

NEPHROGENIC ADENOMA; A RARE ENTITY IN CHRONIC IRRITATION OR INFECTION OF THE BLADDER

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ABSTRACT

A 69 year-old man, with accidental finding of bilateral kidney stones, and two papillary lesions in the bladder is described. His recurrent urinary tract infections were treated according to the suitable antibiotics. His renal functions were impaired moderately, and his cystoendoscopy revealed two papillary lesions on the posterior wall of the bladder. The histopathological examination of the resected tissue revealed nephrogenic adenoma, and the patient would be followed-up with check cystoscopies three monthly periods for the first year. Nephrogenic adenoma is a rare entity, mainly in the male population, with chronic irritation or infection.

Key Words: Nephrogenic adenoma, Neoplasm, Bladder.

INTRODUCTION

Nephrogenic adenoma is a rare lesion that histologically resembles primitive renal collecting tubules. It is a metaplastic response of urothelium to trauma, infection, or radiation therapy. Edema and inflammatory cell infiltration are common, but there is little nuclear atypia or mitotic activity (1). Nephrogenic adenoma is more common in men and often is associated with symptoms of dysuria and urinary frequency. Nephrogenic adenoma also has been reported in children (2-4).

CASE REPORT

A 69 year-old male patient, while he had been evaluated for his intractable diarrhea in the department of Gastroenterology, he was, accidentally found to have bilateral kidney stones, and two papillary lesions in the bladder on ultrasound scan. He had macroscopic hematuria once, about three months before his admission to our clinic. During this period he had several documented urinary tract infections with *Klebsiella* spp, and he was treated with suitable antibiotics.

His IVU revealed staghorn kidney stones on both sides, but there was no obstruction. His right kidney was about 3 cm smaller than the left one, and his renal scan revealed impaired renal functions on both sides, more prominent on the left. His serum creatinine level was 2.9mg/dl. As his age and renal functions were taken into consideration, he was decided to be followed-up for his kidney stones, and he underwent endoscopic examination, which revealed two papillary lesions on the posterior wall of the bladder with 0.8 cm of diameter. The histopathological examination of the resected tissue revealed nephrogenic adenoma (Fig.1). Random biopsy specimens demonstrated chronic inflammation, and the patient underwent check cystoscopies 3 monthly periods for the first year.

DISCUSSION

Immature urothelial metaplasia (nephrogenic adenoma, adenomatoid metaplasia, adenomatoid tumor, hamartoma, nephrogenic metaplasia) is a peculiar reactive process that may occur anywhere in urothelium-lined organs including renal pelvis, ureter, urethra and urethral diverticulum but is most common in the urinary bladder (1-8). The common term nephrogenic adenoma was applied by Friedman and Kuhlenbeck in 1950 to describe a fancied resemblance of this lesion to aberrant renal tubules (9). Although most experts currently accept a metaplastic origin, the histogenesis of urothelial metaplasia (nephrogenic adenoma) has been exceedingly difficult to confirm. Ultrastructural studies have revealed features characteristic of cells lining any fluid-filled space and immunohistochemical reactions for surface lectins have indicated that the tissues are immature but neither electron microscopy nor lectin mapping has revealed the etiology or histogenesis of these peculiar structures (10,11). The most compelling etiological evidence is the almost constant relationship of immature urothelial metaplasia to urothelial injury in the forms of previous surgery, chronic irritation, chronic infection, or structural defects. Nephrogenic adenoma has also been described in bladders with malakoplakia, after immunosuppression for renal transplantation or

Wegener's syndrome, and following intravesical chemotherapy or immunotherapy (11-14). Of 272 cases reviewed by McIntire and colleagues, only four could be considered to have arisen de novo (8).

The disease is twice as common in males as in females and has been recorded in patients aged 3 weeks to 83 years (mean, 44 years). There is no race predilection. Since nephrogenic adenoma is a reactive process, the clinical signs and symptoms are those of chronic irritation and/or infection, i.e., dysuria urgency, frequency, and suprapubic pain usually accompanied by microscopical hematuria. Lesions appear as papillary or polypoid tumors resembling transitional cell carcinomas on endoscopic examination. Although usually single and located at the bladder base, these lesions may be multiple and affect lateral walls, dome, and ureteral orifices.

Pathologically, nephrogenic adenoma is composed of both papillary fronds and tubules. The lesion is distinguished from papillary transitional cell neoplasms by the occurrence of a single layer of cuboidal cells covering rather broad, often inflamed fibrovascular stalks. Urinary cytology is negative, further distinguishing the lesion from neoplasm (8).

Recurrences after treatment for nephrogenic adenoma have been documented in 37 per cent of cases (8). They usually occur early and are often persistent. Although 10 per cent of patients have had pre-existent or associated urothelial carcinomas, the frequency of bladder cancer arising after pathological confirmation of nephrogenic adenoma is not increased and most experts do not believe this type of metaplasia to have carcinogenic potential (6-8).

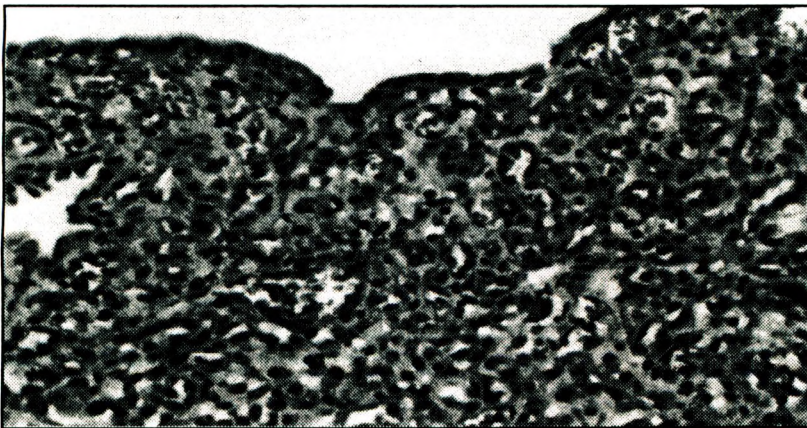


Fig. 1:

Simple tubular structures lined by simple cuboidal epithelium. Additional findings are plasma cell infiltration and congestion. (HE x 200)

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