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Case scenarios of pediatric nephrology

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Abstract

An 11-month-old boy was mentioned our clinic due to an incidentally discovered nephrocalcinosis (NC) during a routine hip ultrasound .He was born full-term (38 weeks gestation) with a traditional birth weight (2490 g).He received vitamin D supplements (400 IU per day) and was breastfed until he was 3 months old. He always had low weight and height, but above the 3rd percentile. His case history was negative for NC and nephrolithiasis (NL).At presentation, the boy was asymptomatic, and his weight and height were 8 kg (4th percentile, − 1.87 SDS) and 70.5 cm (5th percentile, − 1.67 SDS) respectively. The physical examination was otherwise unremarkable.

Initial laboratory workup revealed:

a) Iron-deficiency anemia

b) Hyperparathyroidism

c) Normal serum calcium and phosphorus

d) Mild 25OH-vitamin D3 deficiency

e) A 24-h urine analysis was revealing hyperoxaluria and undetectable levels of calcium.

Ultrasound scan of the left kidney of our patient shows a hyper echoic papilla without acoustic shadowing, also as a light diffuse medullary hyper echogenicity. Upon further interrogation, we found that the kid usually suffered from abdominal bloating, and passed 5 stools per day, sometimes with undigested food fragments. His father was also being tested for a suspected disorder (CD) or gluten intolerance. Due to his digestive symptoms, CD-specific antibodies were tested, showing IgA class anti-transglutaminase type 2 levels > 10 times above the upper limit of normal with positive IgA class anti-endomysial antibodies, verified by two separate blood samples. HLA typing showed 2 high-risk alleles (DQ2.5/DQ8). Questions: 1.Is there any metabolic factor predisposing to NC in our patient? 2. What is the foremost likely explanation for hyperoxaluria in our patient? 3. What is the foremost likely explanation for hyperparathyroidism in our patient? 4. What is the diagnosis of our patient? How should our patient be treated? Is there any metabolic factor predisposing to NC in our patient? Although hypocalciuria should protect against nephrocalcinosis (NC), the presence of hyperoxaluria in our patient predisposes to NC.

What is the foremost likely explanation for hyperoxaluria in our patient? Hyperoxaluria are often divided into two categories primary and secondary. Primary hyperoxaluria is that the results of an inherited hepatic enzyme deficiency resulting in an increased endogenous production of oxalate, and typically exhibits excessively high urine oxalate levels. Secondary hyperoxaluria is thanks to an increased intestinal absorption of oxalate and typically presents with mildly or moderately high urine oxalate levels. Samples of conditions related to secondary hyperoxaluria are: A high-oxalate diet. Conditions related to fat malabsorption. Given the moderate hyperoxaluria, and therefore the gastrointestinal symptoms mentioned in our patient, a secondary explanation for hyperoxaluria was suspected. What's the foremost likely explanation for hyperparathyroidism in our patient? Hyperparathyroidism are often divided into three categories: primary, secondary and tertiary. Primary and tertiary hyperparathyroidism: usually presents with hypercalcemia and hypophosphatemia. Secondary hyperparathyroidism: presents with low-normal calcium and high-normal phosphorus levels. Chronic renal disorder (CKD) is that the commonest explanation for secondary hyperparathyroidism. However, secondary hyperparathyroidism within the absence of CKD should raise the suspicion of syndrome.

Biography

Riham Arnous had PhD From Mansoua University (Faculty Of Medicine) class 2009/2010 with very good of the first class, then worked as a visitor resident of pediatrics at MUCH For 2 years , then she had a master degree of pediatrics at Al Azhar University and worked there at Al AZHAR University Hospitals for 2 years then She had a pediatric Nephrology Diploma From Cambridge University at 2019, then She worked and still working as a pediatric nephrology specialist at Nephrology Unit at Mansoura University Children Hospitals. She is now the head of pediatrics department at Al Soliman Specialized Hospital.

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