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Case Report

Hypertrophied Column of Bertin and Double Collecting System in a Patient: A Case Report

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Keywords

- Column of Bertin; Pseudotumor; Renalmass; Double collecting system

Abstract

The Bertin column, which has been considered as a malignancy due to a lack of awareness and which leads to the execution of nephrectomies, is a genetic anatomic disorder that may be observed as a normal variant, rarely requiring surgical intervention and for which segmental resection may be sufficient. In this case, only biliary column and dual collecting system, which was observed in urinary system ultrasonography (Usg) made by the patient who had complaints of side pain, was observed and published to increase the awareness.In this case, the Bertin column and double collecting system observed in the urinary system ultrasonography (Usg) of the patient who had only complaints of side pain were monitored and data were published to increase the awareness.

INTRODUCTION

Bertin column was first described in 1744 by Exupére Joseph Bertin, a French anatomist but awareness was not raised until 1960, thus evaluated as a malignancy and lead to the execution of a nephrectomy, although it had a benign cause [1]. As awareness increased after the definition, the number of cases reported in the literature increased; the first communique was published in 1968 by King et al., and 100 cases were recorded in 23 literatures until 1977 [2]. It mimics renal mass [3] and is called pseudotumor [4].

According to a study of Lee JH et al. Bertin column is closely related to the sectional image of the kidney and the double-collecting system. In this study, the computerized tomography (CT) of 1639 kidneys revealed a 30% significantBertin column ratio and double collecting system was detected in 16% of these.

As a result of the ultrasonography performed on the patient suspected during diagnosis, increased vascularity and thickness were found significant in terms of Bertin column based on the study of Bünal et al. [5]. Theultrasonography performed on our patient was found to be significant in terms of Bertin column upon observation of to the double collecting system and segmented right kidney renal sinus.

CASE REPORT

A 41-year-old man complaining for back and side pain, which increased and became more pronounced in the mornings since 2011, diagnosed with lumbar disc herniation upon examination and imaging, applied to our clinic because the pain was still present. No weakness, dysuria, hematuria, renal colic history, no nausea and vomiting. A diagnosis of Migraine with aura was made. Non-steroidal anti-inflammatory drugs are used to treat headache and hip pain. The patient who defecates 5-6 times a day andand describes intermittent tenesmus has no anemia history. There are hemorrhoids. The patienthas no regular medication.

There is no urinary system related disease and operation in the patient history. Breathing sounds were natural and rale was absent during the patient's examination. In the cardiovascular system,heart sounds were rhythmic, no additional sound was heard. The abdomen was normal and there was no sensitivity defense rebound. The extremity movements were free but there was a lumber/side pain. There was no costovertebral angle sensitivity and no pretibial edema.

Urinary system ultrasonography was requested from the patient who had normal renal function tests, electrolytes, complete blood count and venous blood gas. The right kidney was 117 mm, the left kidney was 112 mm but the right kidney renal sinus was segmented, double collecting system was observed but no dilatation has been detected in the collecting system. Intravenous pyelography with non-ionized contrast material was planned for Bertin column preliminarily with unenhanced thin-section CT first, followed by double-collecting system. First, unenhanced thin section CT was requested with the Bertin column pre-diagnosis and then intravenous pyelography using non-ionized contrast agent was planned because the double collecting system was not clearly observed (Figure 1-3).

DISCUSSION

It is proposed that theBertin column develops as a result of the fusion of the septal cortical layer of two adjacent kidney lobes and the absence of resorption of the polar parenchyma located

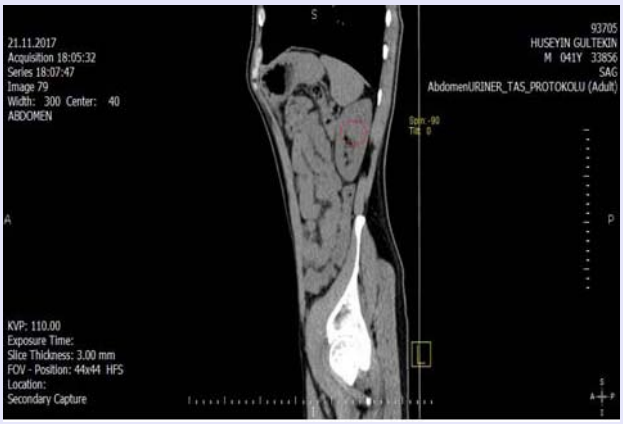

Figure 1 Bertini colon in right kidney.

