Case 4012

Medullary sponge kidney
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Section: Uroradiology & genital male imaging
Case Type: Clinical Cases
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Patient: 54 years, female

Clinical History:

Recurrent microscopic hematuria in a 54 woman.

Imaging Findings:

A 54 year-old woman was referred to radiology department for an intravenous urography (IVU) because of a recurrent microscopic hematuria. The patient’s history included only an acute renal colic. Supine abdominal radiograph showed no stone and no nephrocalcinosis. Image of the right kidney at intravenous urography obtained with compression showed linear striations in virtually all papillae.

Discussion:

Medullary sponge kidney (MSK), tubular precaliceal ectasia and Cacchi Ricci’s disease are the terms applied to cystic dilatation of the collecting ducts within one ore more renal medullary pyramids of one or both kidneys. As the result of stasis and the occasionally associated condition of hypercalciuria, stones may form in the cavities. MSK is asymptomatic in most of the cases but can also present with acute renal colic, urinary infection, hematuria, and hypertension. MSK may be associated with congenital hemihypertrophy, Beckwith-Wiedemann syndrome and Caroli’s disease. At conventional radiography renal tubular ectasia may show calcifications clustered in the dilated tubules of the pyramids producing a medullary nephrocalcinosis, or stones in the urinary tract. At intravenous urography the tubules appear dilated or as linear striations of contrast material that extend peripherally from the surface of the papilla into the medulla and persist on delayed views. The growing calculus sign refers to the apparent enlargement of stones between the preliminary image and images obtained after contrast material administration, as contrast material fills the ectatic tubules harbouring the stones. Excretory phase enhanced CT can also demonstrate striations. The recognition dilated irregular renal tubules characteristic of renal tubular ectasia should not be confused with the normal papillary blush related to concentration of contrast material in the renal pyramids. Normal papillary blush appears as a fine uniform enhancement of the pyramids.

Differential Diagnosis List: Medullary sponge kidney

Final Diagnosis: Medullary sponge kidney

References:

Ginalska JM, Schnyder P, Portmann L, Jaeger P. Medullary sponge kidney on axial computed tomography:

Ginalski JM, Portmann L, Jaeger P. Does medullary sponge kidney cause nephrolithiasis?

Description: 10-minute anteroposterior radiograph of the right kidney with compression. Parallel striations of contrast material that extend peripherally from the surface of the calices into the medulla.
Origin:
Description: 10-minute right posterior oblique radiograph of the right kidney with compression. Parallel striations of contrast material that extend peripherally from the surface of the calices into the medulla. Origin: