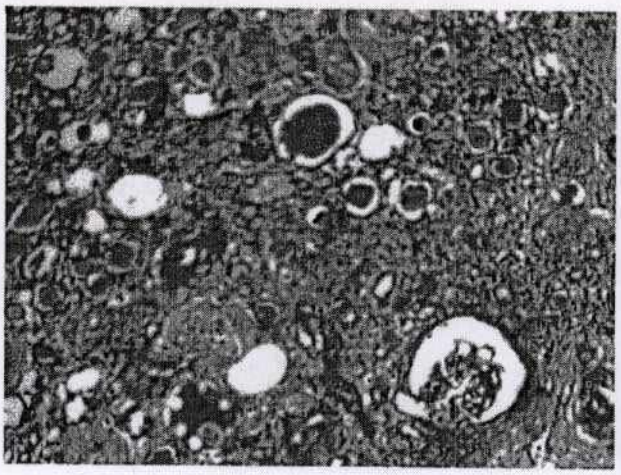
105 : 59 / 2013

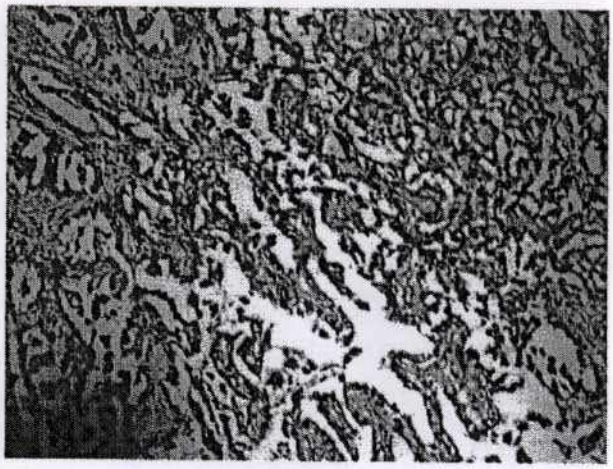
A 52 year old man underwent right side nephrectomy for a non functional kidney. Kidney measured 4.5 x 4.5 x2 cm with attached ureter measuring 7 cm in length. The renal capsule was adherent to the cortical surface which showed irregular scars. Cut section showed grey white areas with cystic change.A grey white nodule measuring 1.0 cm in diameter was seen at the cortex.

Microscopy showed focal hyalinization of glomeruli, atrophy and thyroidisation of tubules, interstitial fibrosis with chronic inflammatory infiltrate and hyperplastic arteriosclerosis.[Fig:1] Sections from nodule showed tumor cells arranged in papillary and tubule formation lined by cuboidal to hobnail cells having round nucleus with vesicular chromatin and inconspicuous nucleoli.[Fig:2]

Qusetions

1. What is the diagnosis?
2. What is the cytogenetic abnormality seen in this condition?
3. What is the most important differential diagnosis to be considered?





Corresponding author:
Dr. Vidyavathi.K,
Departmentt of Pathology,
Sri DevarajUrs Medical College,
Tamaka, Kolar

Answer on page No. 105

Answer to Quiz (Page No. 101)

Diagnosis: Chronic pyelonephritis with papillary renal cell carcinoma(RCC)

Papillary RCC accounts for approximately 10-15% of RCC. Histologically they have papillary or tubulopapillary architecture with true fibrovascular core which may be hyalinised, thickened or expanded by foamy macrophages. Two morphological subtypes are recognized.[1] Type 1 accounts for two thirds of papillary RCC. Papillae are lined with a single layer of uniform small cells with round nuclei and inconspicuous nucleoli and belong to Furhman grade 1 and 2. Type 2 accounts for remaining one third of cases. The cells have abundant eosinophilic cytoplasm, nuclei are pseudostratified with prominent nucleoli and belong to Furhman grade 3.[2]

The histogenesis of papillary RCC is unclear with evidence suggesting that the cell of origin is in the proximal and distal convoluted tubule. Papillary RCC demonstrates unique cytogenetic aberrations of trisomy 7,17 and loss of Y.[2]

The most important differential diagnosis to be considered is papillary adenoma. These two entities are histologically and cytogenetically identical and are currently separated in the WHO classification purely based on size.[3]Tumors less than 0.5 cm in maximum diameter are designated as papillary adenoma.The papillary neoplasm in our case was 1.0 cm in diameter and belonged to Type 1 papillary RCC. The tumor was seen reaching upto the renal capsule and there was no vascular invasion.

In conclusion, papillary adenoma and papillary carcinoma may represent a continuum of the same biological process.They may be seen in chronic end stage renal disease, and in acquired renal cystic disease. Unfortunately, it is not possible to define an unequivocally benign papillary renal adenoma, for this reason WHO used the size (arbitrarily)as a marker. Hence careful and exhaustive assessement of specimen and histology sections is needed when there is no clinical suspicion of malignancy.

REFERENCES

1. Delahunt B, Eble JN. Papillary renal cell carcinoma: a clinicopathologic and immunohistochemical study of 105 tumors. Mod Pathol 1997;10:537-44.

2. Flecther CDM, eds. Diagnostic Histopathology of tumors, 3rd Ed.Philadelphia, PA: Elsevier; 2007:495-96.

3. Eble JN, Sauter G, Epstein JI, Sesterhenn JA. eds .World Health Organisation of tumors Genetics of tumors of urinary bladder and male genital system. Lyon; IARC Press, 2004.

Source of Support: Nil Conflict of Interest: Nil