

A Case Report of a Patient Who Had Intravaginal Leech Application

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Abstract

Intravaginal leech application is a traditional medical practice used in some cultures to treat various gynecological conditions. Leeches are believed to improve blood circulation and promote healing in the affected area. Studies have shown that the bioactive substances injected by leeches, when their mechanisms of action are examined, can be used in the treatment of many diseases. In this case report, we present a case of vaginal bleeding after intravaginal leech application.

Keywords: Leech therapy, Intravaginal bleeding, Hirudotherapy

Introduction

Intravaginal leech application is a traditional medical practice used in some cultures to treat various gynecological conditions (1). Leeches are believed to improve blood circulation and promote healing in the affected area. The mechanism of action of leech therapy occurs when leeches inject a secretion containing many bioactive substances into the circulation while sucking blood (Table 1). Studies have shown that the bioactive substances injected by leeches, when their mechanisms of action are examined, can be used in the treatment of many diseases (2, 3). Leech therapy is a treatment method that may lead to undesirable effects if not performed by competent practitioners. Improperly performed leech therapy may result in complications such as prolonged bleeding, wound infections, hypovolemic shock, anemia, and allergic reactions (4).

In this case report, we present a case of vaginal bleeding after intravaginal leech application.

Case Report

A 40-year-old female patient (G3-P2-A1) consulted a traditional healer who recommended intravaginal leech application to increase her sexual pleasure and boost her immunity. The patient agreed to undergo the procedure,

and 11 intravaginal leeches were placed in a traditional complementary medicine center two days ago. The leeches were removed approximately six hours after the application, after which the patient experienced mild pain and discomfort in her lower abdomen. On the first day, the patient was aware that these symptoms could occur after leech therapy and did not seek medical attention. However, on the second day following the procedure, she began to experience heavy vaginal bleeding. The patient then went to the emergency service, complaining of persistent abdominal pain and bleeding in the genital area that would not stop.

On physical examination in the emergency department, the patient was pale, anxious, and tachycardic (pulse 110/min), and blood pressure was 90/60 mmHg. In the pelvic examination, active bleeding foci with clots were observed in the vaginal dome. Due to the proximity of the anatomical region, melena and fresh blood were not detected in the rectal examination performed to exclude bleeding from the lower gastrointestinal tract. There was no evidence of trauma or infection. Intravenous fluid (2000-3000 cc saline) was started immediately and blood transfusion (erythrocyte suspension) was considered. He was also given antibiotics to prevent infection and analgesics for pain relief. In our case, hemoglobin value, platelet count, prothrombin time and activated partial thromboplastin time were within normal limits. The b-hcg result of our patient was negative and it was determined that she was not pregnant.

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Table 1: Some bioactive substances in leech secretion and their effects (2)

Hirudin	Inhibits blood coagulation by binding to thrombin
Calin	Inhibits blood coagulation by blocking the binding of Von Willebrand Factor to collagen, inhibits collagen -mediated platelet aggregation
Destabilase	Dissolves fibrin with monomeric activity and exhibits thrombolytic effect
Hirustatin	Inhibits cathepsin G, kallikrein, triptin, chymotriptin, and neurofolin
Bdellins	Exhibits anti-inflammatory effects, inhibits plasmin, trypsin, and acrosin
Hyaluronidase	Increases interstitial viscosity and shows antibiotic effect
Tryptase Inhibitor	Inhibits proteolytic enzymes of mast cells
Eglinler	Exhibits anti-inflammatory effects, inhibits the activity of α -chymotrypsin, chymase, subtilisin, elastase, and cathepsin G
Factor Xa inhibitor	Inhibits the activity of coagulation factor Xa by forming complexes with the same molecular densities
Carboxypeptidase-A	Increases blood flow at the bite site
Acetylcholine	It is a vasodilator
Histamine-like substances	Vasodilator, increases blood flow in the bite area

The patient, whose bleeding continued despite the first intervention, was consulted to the obstetrics and gynecology clinic for further examination and treatment. In the speculum examination performed on the patient, several active vaginal bleeding foci were observed.