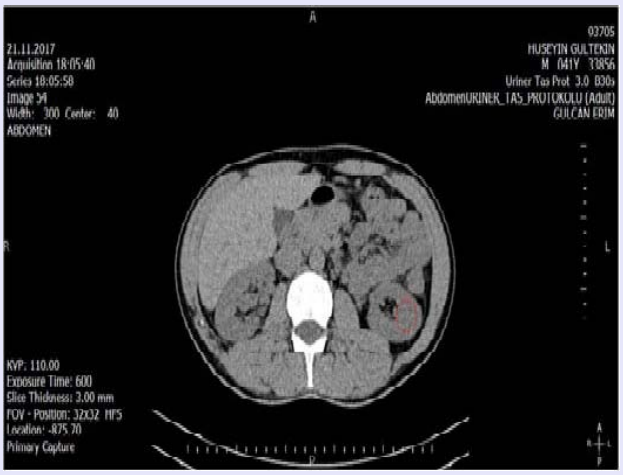

Figure 2 Bertini colon in left kidney.

Figure 3 Double collecting system in right and left kidney.

between [5]. Bertin column is mostly located on the left side, in the middle 1/3 section and is observed bilaterally in 18% of the cases [1]. The most significant types of Bertin column are the normal variant and the pseudo-lesion aspect mimicking the renal mass. However, it is characterized by 5 types according to its shape and type 3 is related with a double collecting system [3]. In the CT scan, the proportion of the Bertin column was 30%, the segmented-shaped kidney and the double collecting system were calculated as 4% and 26% respectively [3]. In 495 Bertin column patients, 16% of double collecting system was detected and this is less than in the normal population [3]. Vesicoureteral reflux, nephrolithiasis, urinary tract infections are more frequent in patients with double collecting system and are associated with hypertrophy [3]. It may be difficult to differentiate mass/hypertrophic Bertin column in USG in relation with increased thickness; verification by CT or scintigraphy is necessary. Observations of hypoechoic thick cystic areas in the US, cambering in the contour of the kidney, and irregularity were accepted as suspicious findings in favor of the Bertin column [5]. It may be isoechoic/hyperechoic [6,7]. MR is more sensitive than CT [6]. The structure is observed as an ovoid lesion extending from the medullary pyramid to the renal sinus [6]. Malignancy may be detected even if it does not cause irregular contours. The only factor that is significant in differential renal cell carcinoma diagnosis is increased vascularity in Doppler USG. A strong correlation was found with the parenchyma thickness [5]. A classification based on 7 criteria was made in 11 Bertin column patients presenting renal mass; the observations of 3 radiologists were compared. The lateral recess of the renal sinus, its continuation or contiguity with the renal cortex, the close proximity of the echogenicity with the renal cortex, the clear separation from the renal sinus, a maximal dimension of 3 cm are considered as the major criteria; the coexistence of cortical protrusion and its position in the upper half of the kidney are considered as the minor criteria. The lateral recess of the renal sinus, its continuation or contiguity with the renal cortex are criteria that are accepted by the three radiologists. It has been proposed that nuclear imaging methods (PET-CT) can be used for diagnostic confirmation [7]. Microvascular anomalies may be caused by microscopic or macroscopic hematuria, and segmental resection may be required [2].The characteristic features of the hypertrophic Bertin column are the presence of stretched and displaced arteries with normal arcuate arteries around the suspected mass in arterial phase; the absence of neovascularization such as dense and delimited areain the nephrographic phase; rapid venous filling and tumor vasculature. In the scintigraphy, it may be observed as a hot nodule or may not give any findings. It has been proposed that partial nephrectomy will be sufficient even in case of gross hematuria to allow the hematuria to heal [2].

As there is not sufficient awareness on these cases, although they are frequent, the cases are not reported because patients are often overlooked. Bertin column may be observed as a result of the imaging even if there are no significant urinary symptoms. We wanted to publish the case of Bertin column we encountered to raise awareness.

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