

A rare reason in a child with feeding intolerance: Intravaginal struvite stone

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Vaginal stones are rarely seen in childhood; they are categorized as primary and secondary whether they are a foreign object focus (nidus) or not. Urethrovaginal fistula is the most common etiological cause; other etiologies are considerably rarely reported. Primary vaginal stones are formed as a result of urinary salt accumulate. A 14-year-old girl, suffering from an unidentified neurodegenerative disease, was admitted with complaints of cough, poor feeding and vomiting. Abdominal X-ray showed a large calcific mass; further evaluation revealed a vaginal struvite stone, and it was removed surgically. No anatomical reason was determined for the formation of stone and it was accepted as primary vaginal stone.

Key words: child, primary vaginal stone, struvite stone, feeding intolerance.

Vaginal stones are very rare and they are usually diagnosed as bladder stones in graphies.¹ The fundamental source of vaginal stones is urethrovaginal fistulas, other causes are very seldom.² Since they develop very slowly, they do not lead to acute symptoms. They are as a rule determined coincidentally in routine scanning. We report a case vaginal struvite stone in a 14-year old girl, confined to bed, with a complaint of feeding intolerance.

Case Report

A 14-year-old girl, suffering from an unidentified neurodegenerative disease, was admitted with complaints of cough, poor feeding and vomiting. Her physical examination revealed: body temperature 38.2°C, pulse rate 89/min., respiratory rate 28/min., kyphoscoliosis and decorticate posture; sibilant rhonchi were detected; bowel sounds were normoactive, and no organomegaly or palpable mass were identified. She had severe motor and mental retardation, severe spasticity and joint contracture involving upper and lower extremities. Patient history revealed that the patient has been in this posture for the last 8 years and she did not have any regular neurologic follow up.

Laboratory examinations showed: hemoglobin 12.7 g/dl, white blood cell count 11,540/mm³, platelet 206,000/mm³, CRP 46.42 mg/dl, glucose 143 mg/dl, urea 16 mg/dl, creatinine 0.52 mg/dl, Na 134 mEq/L, K 4.69 mEq/L, Cl 106 mEq/L, total protein 7.0 g/dl, albumin 3.8 g/dl, AST 65 U/L, ALT 23 U/L, GGT 16 U/L, LDH 876 U/L. Urinalysis showed leukocyte esterase (+++), nitrite (-), with normal urinary sediment. Blood and urine samples were obtained for culture and empiric antibiotic (ceftriaxone) was initiated. *P. aeruginosa*, susceptible to ceftriaxone, was isolated from the urine culture. Despite appropriate antibiotic treatment, feeding intolerance and vomiting persisted; abdominal X-ray showed calcific mass in the pelvis (Fig. 1). Petrified foreign object focus was identified at the vaginal cuff level in the abdominal computed tomography, with normal kidneys and urinary tract (Fig. 2). In the vaginoscopy, vaginal stone was seen and it was removed under general anesthesia (Fig. 3).

No fistula (vesicovaginal- rectovaginal) was determined in vaginoscopy and vaginography. In 24-hour urine analysis; proteinuria and hypercalciuria were not established. Fractional Na excretion, uric acid excretion, cystine

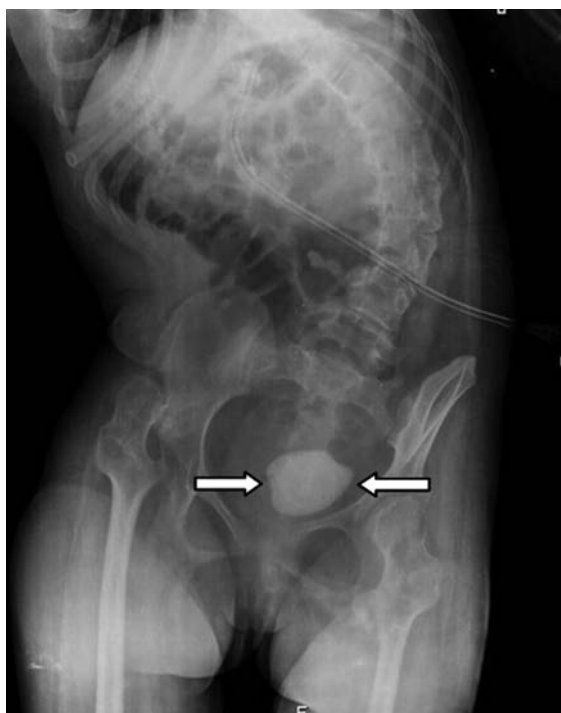


Fig. 1. Calcific mass in the pelvis (arrow) shown in the abdominal X-ray.

