CASE REPORT

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A Case of Pica with Acute Abdominal Pain

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Abstract

We present a case of a child who was admitted to the paediatric emergency department with the complaint of flank pain, had a history of kidney stones, and had diffuse opacities due to eating plaster casts, which could be confused with a kidney stone in the computerized abdominal tomography. **Background:** Pica is a type of appetite change that can be seen in children with iron deficiency [1]. Iron deficiency is one of the most common essential nutrient deficiencies in the world [2]. Abdominal pain due to urinary stones is one of the complaints that bring children to the emergency room [3]. The main diagnosis is made by direct urinary system radiography and ultrasound. Sometimes computed tomography (CT) imaging may be required to determine the localization of the stone and its complications. Here, we present a case of a girl who presented with acute abdominal pain, had diffuse opacities in her abdomen on radiological examination, and may cause diagnostic confusion with urinary stones.

Keywords: COVID-19, Measles, Latamber, Virus, Prevalence.

INTRODUCTION

Case presentation

A thirteen-year-old girl was brought to the paediatric emergency department with left flank pain that started 3 days ago. She had a kidney stone with a diameter of 5.4 mm in the abdominal ultrasound performed in another centre about 4 months ago. It was stated that she did not have any other known diseases in her history, her vaccinations were done on time, and her development was appropriate for her age. No features were specified in the family history.

Body temperature: 36.8 C, arterial blood pressure: 110/60 mm Hg, Heartbeat: 92/ min, respiratory rate: 22/ min, and oxygen saturation: 98% were recorded as vital signs. Body weight: 52 kg (SDS: -0.09, 46.41%) and height: 166 cm (SDS: 1.03, 84.85%) measured as anthropometric measurements, and body mass index calculated as 18.87 kg/m2 (SDS: -0.67, Percentile: 25.14).

On physical examination, the patient's skin was pale, the left costovertebral angle was tender, and other findings were normal.

Blood samples of the patient were taken and 1500 cc/m2/day ½ isotonic-5% dextrose fluid was started. In initial laboratory analysis, wbc:9250

K/uL, lym:1020 K/uL (11%), neu:7910 K/uL (85.6%), Hb:8.3 g/dL, mcv:54.6 fL (n :80-100), plt:380000 K/uL, urea:32 mg/dL, creatinine:0.98 mg/dL and crp:15 mg/L were measured. When the child's family was asked if there was a problem with the blood values before, they said that there may be thalassemia carrier (TT) in the family. Liver function tests and blood electrolytes were normal. Paracetamol 15 mg/kg IV was administered because her pain increased during the follow-up. Within half an hour the pain was gone.

No stone could be seen in the abdominal X-ray. In the abdominal ultrasound performed in the radiology unit: While the right kidney parenchymal echogenicity was normal, the left kidney parenchymal echogenicity was found to be grade I increased. While no dilatation was detected in the right kidney collecting system, dilatation was observed in the left kidney collecting system in the pelvicalyceal system where the renal pelvis A-P diameter was 16 mm. No renal stone was detected. No pathology was detected in the sonographic evaluation of other abdominal organs. Non-contrast computed tomography (CT) performed in the patient, who also had a history of stones, revealed a dilatation of the left pelvicalyceal system and ureter, an increase in the size of the left kidney compared to its symmetry, and an intraureter hyperdense stone (1150 HU) at the level of the left ureterovesical junction (Figure 1).

The patient was consulted to the urology clinic; Emergency surgery was not considered with the current findings, abundant hydration,

appropriate analgesic, antibiotic, tamsulosin 0.4 mg 1x1 and urology outpatient control one week later were recommended.

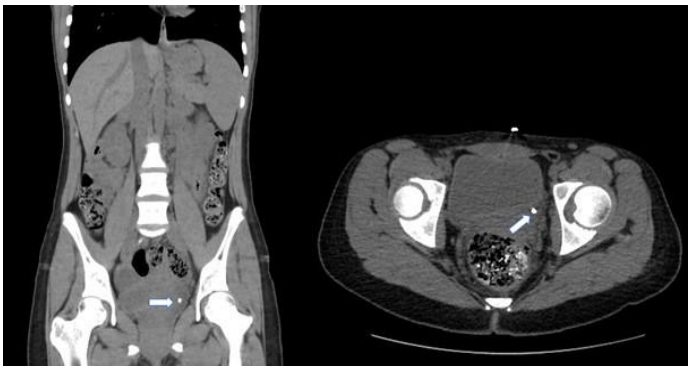

Figure 1: Left ureteral stone (arrow) on coronal reformat and axial CT images

Numerous millimetric hyperdensities (345-530 HU) were seen in the stomach, small intestine, and colon in the patient's non-contrast abdominal CT (Figure 2). When the patient was questioned again, she said that constantly ate plaster and ice. Blood samples were taken again for anaemia parameters from the patient, who was thought to be a thalassemia carrier with initial laboratory findings. Transferrin saturation: 3% (n: 15-45), iron: 11 ug/dL (n: 33-193) and ferritin: 2.91 ug/L (n >15) were measured and were consistent with iron deficiency anaemia (IDA). The Mentzer index was calculated as 10.7 (IDA>13>TT) and was consistent with TT. Considering that multiple nutrients may be deficient, vitamin B12: 196 ng/L (n>200), folate: 3.66 ug/L, 25 OH Vitamin D: 5.9 ug/L (n>30) and PTH: 18.9 ng/L (n=15-65) was measured, and they

