings as have their counterparts without evidence of intravascular invasion. 3) the absence of metastases suggests an overall benign behavior of this tumor, but this has to be substantiated by further studies with a long-term follow-up 4) in a renal tumor with granular cytoplasm showing renal vein extension, it is necessary to carefully exclude renal cell carcinomas (RCCs) such as chromophobe RCC, oncocytic variant of papillary RCC and granular variant of clear cell RCC.