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**VAGINAL LEECH INFESTATION PRESENTING AS PAINLESS VAGINAL
BLEEDING IN A CHILD: A CASE REPORT**

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ABSTRACT

Background:

Leech infestation (hirudiniasis) is an uncommon parasitic condition, typically involving the nasal or oral cavities following exposure to freshwater. Genital involvement is exceedingly rare, particularly in children, and may present a diagnostic challenge when manifesting as unexplained vaginal bleeding.

CASE PRESENTATION:

We report a case of a four-year-old Pakistani girl who presented with painless vaginal bleeding occurring 24 hours after exposure to stagnant freshwater during the monsoon season. Clinical examination, laboratory tests, and pelvic ultrasonography revealed no abnormalities. Owing to persistent bleeding, vaginoscopy was performed under general anesthesia. Saline irrigation revealed a live leech within the vaginal canal, which exited spontaneously and was removed. Bleeding resolved completely, and the child remained asymptomatic on follow-up.

CONCLUSION:

This case emphasizes the need to consider leech infestation in the differential diagnosis of pediatric vaginal bleeding following freshwater exposure.

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INTRODUCTION

Leeches are blood sucking worms belonging to phylum Annelida and class Hirudinea. They are invertebrates with segmented bodies. These are annelid parasites that vary in size from 2-5cm unfed and 10-15cm after blood ingestion. Leeches are primarily dwelling in stagnant water bodies, ponds and streams[1]. They have suckers which are their weapon of attack to enter the body of the host. An anterior sucker at the head of the leech is causative of the bite that induces the wound to suck blood from the host while an inferior sucker at the tail is responsible for anchorage to the host mucosal lining.

Leech infestation, also known as Hirudiniasis, is an unusual but prevalent medical entity that occurs after coming into contact with contaminated water bodies especially in the tropical and subtropical regions. The most often reported and favoured anatomical sites of leech infestation are those which have moist mucosal lining as they aid in attachment and feeding. These sites include nasal cavity, oropharynx, larynx, esophagus, rectum and bladder [2]. Clinical infestations vary depending on the site of infestation and may include nose bleeds, coughing up blood, difficulty in swallowing, presence of blood in urine and unexplained bleeding. But the most prevalent of these symptoms is continuous bleeding from the site of attachment. In such cases, prolonged blood loss can lead to anemia, hematemesis and even death.

Leech infestation in genital tract is extremely rare, especially in the pediatric population. Vaginal bleeding in female children may be due to trauma, precocious puberty, urethral prolapse, genital warts or infectious vaginitis and foreign body. Vaginal leech infestation differential diagnosis includes painless vaginal bleeding with no signs of trauma or infection. This possesses a significant diagnostic challenge as it may raise concern for other causes of paediatric bleeding including trauma or injury. Leech infestation awareness is important in regards to unexplained bleeding, especially in monsoon season, as early diagnosis can prevent further complications like that of anemia and hematemesis.

This case report highlights a rare presentation of vaginal leech infestation which caused severe vaginal blood loss in a 4 year old female child and emphasizes the importance of considering parasitic leech infestation as a differential diagnosis of paediatric vaginal bleeding.

BACKGROUND:

A four-year-old South Asian female child presenting with vaginal bleeding for about three days was brought to hospital for diagnosis. The parents reported that the child had visited her grandparents

home 3 days ago and upon return started to show vaginal bleeding. The child did not feel any discomfort or pain from it and the only way they became aware was the blood stains on her trousers. Upon further examination it was reported that the child went swimming in a pond near her grandparents home and there had been many episodes of rain due to the monsoon season.

On examination, the bleeding was described as bright red in colour, painless and without any associated discomfort. No bleeding from any other body parts was reported. On clinical examination, there were no signs of genital injury or bruises at any part of the body which excluded sexual abuse as a cause. The child's thighs and vulva were soaked in blood with minimal vaginal bleeding. In general the child was alert, healthy and had normal body vitals. Laboratory investigations, including complete blood count and hemoglobin levels, were within normal limits. Laboratory findings were: Hemoglobin=10g/dl, platelet count = 268,000 cells/microliter, normal leukocyte count and no parasite on stool examination, PT=19.1 sec, PTT=28.9 sec. Ultrasound of the pelvic region showed no abnormalities.

