Unexpected reach of a leech

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Abstract Vaginal bleeding as the result of a leech infestation is rare. Here we present two cases of hypovolemic shock with severe anemia requiring blood transfusion due to leech infestation. We also briefly review sparse literature available on this entity.

Keywords Vaginal bleeding · Leech · Hypovolemic shock

Introduction

Leeches are segmented worms of phylum Annelida which mostly reside in freshwater environment like rivers and ponds in tropical and subtropical countries. It has the habit of entering the anatomical orifices of human beings and

animals. We present two rare cases of leeches in the vagina as a cause of profuse vaginal bleeding resulted in hypovolemic shock.

Case 1

A 21-year-old unmarried engineering college student was brought to the ER following a collapse in an obstetrician's clinic in South India. History revealed that she had sudden onset of painless moderate vaginal bleeding of 2 days duration which was fresh without any clots. Her menarche had occurred at the age of 15 years, with subsequent regular menstrual periods. Her last menstrual period (LMP) was 6 days before the onset of the abnormal per vaginal bleeding. There was no history of trauma or abuse. On physical examination, she was drowsy but arousable. Her conjunctiva was pale. Her blood pressure was 80/40 mm Hg with heart rate of 130 beats per min. Her abdomen was soft and non-tender and no mass was palpable. Vaginal examination revealed a normal size uterus; her cervical os was closed.

Her hemoglobin was 6 gm/dl. Her other hematological, biochemical, coagulation profile, liver function test and USG abdomen and pelvis were within normal limits. Her pregnancy test was negative. In view of hemodynamic instability and low hemoglobin she had received two units of group specific, cross matched packed cells. Vaginal speculum examination under anesthesia revealed three live reddish brown leeches fully engorged with blood at the posterior wall of the cervix. These were removed by plain forceps. Leech bite wounds were small, red spots bleeding actively without any edema. She was discharged home on the third day with stable haemodynamics. The patient was in good health when she came for a follow-up. On close

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enquiry, she had a holy bath in a pond which could have been the source of the leech infestation.

Case 2

A 20-year-old unmarried college student was brought to the ER of a hospital in South India with moderate vaginal bleeding and not associated with pain since 6 days. She was seen by a general practitioner and had been treated with oral contraceptive pills for 2 days. However, the bleeding increased. Her periods were regular with normal flow. Her LMP was 8 days before the onset of the abnormal per vaginal bleeding. There was no history of trauma or abuse. She was pale with cold clammy skin and her blood pressure was 80/50 mmHg with heart rate of 110 beats per min. Her hemoglobin was 5 gm/dl and other investigations were within normal limits. Two live leeches in the posterior fornix of the vagina revealed on vaginal examination under anesthesia were removed with a forceps. She received three units of packed cell transfusion and iron supplements during the stay and was discharged on day three with stable vitals. On close enquiry, she went to excursion to a hilly area and had a bath in the pond which would be the cause for the leech infestation.

Discussion

Usage of leeches in medicine is perhaps as old as human civilization itself. Accounts of leech application to patients were found in Egyptian tombs dating back to 1500 B.C. In late 1950s, the isolation of an anticoagulant called “hirudin” from the pharyngeal secretions of leech by Markwardt (1956) further consolidated the medical value of leech. Its popularity in microsurgery gained a momentum when a Harvard physician Joseph Upton used leeches to successfully reattach the ear of a five-year-old child in 1985 (Wang 2011). Since then, leeches have been used in various plastic and reconstruction procedures including severe venous varicosities, fingers, toes, ear, and scalp reattachments, skin flap surgery, and breast reconstruction. Furthermore, leeches are the first live animals to receive the privilege of being an approved medical device for use in healing by the Food and Drug Administration (FDA). On the opposite extreme, leech infestation of various parts of the body including nose, vagina, pharynx, larynx, esophagus, rectum, and urinary bladder have been reported sporadically where they have caused significant morbidity. Rarely, life-threatening shock, intractable hemorrhage, and severe anemia have been encountered (Kose et al. 2008).

Abnormal vaginal bleeding in adolescents frequently occurs as a result of dysfunctional uterine bleeding and pregnancy related complications (APGO 2002). Vaginal foreign bodies, cervicitis, genital warts, pelvic inflammatory disease and coagulation disorders, are considered relatively uncommon causes. Irrespective of the etiology, the approach to vaginal bleeding remains the same and involves appropriate history and physical examination followed by pregnancy test and pelvic ultrasound. Further testing depends on the suspected etiology of the bleeding.

Vaginal bleeding due to leech bite is sparse in the literature (Prasad and Sinha 1983; Asrat 2006). A couple of cases have been described from places where the practice of immersing the body in a river or pond is prevalent (Prasad and Sinha 1983; Asrat 2006). One case occurred during unsupervised leech therapy (again occurred during immersion in a leech pond) for varicosities (Kose et al. 2008). Many patients are empirically treated with oral contraceptive pills after excluding pregnancy like the one seen in our case thereby further deferring the diagnosis. In keeping with the cultural norm, vaginal examination is often not performed in virgins in most tropical countries unless absolutely necessary. Without direct visualization on speculum examination, this diagnosis can be easily missed. Finally, the pharyngeal secretions of leech contain numerous chemicals including an anesthetic agent. Hence, leech bite is painless and causes no symptoms initially. These factors in combination lead to presentation at a later stage with severe anemia requiring blood transfusion and hemodynamic compromise as seen in both of our cases.

Removal of the leech should be done carefully. Common, but medically inadvisable, techniques of leech removal include application of salt, alcohol, insect repellent, a flame, or a lit cigarette. This may cause regurgitation of its stomach contents into the wound during detachment running the risk of infection (Times Online 2006). *Aeromonas hydrophila* is a bacteria found in the intestine of the leech and has been reported to cause infection of leech wound (Bickel et al. 1994). Similarly, forceful removal of the leech is not advisable as it may cause the teeth to remain in the wound inciting infection. The exposed wound should be irrigated thoroughly with sterile water or normal saline solution to remove residual secretions. Bleeding often stops with application of local pressure and rarely thrombin soaked sterile gauze application is required. Bleeding after leech bite usually lasts for up to 24 h after extraction (Adams 1989). Severe anemia needs blood transfusion as in our case. There has been only one case in the literature where coagulation parameters have been significantly altered due to leech bite and required administration of fresh frozen plasma (Kose et al. 2008).

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