Hemoglobin electrophoresis: An important investigation in the evaluation of patients with massive hematuria

Sir,

We report a case of a 34-year-old Nigerian woman who presented at the renal clinic of a University Hospital in Nigeria in July 2003 with a history of sudden onset of painless, profuse and persistent hematuria. She had fever and rigors at the onset of illness which were relieved by antipyretics. There were no other urinary symptoms; neither did she have sore throat, skin rash, abdominal pains nor bone pains. She denied use of any herbal mixtures or abuse of analgesics. She was engaged in subsistent farming and lived in the village.

Physical examination revealed no abnormality except moderate anemia. The significant findings from laboratory investigations were: mild proteinuria, severe hematuria. Schistosoma ova were not seen in urine microscopy. Abdominal ultrasonography revealed no abnormality but the intravenous urography (IVU) was remarkable with features suggestive of pyelitis. There was blunting of the calyces with filling defects (blood clots) in both pelvisses. Also noted were kinking of the right ureter [Figure 1] and ureterocele in the left ureter [Figure 2]. There was no renal cyst or evidence of neoplasm. Urine culture yielded no growth after 48 h (she had previously been treated with antibiotics prior to presentation) and the fasting blood sugar was normal (5.6 mmol/l). Hemoglobin electrophoresis revealed sickle cell trait (HbAS) with percentages of Hb A and Hb S 60% and 40%, respectively, and hemoglobin was 8.5 g/dl. There were no bleeding or clotting abnormalities. The platelet count was above 250,000/cumm. She was given a 10-day course of ofloxacin tablets, hematinics and advised to take lots of fluids. Symptoms resolved within five days of commencing therapy and repeat urine examination after two weeks showed no abnormality.

Though sickle cell trait is asymptomatic, it can be responsible for renal abnormalities such as gross hematuria. Factors that predispose a sickle cell trait patient to hematuria include urinary tract infection (UTI), trauma, instrumentation and analgesic consumption. Other causes of hematuria in sickle cell disease include renal medullary carcinoma and use of toxic/herbal agents.

The bleeding can be massive with clots as was the case with our patient. Duvic et al., also documented clots in some patients with sickle cell trait that they studied. The prevalence of hematuria in sickle cell disease varies from nil to 30% in some series. Remarkably, there was involvement of both kidneys in our patient. This occurs in only about 10% of cases.

This patient’s hematuria may have been precipitated by UTI despite negative urine culture. The negative culture result could be attributed to the antibiotics she had received prior to presentation. In addition, the resolution of hematuria within five days of commencing antibiotic therapy and the evidence of pyelitis in the IVU suggest the presence of upper UTI as the precipitating factor.

The incidence of sickle cell trait in the African black population is between 20% and 40%. In Nigeria, it is currently estimated that about 25% of adults have sickle cell trait. The epidemiological implication is obvious. This case underscores the need for sickling test and hemoglobin electrophoresis in the evaluation of every patient with unexplained hematuria, especially black patients.

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Figure 1: Intravenous urogram showing ureters and the pelvicalyceal system of the kidneys with clots in the pelvisses of both kidneys and kink in the upper third of right ureter.

Figure 2: IVU showing the ureters and bladder with the arrow indicating ureterocele of the left ureter.
Non-traumatic herniation of the liver in an asthmatic patient

Sir,

Diaphragmatic hernias are commonly classified as congenital or acquired (traumatic and non-traumatic). Non-traumatic herniation into the thoracic cavity containing the liver is extremely rare with only six cases documented so far. [1-4] In view of the rarity of the lesion and its likely confusion with other causes of a pulmonary nodule including a malignancy, we present a case of non-traumatic herniation of the liver diagnosed in a 57-year-old female patient.

The patient was on treatment for severe bronchial asthma and underwent a computed tomography of chest for suspected coexistent bronchiectasis. While conforming bronchiectasis, the scan also showed a well-defined, non-calcified round opacity of uniform soft tissue density, about 4 cm in diameter, in the right lower zone adjacent to the right diaphragm situated in the posterior basal segment [Figure 1]. Suspecting a malignancy, a CT-guided fine needle aspiration cytology (FNAC) was performed that revealed cohesive clusters of epithelial cells with increased nuclear-cytoplasmic ratio, single prominent central nucleolus and mild nuclear pleomorphism. The cells were large, polygonal with an abundant vacuolated and finely granular cytoplasm with lipofuschin pigment. The cells were PAS positive and diastase-negative indicating the hepatic origin of the lesion. Thus, ruling out a malignancy, a diagnosis of liver herniation was made. On CT, 1 mm cuts were obtained that showed the lower end of the opacity to be continuous with the right diaphragm with a small gap in the latter [Figure 2]. No active intervention was deemed necessary.

Three years later, a repeat scan showed considerable reduction in the size of the lesion [Figure 3]. In the present case, the diagnosis was established on CT by the location of the opacity and the visualization of a rent in the diaphragm, and the histopathological features of a normal liver cytology. A thoracotomy was thus avoided. None of the other reported cases were followed up to determine the course of the lesion. Reduction in size after three years in the present case shows that the hernia may undergo spontaneous regression. Thus, a diagnosis of liver herniation should be considered in the differential diagnosis of an intrathoracic opacity in the chest.

References