Due to continued vaginal bleeding and no conclusive diagnosis, with consultation of paediatric surgeon and a gynaecologist, the child was scheduled for a genitoscopy (vaginoscopy). The procedure was performed under general anesthesia. During genitoscopy, sterile saline is instilled in the vaginal canal to allow better visualization of the mucosal surface, allowing inspection for any lesions, foreign bodies or parasites. This allows for things to be seen that would not be visible in collapsed vaginal walls. Sterile saline also helps mobilize and detach any organism attached to the body surface.

During the procedure, as saline was instilled in the vaginal canal, a leech was observed moving in the canal. The leech spontaneously started to move out from the vaginal canal. No forceful method was used to remove the leech as it could empty its gut contents, or its jaws may remain in the wound, raising the risk for infections. The leech dislodged without intervention. Vaginal bleeding stopped after 2 hours. The child was kept under observation for sometime and was later discharged that day without any medication as a follow up.

DISCUSSION:

In prepubertal females, the most common causes of painless vaginal bleeding are vaginal foreign bodies, vulvovaginitis, trauma, vaginal malignant tumors, and urethral mucosa prolapse [3]. Leech infestations in humans are generally uncommon and can occur externally or internally. Various human body sites are reported to get leech infestations, such as the nose, pharynx, larynx, esophagus, rectum,

and bladder, but leech infestations in the vagina are extremely rare. There are various differential diagnoses for vaginal bleeding in prepubertal females, and the main concern is sexual abuse, posing a serious concern for the parents. The key distinguishing factors here are painless bleeding and absence of external trauma, ruling out sexual abuse.

The painless nature of bleeding is due to a local anesthetic agent. Alongside this, leech saliva also has Hirudin (a potent anticoagulant), calin (a protein inhibiting platelet aggregation), histamine-like substances (vasodilators), and hyaluronidase, causing continuous bleeding and a fresh red color [4]. Diagnosis is often a challenge in prepubertal females due to anatomical limitations, such as intact hymen, narrow vaginal canal, and un-estrogenized vaginal walls. The ultrasound was likely normal due to the soft-bodied nature of the leech having similar acoustic impedance to the vaginal wall, making it difficult to distinguish. Therefore, the gold standard for detecting foreign bodies is Examination Under Anesthesia (EUA) combined with Vaginoscopy [5].

For the treatment, the first step is detachment of the leech, which can be achieved by saline irrigation or vinegar. The leech should not be removed forcefully as it can empty its gut contents, or its jaws may remain in the wound, raising the risk for infections. A hypertonic solution can disturb the osmotic balance of the leech, causing it to detach spontaneously [6]. After its detachment, pressure should be applied to the wound to stop the bleeding. The wound should be rechecked to inspect for infection [6].

CONCLUSION:

In conclusion, various factors can cause bleeding in prepubertal females, and vaginal leech infestation should always be included as a differential diagnosis, especially in rural areas. This case necessitates the importance of thorough history-taking (especially asking about water exposure) to avoid overlooking any potential cause. Furthermore, awareness should be raised about swimming in stagnant bodies of water, especially during the rainy season.

Author Declarations

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Conflicts of Interest / Competing Interests

The authors declare that they have no conflicts of interest or competing interests.

Ethics Approval / Declarations

Ethical approval was not required for this study as it is a single case report. The study was conducted in accordance with institutional and ethical standards.

Consent to Participate

Written informed consent was obtained from the patient's parents/legal guardians for participation in this study.

Consent for Publication

Written informed consent was obtained from the patient's parents/legal guardians for publication of this case report and any accompanying images.

Author Contributions

Muhammad Abdul Haseeb Khan and Syed Mujtaba Hussain were primarily involved in data collection, literature review, manuscript drafting, and revision.

Dr. Jehangir Khan, Dr. Parveen Shafi, and Dr. Muhammad Rashid were responsible for clinical management of the patient, critical review of the manuscript, and providing expert clinical input.

All authors read and approved the final manuscript.

Data Availability

All data generated or analyzed during this study are included in this published article.

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