# Pathology - Renal Cancer

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- Clear cell carcinoma: comprises >70% of renal lesions
  - VHL gene mutation principle event. Recent association between VHL protein and hypoxia inducing factor [HIF] protein ties pathology into angiogenesis cascade pathway.
- Papillary carcinoma: comprises 10-15% of renal lesions
  - Sporadic and hereditary forms
  - Associated with alterations in chromosomes 7, 17, and Y
  - Generally better survival

Read more on "A Molecular Classification of Papillary Renal Cell Carcinoma"

- Chromophobe tumors: 5 % of cases
  - Loss on chromosome 1
- Collecting duct carcinoma: one percent or less of cases
  - Can mimic transitional cell Ca
  - Generally poor outcome
- Oncocytoma: 5 % of renal tumors
  - Generally localized and encapsulated. 5% bilaterality
  - Mahogany brown color, acidophilic cells secondary to dense mitochondrial hyperplasia
  - Distinction from renal cell cancer difficult on imaging or needle biopsy. Best treated with surgical removal
- Angiomyolipoma: Renal Hamartomas comprised of fat, muscle and blood vessels. Tissue signature on CT by demonstration of negative Hounsfield units.
  - Sporadic, isolated lesions present age 35-50 with a 4:1 female ratio
  - Tuberous Sclerosis patients demonstrate multiple and bilateral lesions. 80% of patients will develop AML.
  - Treatment based on tumor size: those <4 cm are observed, those >4cm undergo selective angioembolization or partial nephrectomy
- Renal Sarcoma
  - Pure sarcoma is rare and usually lieomyosarcoma
  - All tumor types can degenerate towards sarcoma
  - Generally poorer outcome
- Rare Renal lesions
  - Adult Wilms tumor
  - Lymphoma
  - Xanthogranulomatous Pyelonephritis [XPG]
  - Haemangiopericytoma
    From the BJU International Mini Reviews: Renal Haemangiopericytoma: The Characteristics of a Rare Tumour.

## References

- Bostwick DG, Eble JN: Diagnosis and classification of renal cell carcinoma. Urol Clin N Am 26:627-635, 1999.
- Caddeddu JA, Ono Y, Clayman RV, et al: Laparoscopic nephrectomy for renal cell cancer: Evaluation of efficacy and safety: A multicenter experience. Urology 52:773-777, 1998.
- Levy DA, Slaton JW, Swanson DA, Dinney CP: Stage specific guidelines for surveillance after radical nephrectomy for local renal cell carcinoma. J Urol 15:1163-1167, 1998.
- Montie JM: Lymphadenectomy for renal cell carcinoma. Semin Urol 7:181-185, 1989.
- Motzer RJ, Bander NH, Nanus DM: Renal-cell carcinoma. N Engl J Med 335:865-875, 1996.
- Novick AC: Renal-sparing surgery for renal cell carcinoma. Urol Clin North Am 20:277-282, 1993.
- Sagalowsky AI, Kadesky KT, Ewalt DM, Kennedy TJ: Factors influencing adrenal metastasis in renal cell carcinoma. J Urol 151:1181-1184, 1994.
- Skinner DG, Pritchett RT, Lieskovsky G, Boyd SD, Stiles QR: Vena caval involvement by renal cell carcinoma. Surgical resection provides meaningful long-term survival. Ann Surg 210:387-394, 1989.
- Sufrin G, Cashon S, Golio A, Murphy GP: Paraneoplastic and serologic syndromes of renal adenocarcinoma. Semin Urol 7:158-171, 1989.
- Yang JC, Topalian SL, Parkinson D, et al: Randomized comparison of high-dose and low-dose intravenous interleukin 2 for the therapy of metastatic renal cell carcinoma: An interim report. J Clin Oncol 12:1572-1576, 1994.