Epidermoid renal cyst - An unusual case report and review of literature

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ABSTRACT

Epidermoid cyst in the kidney is an exceptionally rare entity. Only a few cases have been reported. The aim of reporting this case is to highlight its rarity and to create awareness of the entity as a differential diagnosis of cysts in the kidney. We report a case of a 37-year-old lady who presented with loin pain of 1 year duration. Imaging studies revealed hydroureteronephrosis with multiple calculi and a cyst in the kidney. Histological examination revealed epidermoid cyst.

Key words: *Benign cysts, Epidermoid cyst, Kidney*

Simple cysts in the kidney are very common lesions and account for 70% of asymptomatic cystic lesions, whereas, an epidermoid cyst in the kidney is an exceptionally rare entity and till now only nine cases have been reported in literature [1]. The term epidermoid cyst refers to those cysts that arise from epidermal elements. The histogenesis proposed is that it originates from epidermal remnants of the "Wolffian duct," secondary to trauma or due to irritation by calculi [2]. There are various conditions where squamous elements are seen in the kidney. The major clinical implication is to diagnose epidermoid cyst and differentiate it from other conditions. A preoperative biopsy to establish a diagnosis will avoid unwarranted surgery.

CASE REPORT

A 37-year-old lady presented to the hospital with pain in the left flank of 1 year duration. The pain was dull ache in nature, moderately severe, and intermittent requiring hospitalization sometimes and was radiating anteriorly. The patient also gave a history of decreased urinary output on and off since 1 year, which was not associated with fever, nausea, or vomiting and a history of burning micturition since 1 month.

On examination, the patient was a moderately built lady. All vitals were normal. There was no organomegaly. There was mild tenderness in the loin region. Cardiovascular and respiratory system examination was not remarkable. Routine biochemical investigations revealed blood urea of 17 mg/dl, serum creatinine of 0.7 mg/dl, serum electrolytes revealed sodium of 137 meq/l, potassium 4 meq/l, and chloride of 109 meq/l. Hematology investigations revealed hemoglobin of 11.0 g%, total leukocyte count of 11,300/cumm, and platelet count of 3.39 lakhs/cumm. Erythrocyte sedimentation rate was 18 mm/1st hour. Complete urine examination revealed a few red blood cells. No malignant cells are seen. Urine culture was sterile. X-ray kidney ureter bladder (KUB) region revealed multiple calculi. Computerized tomography scan of KUB region revealed left hydroureteronephrosis with multiple calculi. Upper pole of the kidney revealed a cyst 2 cm × 2.5 cm. There was compensatory hypertrophy on the right side. A diethylenetriamine pentaacetate scan revealed contracted kidney with parenchymal dysfunction. There was hydronephrosis and decreased cortical function. In view of the loss of cortical function and multiple calculi, nephrectomy was performed.

On gross examination, the nephrectomy specimen weighed 70 g, measured 8 cm×4 cm ×3 cm. A pelvicalyceal system was dilated, and there were multiple calculi. The upper pole revealed a cyst measuring 2.5 cm × 1.8 cm × 1.5 cm. (Fig. 1) The cyst was filled with granular friable gray tan material. Microscopically sections revealed dilated calyces lined by transitional epithelium. The lining was flattened, and at places, adjacent renal parenchyma had many sclerosed glomeruli with chronic tubule-interstitial changes. Vessels revealed sub intimal thickening and narrowing of the lumen. Sections through the cyst revealed lining composed of stratified squamous epithelium. Lumen has many laminated keratin flakes. No adnexal was seen in the wall (Fig. 2). The patient is on regular follow-up, and presently, she is asymptomatic.

DISCUSSION

Simple cysts of the kidney are common and account for 70% of asymptomatic cystic lesions of the kidney. Epidermoid cysts are very rare cystic lesions. This entity was first described in the literature by Krogdahl [3]. An epidermal inclusion cyst is common in the skin. They occur in various organs such as the central nervous system, jaws, ovary, spleen, and testis [4]. Occurrence in the kidney is uncommon. Epidermoid cyst in the

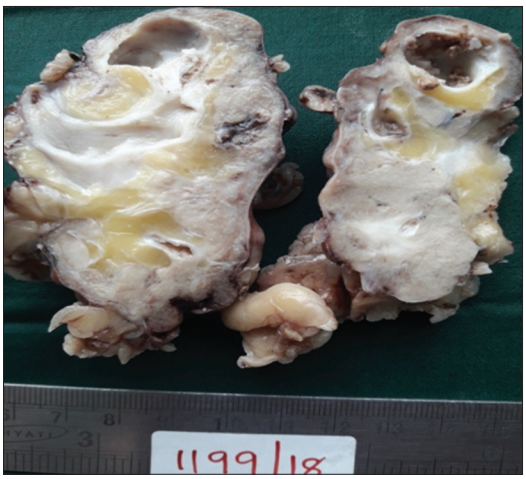

Figure 1: Cut section of the nephrectomy specimen with a cyst in the upper pole

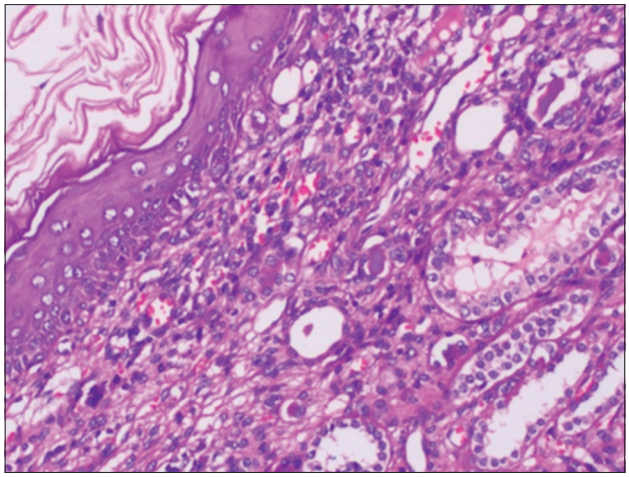

Figure 2: Sections show renal parenchyma with a cyst showing lining composed of squamous epithelium with laminated keratin in the lumen

kidney is lined by stratified squamous epithelium with a granular layer with laminated keratin, as present in the cysts of the skin. While dealing with calcified renal masses, epidermoid cysts should be considered in the differential diagnosis. Calcified non-homogenous intrarenal mass associated with calculi are important clues to diagnose an epidermoid cyst. A non-calcified renal mass is highly suggestive of malignancy.

The exact histogenesis of this lesion is unknown. It was suggested that epidermal remnants of the "Wolffian duct," squamous metaplasia after chronic irritation with renal calculi [5] and traumatic implantation [6] are the possible causes of epidermoid cysts in the kidney. Lim and Kim. described an epidermoid cyst developing after lithotripsy for renal calculi [6]. The present case under discussion was associated with renal calculi, and chronic irritation was the possible cause. The presence of stratified squamous epithelium in renal lesions has different etiologies. Extension of metaplastic squamous epithelium from ureter due to prolonged obstruction is the most common source of squamous epithelium in the kidney [7]. Squamous epithelium is also seen in other lesions such as teratoid Wilms tumor [8], teratoma [9], and dermoid cysts [10]. There are no specific clinical symptoms of renal epidermoid cysts. These patients present with loin pain and hematuria or lower urinary symptoms.

CONCLUSIONS

Awareness of occurrence of epidermoid cyst will broaden the differential diagnosis in cystic diseases of the kidney. They can produce clinical picture similar to hydronephrosis when multiple. Better clinical awareness of the entity and a pre-operative biopsy will help preserve the kidney.

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