

## CLINICAL CASE REPORTS

### Vaginal discharge in a child: a challenging differential diagnosis

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#### ABSTRACT

**Introduction:** Diagnosing vaginal foreign bodies in children is challenging due to nonspecific symptoms and difficulty in obtaining a comprehensive medical history. Commonly presenting with recurrent urinary symptoms, foul-smelling discharge, and occasional bleeding, these cases can mimic infections or anatomical abnormalities, often resulting in multiple consultations and treatments before a correct diagnosis is made.

**Case report:** We present the case of a five-year-old girl with a two-year history of recurrent urinary symptoms and vaginal discharge, ultimately diagnosed with multiple vaginal foreign bodies. The initial treatments and assessments, including antimicrobial therapy and imaging tests, failed to identify the cause, highlighting the need for a thorough gynecological assessment in pediatric patients with unresolved symptoms.

**Discussion:** This case emphasizes the importance of considering vaginal foreign bodies in the differential diagnosis of recurrent and unresolved vaginal symptoms in children, and of adopting a careful and sensitive approach in the diagnosis process.

**Keywords:** foul-smelling discharge; gynecology; pediatric; vaginal foreign body

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## INTRODUCTION

Detecting vaginal foreign bodies is challenging, particularly in children, due to the nonspecific clinical presentation and difficulty in taking the medical history for this age group. More commonly found in adults than in pediatric patients, the prevalence of foreign bodies in the vagina is 4% in girls under the age of 13, in the outpatient setting.<sup>(1)</sup>

Symptoms can overlap with those of several other pediatric conditions, such as urinary infections, vulvovaginitis, dermatologic conditions, vesicovaginal or urethrovaginal fistula, and congenital anatomical abnormalities. This results in multiple consultations and examinations before the correct diagnosis is reached, as well as in multiple unsuccessful treatments.<sup>(2)</sup>

Vaginal foreign bodies usually cause inflammation, bleeding, and foul-smelling discharge.<sup>(3)</sup> Recurrent or persistent vaginal discharge is particularly distressing to the patient and family members, because it raises concerns about an uncertain bacterial source and potential undisclosed sexual abuse, requiring multiple genital examinations to rule out the possibility of a foreign body.<sup>(4)</sup> In addition, the presence of a vaginal foreign body may indicate sexual abuse.<sup>(4,5)</sup>

In this report we present the case of a child who had urinary symptoms and vaginal discharge for two years as a result of vaginal foreign bodies with the aim to raise awareness of the importance of genital symptoms in a child, especially unresolved ones, and of the need for a detailed medical history, examination, and differential diagnosis followed by thorough review when symptoms persist.

## CASE REPORT

We present the case of a five-year-old girl with a medical history of asthma and allergic rhinitis, on regular treatment with inhaled and nasal medications. In June 2020 the patient began to have foul-smelling urine, occasional urinary leakage, intermittent foul-smelling vaginal discharge and nonspecific abdominal pain. The patient was admitted to the emergency department. The urinalysis and urine culture were both negative. Nevertheless, she was prescribed cefuroxime 30 mg/kg/day, twice daily, for ten days.

After one month of persistent symptoms, she was evaluated by her family physician, who prescribed a single dose of mebendazole 20 mg/ml. In this second evaluation, there were no notable changes in the physical exam, and bladder and renal ultrasound studies were ordered, both of which showed no abnormalities. The child then returned to the emergency department multiple times, with repeated urinalysis, urine cultures, and vaginal swabs, yielding negative results. A comprehensive evaluation for sexual abuse was conducted, including detailed history-taking, a physical examination by appropriately trained clinicians, and review of behavioral and clinical findings. She was prescribed three

courses of amoxicillin with clavulanic acid 50 mg/kg/day, twice daily for four days, along with clotrimazole 10 mg/g once daily for one week, without symptom improvement.

In January 2021, a pediatrician asked for a pelvic ultrasound, and an anomaly in the vaginal canal was detected. The child was then referred to pediatric surgery, and an intravaginal foreign body (a doll's shoe) was removed under radioscopy guidance in February 2021. Postoperatively she presented with brownish and blood-streaked discharge, persisting for six more months, which led to additional emergency visits. No further assessments were done during these visits other than the first-line investigations described above.

In January 2022, during a follow-up appointment with the pediatrician, a decision was made to proceed with vaginoscopy. During the procedure, two additional intravaginal foreign bodies were removed (a skin-colored dress and a small plastic bottle, which were difficult to visualize due to surrounding inflammatory tissue). After this, the symptoms resolved completely.

When asked about why she had inserted the toys into her vagina, the child answered that was she was mimicking her mother's behavior, when inserting the menstrual cup.

## DISCUSSION

Vaginal foreign bodies are rarely seen in pediatric populations.<sup>(1)</sup> Nevertheless, when dealing with urinary symptoms, vaginal bleeding, or foul-smelling discharge in a child, this etiology must not be overlooked, particularly in cases of recurrent or persistent complaints. Communicating with children can be challenging, often leading to delays in diagnosis. This case illustrates how the detection of vaginal foreign bodies can be particularly difficult due to the nonspecific nature of symptoms and the risk of overlooking or misinterpreting clinical signs, resulting in a delayed and inaccurate diagnosis and treatment.

