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Renal Adenomatosis – Incidental Finding in a case of Hydronephrosis – A Case Report

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Abstract: The incidence of renal papillary adenoma is 7% and 40% in nephrectomy and autopsy specimens respectively. The current WHO 2016 criteria for the diagnosis of renal adenoma includes unencapsulated lesion with papillary or tubular or tubulopapillary architecture, ≤ 15mm lesion of low nuclear grade.
Keywords: nuclear grade, papillary adenoma, unencapsulated .

INTRODUCTION:

The reported incidence of renal papillary adenoma is 7% in nephrectomy specimens and 10-40% in autopsies [1]. Papillary adenomas are frequently found incidentally at autopsy as well as in nephrectomies performed for other diseases. Though it can be observed in every age group, it can be detected in 10% and 40% of the patients younger than 40 or older than 70 years of age, respectively [2].

CASE HISTORY:

56 years male presented to urology opd with sudden onset of loin pain one month back for which he visited some hospital where he was diagnosed with renal obstruction and urinary tract infection. The findings were confirmed by clinical and radiological investigations and patient was posted for left simple nephrectomy. Per operative findings revealed hydronephrosis of left kidney and the clinical diagnosis of non-functioning left kidney was given. Patient was posted for surgery and the specimen was sent for histopathological examination.

Specimen sent – left simple nephrectomy specimen

Gross (figure.1.): received left kidney specimen measuring 12x7x5 cm. Capsule was non-adherent to cortical surface, cortical surface irregular showing multiple cystic swelling measuring 0.1-0.5cm and filled with clear fluid. Cut section – pelvicalyceal system was dilated with blunting of calyces. Cortex was thinned out.

Fig 1: gross specimen – nephrectomy specimen hydronephrosis with multiple cysts on the outer surface. Cut surface (inset) shows dilated pelvicalyceal system

Histopathology (figure.2.) shows renal tubules with features of thyroidisation, cystic dilatation and atrophy with interstitium showing dense chronic inflammatory cell infiltration (lymphocytes, plasma cells, macrophages) and variable degree of fibrosis. Focal glomeruli show hyaline change. Renal vessels show normal histology. Also seen are multiple well circumscribed foci of papillary projections lined by cuboidal cells of low nuclear grade. Final diagnosis of Chronic Pyelonephritis with Renal Adenomatosis was given.

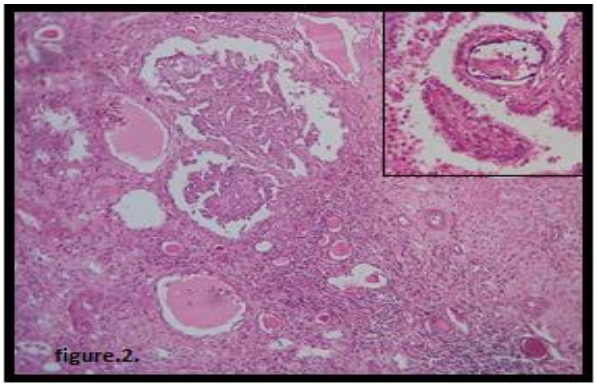

Fig 2: Microscopic slide (10x, H&E) shows thyroidisation of renal tubules, interstitial inflammation and circumscribed foci of papillary projections with no atypia. Inset(40x,H&E)

DISCUSSION

Papillary adenoma occurs more frequently in kidneys scarred from chronic pyelonephritis or renal vascular disease, long term hemodialysis, acquired renal cystic disease and in children with von Hippel-Lindau syndrome [3], nephrectomies for papillary renal cell carcinoma (PRCC) and in patients with hereditary renal cell carcinoma [4]. Majority of the patients remain asymptomatic and the tumours are undetectable radiologically owing to their small size [5].

Presence of multiple adenomas (≥5) is termed 'renal adenomatosis' which is seen quite rarely [6]. This term is firstly used by Syrjanen in 1979 [7].

Bilge Can *et al.;* reported case of renal adenomatosis in 47 years male with underlying urolithiasis and hydronephrosis [2]. Bilge Can et al justified adenomatosis on the ground of marked hydronephrosis, and chronic renal damage secondary to urolithiasis. Since functionality of the contralateral kidney was preserved, chronic renal failure did not develop, and thus the patient did not require dialysis therapy [2]. Our case shows similarities to the case reported by Bilge *et al.;* [2]. We also reported renal adenomatosis as an incidental finding in a case of chronic pyelonephritis.

Spence *et al.;* reported renal adenomatosis with papillary renal cell microcarcinoma and underlying hydronephrosis in 33 years male [12, 8] Menendez *et al.;* and Mazzucchelli *et al.;* reported renal adenomatosis with concomitant oncocytoma in a case of acquired cystic renal disease [9, 10].

Who 2016 classification defines papillary adenomas as unencapsulated tumors with papillary or tubular architecture , measuring diameter of 15mm with low nuclear grade and no capacity to metastasize [11,4] compared to the papillary adenomas defined until 2015 measuring <0.5cms. They are usually well circumscribed, yellow to greyish white nodules occurring just below the renal capsule. Subcortical solitary renal adenoma is considered to be the most frequently encountered renal epithelial tumor [2].

The microscopic morphology of papillary adenoma resembles closely with both types 1 and 2 papillary renal cell carcinoma [12]. The lesions with clear cells are considered malignant regardless of the size. Renal papillary adenoma shares few important morphological features with papillary renal cell carcinoma such as papillary architecture, psammoma bodies and presence of foamy histiocytes in the papillary cores [5].

The differential diagnosis of papillary renal cell carcinoma (PRCC), metastatic papillary carcinoma and metanephric adenoma should be ruled out. PRCC and renal papillary adenoma show trisomies of chromosome 7 and 17 and loss of chromosome Y [13]. But papillary adenoma is a small (0.5 cm or smaller), well circumscribed, unencapsulated tumour which does not show any nuclear atypia or mitosis. The cells have scanty to moderate amount of eosinophilic cytoplasm. There is no immunohistochemical, molecular or electron microscopic finding that can unequivocally define this neoplasm [13]. The overlapping features for these lesions include papillary architecture, psammoma bodies and presence of foamy histiocytes in the papillary cores.[5]. If the nuclear features appear clear, irrespective of the size of the lesion, it should possibility of PRCC is more compared to adenoma.

Immunohistochemistry shows higher sensitivity, and specificity of AMACR positivity for PRCC [14] Wang et al. stated that strong AMACR positivity was observed both in PRCC, and concomitant adenomas, while adenomas associated with ARCC were AMACR -negative which suggests that AMACR positivity might be an early sign representing carcinomatous transformation.[15]. CK7, AMACR, CD10 are the markers to be considered for the diagnosis. Hence renal papillary adenomas are considered to be benign lesions with no metastatic potential and a good prognosis

CONCLUSION:

We reported a case of hydronephrosis of left kidney where the predominant lesion was chronic pyelonephritis with multiple renal papillary adenomas. It is important to rule out associated PRCC

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