were low for her age, except for PTH. From blood biochemistry values, phosphorus: 2.84 mg/dL (n=2.9-5.1), magnesium: 1.68 mg/dL (n=1.7-2.2), CRP 15.52 mg/ dL (n <5) and creatinine: 0.98 mg/dL (n=0.57-0.87) were measured different from normal.

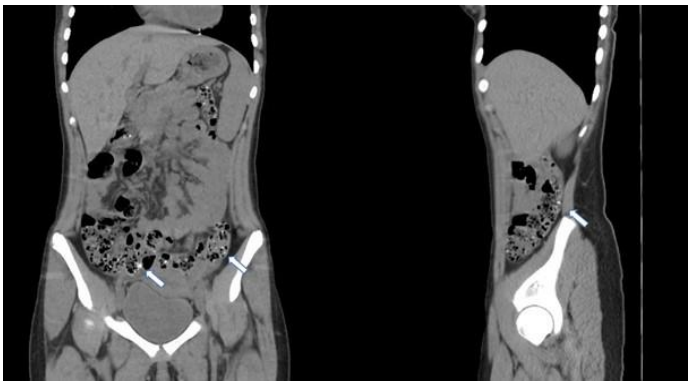

Figure 2: Multiple millimetric hyper densities (arrow) in the colon on coronal and sagittal reformat CT images

In the complete urinalysis, pH: 6.0, density: 1031, 1 erythrocyte and 8 epithelia cells per mm 3 were observed, and urine biochemical values are shown in Table 1.

The patient, whose pain regressed in the follow-up, was in good general condition, her vitals were stable, and did not have any additional complaints. Oral Vitamin B12, Folic acid, tamsulosin 0.4 mg 1x1 were prescribed. She was discharged with recommendations and was called to the urology outpatient clinic for follow-up. The stone of the patient who came to the outpatient clinic control had fallen nine days later. The patient's family was advised to analyse the stone, but they could not have it done.

Table 1: Urine biochemical values of the patient

Name	Result	Situation	Unit	Reference Range / Decision Limit
Phosphorus (Urine Spot)	12.41	L	mg/dL	40-136
Creatinine (Urine Spot)	209.1	N	mg/dL	28-217
Magnesium (Urine Spot)	17.43	H	mg/dL	4.1-13.8
Uric Acid (Urine Spot)	128.5	H	mg/dL	37-92
Protein Quantitative (Urine Spot)	29.8	H	mg/dL	<15
Calcium (Ca) (Urine Spot)	66,65	H	mg/dL	6.8-21.3
Calcium (Ca)/creatinine (Cr) (Urine Spot)	0,31	N	mg/mg	<0,21
Magnesium (Mg)/creatinine (Cr) (Urine Spot)	0,08	L	mg/mg	>0,15
Uric acid/Creatinine (Cr) (Urine Spot)	0,61	H	mg/mg	<0,6

DISCUSSION

Iron deficiency can cause many other disorders besides anemia [4]. Pica is one of them, and it is defined as the persistent and disgusting eating of non-nutritive substances for more than 1 month [5]. In a study, it was reported that 48% of patients with IDA had pica [6]. Pica can be seen in the form of eating soil, pencil tip, nail, coffee, ice, rice, plaster. Plaster Pica in children is also frequently reported [8]. Plaster is a mineral composed of calcium sulphate dihydrate ($CaSO_4.2\ H_2O$). It appears hyperdense on CT due to the calcium component in the plaster. It has been reported that CT is 5 -15 times more sensitive than direct X-ray in terms of foreign body [7]. Density values of foreign bodies containing stone, glass and metal are between 1000-3000 HU.

Foreign bodies containing calcium such as plaster are measured at lower density values as in our case [8].

Confusion with urinary stones has been reported on direct abdominal X-ray imaging due to stone pica in children [9]. In our case, the plaster was not seen on direct radiography. Robert *et al*. reported a case of recurrent kidney stones due to sodium chloride pica in an adult patient [10]. We could not determine whether the stone was due to excessive calcium intake, since we could not have a stone analysis done in our case.

CONCLUSION

Iron deficiency is still a common mineral deficiency today. In patients presenting with anaemia, pica questioning will guide the diagnosis and treatment. In addition, considering the unusual opacity appearances in urinary stone imaging, especially plaster's pica will be a guide in the differential diagnosis.

Conflict of Interest

None declared.

Financial Support

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