A thorough clinical history plays a crucial role in these cases, reportedly leading to a diagnosis in approximately half of them.<sup>(6)</sup> Nevertheless, in prepubertal patients, the patient's history is almost always obtained from parents or caregivers, who may be unaware of the problem. Whenever possible, the child should be questioned directly about her symptoms and whether she has placed any objects in the vagina. Initially, the laboratory work-up should be guided by the clinical history and physical examination and may include a complete blood count and blood levels of inflammatory markers, urinalysis, and urine culture to determine the presence or absence of urinary tract infections, and a vaginal swab to rule out vaginitis or sexually transmitted infections.<sup>(6)</sup>

Despite basic investigations and empiric treatment, the diagnostic process must continue in the presence of persistent symptoms with normal results in basic investigations. In the present case, it took two years to achieve complete symptom resolution, causing substantial psychological distress for both

the child and her family.

An age-appropriate external gynecological examination should be conducted and must be detailed, as it may reveal the foreign object itself or indirect signs such as erythema, edema, or vaginal discharge. The child can be placed in two different positions for this examination: in the frog-leg position, which allows parental assistance, or the often-preferred knee-chest position, which enables deeper visualization of the vaginal canal. If no abnormalities are found in the gynecological examination, but clinical suspicion remains high, vaginal irrigation can serve both diagnostic and therapeutic purposes. It is also important to assess the pubertal stage, particularly in cases of vaginal bleeding.<sup>(6)</sup>

When the gynecological physical examination is inconclusive or cannot be performed due to patient-related factors, imaging modalities may aid in identifying vaginal foreign bodies. Each modality has its own indications and limitations, with none being unequivocally superior. Pelvic ultrasound can identify medium-to-large non-metallic objects but may miss smaller or common materials such as toilet paper or small plastic or wooden objects, as in this case. Pelvic radiography is useful for detecting radiopaque foreign bodies but raises concerns regarding radiation exposure. Magnetic resonance imaging may detect small wooden objects and is valuable for surgical planning; however, it can be difficult to tolerate for children and is contraindicated in the presence of metallic or magnetic objects.

Although imaging can be useful in selected cases, early consideration of vaginoscopy under anesthesia is warranted when suspicion of a vaginal foreign body is high.<sup>(6)</sup> Additionally, the persistence of symptoms following object removal should raise suspicion of presence of multiple foreign bodies, reinforcing the need for thorough diagnostic procedures like vaginoscopy early in the diagnostic process.

Several techniques are available for removing vaginal foreign bodies. Most cases can be solved with gentle irrigation using saline or water, employing a urethral catheter or infant feeding tube, with application of topical lidocaine or lubricating gel to the vaginal introitus. When removal is unsuccessful or when the child is highly distressed, anesthesia may be necessary to complete the examination and extraction. A cystoscope or hysteroscope may be utilized to enhance visualization, and a speculum can facilitate removal with forceps.<sup>(6)</sup> In some cases, in-office vaginoscopy without anesthesia using a portable hysteroscope enables direct visualization of the vaginal canal and cervix, allowing for a quicker diagnosis and prompt management. This method also helps assess the size, depth, and location of the object, supporting appropriate referral decisions without reliance on imaging. However, the availability of such equipment is limited in local health centers.<sup>(6)</sup>

In less frequent cases, retained objects can cause significant complications, such as: severe urogenital infections; perforation or fistula formation due to prolonged compression, leading to necrosis of the vaginal wall; vaginal

stenosis secondary to chronic inflammation; and burns or ulceration caused by batteries, among other rare scenarios.

Management must be tailored to the patient's clinical status, the severity of complications, and the available multidisciplinary expertise. For example, vaginal stenosis may require the use of vaginal dilators and/or surgical intervention, followed by topical estrogen therapy to promote tissue regeneration. In cases such as genital fistulas, extensive surgical reconstruction is typically necessary.<sup>(6)</sup>

In addition, the repeated use of antibiotics despite negative microbiological tests leads to unnecessary antibiotic exposure, raising concerns about antimicrobial resistance.

Finally, in all cases of vaginal foreign bodies in the pediatric population it is imperative to consider and carefully investigate the possibility of sexual abuse, given the severe long-term consequences of a missed diagnosis.<sup>(6)</sup>

In conclusion, this case underscores the importance of including vaginal foreign bodies in the differential diagnosis of young children presenting with recurrent urinary or vaginal symptoms unresponsive to empiric treatment. Pediatric healthcare providers must maintain a high index of suspicion and employ age-appropriate gynecological evaluations, including endoscopic procedures when indicated, to ensure timely diagnosis and management. Comprehensive follow-up is essential to guarantee complete symptom resolution and to monitor for any long-term effects on the patient's well-being.

## AUTHORSHIP

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