

Calcium caplet mimicking renal calculi

Sir,

We present a 72-year-old woman, a known hypertensive patient with excruciating right upper back pain that worsened over 3 days. No fever, vomiting, hematuria, or lower urinary tract symptoms. Examination revealed right renal angle tenderness. Antero-posterior [Figure 1] lumbosacral X-ray showed an oblong radio-opaque shadow of calcific density projected over the lower pole of the right kidney opposite the third lumbar vertebra.

Other findings included straightening of the normal lumbar lordosis (seen on the lateral projection) and moderate degenerative changes of the lumbar spine. However, the pedicles, disk spaces posterior elements, and the pre-vertebral soft tissue space were normal. Abdominal ultrasound scan performed 2 h after the initial radiographs did not reveal any renal or gall bladder calculi. A repeat abdominal X-ray done 3 h after the initial radiograph showed no radio-opaque shadow.

Further discussion, the patient confirmed that she took her daily calcium caplet supplement of citracal (calcium citrate + vitamin D₃) before coming to the clinic that morning. This is a case of Calcium caplet mimicking renal calculi in a patient with lumbar spondylosis.

The incidence of nephrolithiasis differs according to geographical area, age, sex, and race. It affects more males than females and is more common amongst Caucasians than in the native Africans. The chemical composition of renal stone in children is similar to those found in adults.^[1] The mineral composition of renal calculi determines the degree of its

opacification on plain radiographs. Over 85% of urinary tracts stone consist of calcium.^[2] Other compounds that can form stone include Uric acid, Xanthine, Cysteine, and phosphate.^[2]

Literature review shows that the common differential diagnoses of urinary tract stones include the calcified tip of the lumbar transverse processes, calcification from parasitic infestations like schistosomiasis and renal tuberculosis, calcification that may accompany renal cell carcinoma, calcified mesenteric lymph nodes, gallstones, stool, and phleboliths.^[2-4]

The clinical presentation depends on the location. Therefore renal calculi usually present with sudden onset pain that may be localized to the lumbar region as in our patient or may radiate to the loin if located at the pelvic-ureteric junction. Imaging techniques and biochemical modalities can localize the calculi and identify their composition.^[2] These findings determine the appropriate management options which may include medical therapies, endoscopic treatments, extra-corporal shockwave lithotripsy, and open surgical approach as practiced in the developing countries with limited resources and instrumentation.^[3,5]

Hematuria may be microscopic or macroscopic although this feature was absent in our patient as her urinalysis did not show any red blood cells or cast. Renal calculi do present with nausea and vomiting because of the anatomical relation of the duodenum and hepatic flexure on the right and the jejunum, splenic flexure, and descending colon on the left. In addition, all have similar autonomic innervations.^[2,3,5] These symptoms were absent in our patient.

Radio-opaque renal calculi are routinely identified on plain abdominal radiograph^[2,3] and the finding of this shadow in this patient, heightened the clinical suspicion of renal calculi. Non-contrast computerized tomography is the most sensitive imaging modality though not done in this patient because it is expensive.^[6-8] Interestingly, renal ultrasonography did not reveal any stone and a repeat abdominal X-ray confirmed the disappearance of the radio-opaque shadow. The calcified dense opacity that projected over the lower pole of the right kidney was due to a partially dissolved calcium caplet in the ascending colon [Figure 1].

This patient would have been subjected to unnecessary drug and fluid administration and financial waste if the correct diagnosis had not been clinched by a repeat of the imaging studies.

In conclusion, recent ingestion of calcium-based caplet or tablet should be included in the list of differential diagnosis



Figure 1: Antero-posterior abdominal radiograph showing a roundish calcific dense opacity projected over the inferior pole of the right kidney

of calcified dense-opacities projected over intra-abdominal organs like the kidneys and the gall bladder. Plain abdominal X-ray and abdominal ultrasound scan are adequate investigations in a resource-limited environment.

**Mojisola Omolola Atalabi,
Augustine Oghenewyin Takure¹**

Departments of Radiology and ¹Surgery, Division of Urology,
College of Medicine/University College Hospital, Ibadan, Nigeria

Correspondence: Dr. Mojisola Omolola Atalabi,
Department of Radiology, College of Medicine/University College
Hospital, Ibadan, Nigeria.
E-mail: omatalabi@yahoo.co.uk

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