excretion were within normal limits. No nidus was identified in the histopathologic examination of the stone. Biochemical analysis revealed struvite stone (magnesium ammonium phosphate). Since the patient was confined to bed and no fistula were identified, we assumed that primary vaginal struvite stone developed secondary to chronic vaginitis. During a follow-up period of 1 year, the patient did not suffer from feeding problems.

Informed written consent was obtained from the parents for publication.

Discussion

Vaginal stones are rarely seen in children. Urethrovaginal fistula is the most frequently reported etiological reason, other etiologies are quite rarely notified.³ Stones in the vagina are categorized as primary and secondary depending on whether there is a foreign object focus (nidus) or not.⁴ Primary vaginal stones are formed as a result of urinary salt accumulation in patients with urethrovaginal fistula, stenosis in vaginal outflow, posttraumatic or postoperative scarring, ectopic vaginal ureter or neurogenic bladder.³ Bacterial reproduction associated with urinary stasis in vagina (urease

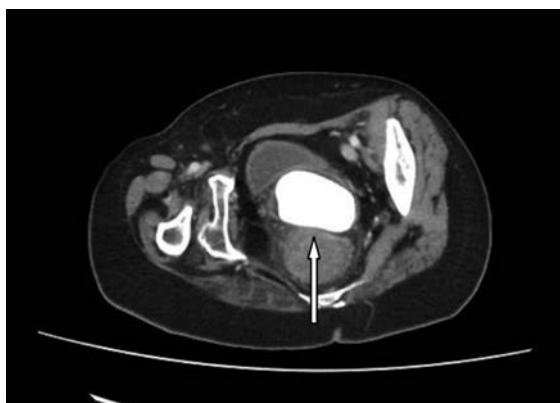


Fig. 2. Calcific mass foreign object focus seen at the vaginal cuff level (arrow) in abdominal computerized tomography.



Fig. 3. Macroscopic view of the vaginal stone after removal from the vagina; long axis is 38 mm.

producing bacteria such as *Klebsiella* sp., *Proteus mirabilis*, *Escherichia coli*) changes physiological acidic pH in the vagina into alkali and causes various substances to precipitate.⁵ In our case, we did not determine a cause that develops anatomic vaginal stasis like urethrovaginal fistula. In the foreground, we thought primary vaginal stone developed in chronic stasis in the vagina and chronic vaginitis ground. Biochemical nature of the stone, compatible with struvite stone, supported our view.

Secondary vaginal stones, however, occur with the crystallization or urinary components around the foreign object in the vagina. They are seen less often and they are formed as a result of migration of bladder stones or sutures used in the repair of urethrovaginal fistulas.⁶

It is difficult to diagnose vaginal stones since they usually do not lead to an acute symptom. These cases are mostly diagnosed as coincidentally in abdominal radiographies or

ultrasonography. Nonspecific findings such as suprapubic pain, fever and vomiting followed in some cases.^{4,7} The basic symptom in our case was resistant feeding intolerance. In the suspected cases, abdominal radiography must be the first workup to be carried out. If necessary, advanced research should be performed with ultrasonography and abdominal computed tomography.⁷ In its management, these stones should be removed and underlying factors should be eliminated to prevent its recurrence. Surgical repair of anatomical lesions such as urethrovaginal fistula leading to urinary stasis, and appropriate approaches for conditions creating tendency for urinary stone formation (like hypercalciuria, chronic urinary infections) are also important. In cases with neurological sequela, neurogenic bladder and urinary incontinence, patients should be evaluated and bladder rehabilitation treatment should also be initiated.^{4,8}

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