Leeches were not visible upon examination; it was thought that the leeches had fallen off, been removed, or were completely thrown out due to bleeding. Additionally, clotted blood contamination was detected in the vagina. No free fluid was observed in Douglas. Vaginal bleeding foci were cauterized. After the procedure, the patient's vaginal bleeding stopped. The patient was discharged after being followed up in the hospital for 24 hours. The patient was advised to abstain from sexual intercourse for 4 weeks and to not use tampons to aid in the healing of the cervix. They were also advised to see their primary care physician for further evaluation and counseling regarding the use of traditional medicines.

Discussion

Genitourinary system and lower gastrointestinal system bleeding (GIS) are health problems frequently encountered as reasons for admission to the emergency department in hospitals. They (genitourinary system and lower gastrointestinal system bleeding) can be confused due to their anatomical proximity and misexpressed, and they have the potential to threaten life. Genital tract bleeding refers to bleeding from the uterus, cervix, vagina, and urethra. Lower gastrointestinal tract bleeding is considered bleeding distal to the ligament of Treitz (5, 6). Due to the proximity of the anatomical regions, patients may not be able to distinguish between genitourinary bleeding and GIS bleeding. In these patients, rectal examination

(rectal touch) and vaginal examination make the correct diagnosis. Healthcare professionals should be able to differentiate between genitourinary system bleeding and GIS bleeding. Hypovolemic shock may develop as a result of genitourinary system bleeding and lower gastrointestinal system bleeding. If hypovolemic shock is not diagnosed and treated early, it increases the risk of mortality. Because of the risk of mortality, the evaluation, diagnosis, and treatment approaches for patients with bleeding in the emergency department are of particular importance.

Intravaginal leech application is a traditional medical practice that has been used for centuries in the treatment of various gynecological ailments. Leeches are believed to improve blood circulation and promote healing in the affected area (1, 7). However, this application may cause various complications, such as bleeding, infection, and allergic reactions. Vaginal bleeding following intravaginal leech application is a rare but serious complication that can lead to significant morbidity and mortality if not recognized and treated promptly (7). The exact mechanism of bleeding after intravaginal leech administration is not fully understood. It is believed that leeches can cause trauma to the vaginal mucosa, which can lead to bleeding. Due to the anticoagulant component of leech saliva, a leech bite may cause prolonged bleeding that cannot be stopped with compression (8, 9, 10). The risk of mortality increases in patients with a history of anticoagulant, antiplatelet, and non-steroidal anti-inflammatory drug (NSAID) use.

In the case report by Zengin et al. (11), it was noted that a patient with a leech bite had prolonged prothrombin time and activated partial thromboplastin time. In the case report by İkizceli et al. (11), a 19-year-old male patient developed bleeding that lasted up to 18 hours in the area where leech therapy was applied, but laboratory parameters such as

platelet count, prothrombin time, and activated partial thromboplastin time did not show any changes. Similarly, in our case, the platelet count, prothrombin time, and activated partial thromboplastin time were within normal limits. However, normal prothrombin and activated partial thromboplastin times may not exclude severe coagulation disorders. Hirudin and other bioactive substances secreted by leeches can impair coagulation without affecting the results of coagulation tests (1, 9).

The management of vaginal bleeding after intravaginal leech administration depends on the severity of the bleeding. Superficial skin bleeding can typically be stopped with short-term compression, unless the patient has a coagulation disorder or is taking anticoagulants. In mild cases, conservative treatment with observation, bed rest, and analgesia may suffice. However, in more severe cases, surgical interventions such as cautery, ligation, or hysterectomy may be necessary.

Güven et al. (13) stated that bleeding stopped after fresh frozen plasma and tranexamic acid treatment in a patient who presented with stage 3 shock due to bleeding after leech application. Cases benefiting from primary suture after local bleeding have been reported previously (12, 13). In our case, intravenous fluids (2000-3000 cc saline) were immediately started, and blood transfusion (erythrocyte suspension) was considered. Additionally, antibiotics and analgesics were given to prevent infection and alleviate pain. Vaginal bleeding foci were cauterized, and after the procedure, the patient's vaginal bleeding stopped. However, further studies are required to establish bleeding control after leech therapy.

Conclusion

Consequently, healthcare providers should be aware of the potential risks associated with traditional medical practices such as intravaginal leech administration. Patients should be educated about the potential risks and encouraged to seek medical attention if they experience any adverse effects after using bleeding-enhancing drugs or after applications such as intravaginal leeches. More research is necessary to better understand, prevent, and manage the mechanisms of complications associated with traditional medical practices and develop effective strategies.

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