

Trial of hirudotherapy in labial necrosis: A case report

Labial nekrozda hirudoterapi denemesi: Olgu sunumu

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Abstract

Treatment of a patient who developed post-operative labial necrosis was aimed with hirudotherapy. A Bartholin cyst was excised but because of the size of the cyst, labial asymmetry occurred, therefore, labial reconstruction was performed on the left labium majus. On post-operative Day 2, the labia became ischemic and necrosis began to develop. We applied hirudotherapy, but no difference was observed after the 5th day. Part of necrotic labium spontaneously split from the healthy tissue underneath. Leech therapy has been used for a long time; however, it was approved by FDA in 2004 and it is a very rarely used treatment method in gynecology. There are no guidelines on duration of leech application, and we wanted our case to set an example. In our case, we eventually had to excise the necrotic labium, which may be due to delay or the insufficient length of leech therapy.

Keywords: Hirudotherapy, Necrosis, Labioplasty, Postoperative care, Leech therapy

Öz

Bartolin kist eksizyonu sonrası labial nekroz gelişen bir hastanın hirudoterapi ile tedavisi amaçlandı. Büyük kist boyutundan dolayı labial asimetri mevcuttu, bu nedenle sol labium majusta labial rekonstrüksiyon yapıldı. Ameliyat sonrası 2. günde iskemi ve nekroz gelişen hastaya hirudoterapi uygulandı, ancak 4. ve 5. günden sonra bir fark izlenmedi ve nekrotik labiumun bir kısmı alttaki sağlıklı dokudan kendiliğinden ayrıldı. Sülük tedavisi uzun süredir kullanılmaktadır, ancak 2004 yılında FDA tarafından onaylanmıştır ve jinekolojide çok nadir kullanılan bir tedavi yöntemidir. Sülük uygulamasının süresine ilişkin bir kılavuz yoktur, bu nedenle olgumuzun bir örnek oluşturması istenmiştir. Bizim vakamızda, nihayetinde nekrotik labiumu eksize etmek zorunda kalınmıştır, ancak bu sülük tedavisinin gecikmesine bağlı olabilir veya tedavi süresi yeterince uzun olmayabilir.

Anahtar kelimeler: Hirudoterapi, Nekroz, Labioplasti, Postoperatif bakım, Sülük terapisi

Introduction

Hirudotherapy, which is use of leeches as a complementary treatment, has been applied in medicine since the ancient times. Medical records show its use in Egyptian, Chinese, Anglo Saxon, Arabic and Greek medicine [1,2]. Although it has been abandoned with the rising of modern medical technology and practice, hirudotherapy gained attention again recently.

Hirudo medicinalis is a hermaphroditic aquatic blood-sucking worm measuring 3 to 5 cm and weighing 1 to 2 grams when fasting [3]. A leech can ingest from 5 to 20 mL of blood from 15 minutes to 2 hours, and spontaneously detach itself from the tissue. After detachment, the site where the leech has bitten continues to bleed. The leech's saliva harbors several substances, anticoagulants like hirudin, calin, inhibitors of kallikrein, hyaluronidase, histamine-like vasodilators, collagenase, and analgesic compounds [4,5]. It has also been shown that leeches secrete broad-spectrum antibacterial peptides [6].

Indications of hirudotherapy vary. It is used in varicose veins to draw blood from deeper tissues, in chronic skin diseases, transplanted or reimplanted tissues, thrombotic disorders, and in rheumatologic diseases to reduce pain and inflammation[6,7].

Though plastic surgeons and complementary medicine experts use medical leeches widely, it is not common in gynecology. We herein present a case of labial necrosis after Bartholin cyst excision, managed with hirudotherapy.

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Case presentation

A 36-year-old woman presented in the gynecology outpatient clinic with swelling of vulva. She had no personal or family history of any chronic disease. She had not been using any medication. Gynecologic examination revealed that the patient had a 7 cm wide Bartholin cyst on left labium majus. Right labia appeared normal. Speculum examination and transvaginal ultrasound was not performed because the patient was a virgin.

After informing patient about the condition, we decided to perform Bartholin cyst excision. Operation was uneventful, without hemorrhage. Due to the size of cyst, there was labial asymmetry, therefore, labial reconstruction was performed on the left labium majus.

In post-operative follow up, hemoglobin and hematocrit count did not decrease, and there was mild leukocytosis. On the second day, we realized a swelling and ecchymosis on left labia while changing the dressing. Close follow up continued, however the ecchymosis grew, and the tissue appeared necrotic (Figure 1). Usually, excision is the treatment of choice when it comes to necrosis. Considering the patient's age and virginity, and the possible labial loss of normal structure, we discussed the matter with our patient and decided mutually to try hirudotherapy. Risks and benefits of leech therapy were discussed with the patient and an informed consent was obtained.

First, medical leech was put on the affected labia until the leech detached on its own (Figure 2). After the first session, there was immediate improvement of the necrotic tissue, so a 5-day, twice daily therapy was planned (Figure 3). In the first 3 days, the swelling regressed. However, no physical change of appearance was observed on days 4 and 5. While we were contemplating whether to go on with hirudotherapy, a part of the necrotic labium spontaneously split from the tissue healthy underneath (Figure 4). After that, we decided to excise the affected tissue. Excision was performed on the 7th post-operative day. After routine follow up, the patient was discharged. Control examination was performed on the 10th day of discharge. There were no bleeding or signs of infection on the incision site. Hemoglobin levels were stable.



Figure 1: On the second post-operative day the ecchymosis grew and the tissue appeared necrotic



Figure 2: Medical leech was put on the affected labia until the leech detached on its own



Figure 3: After the first session there was immediate improvement of the necrotic tissue



Figure 4: On the 7th post-operative day the necrotic labia detached from the healthy tissue underneath

Discussion

Leech therapy has been long used but it is approved by FDA in 2004. The mechanism of action is yet to be fully clarified. After a leech bite, hyaluronidase and collagenase access the tissues and vascular structures; vasodilatation occurs by the action of histamine-like molecules; platelet functions, kinin activity, and the coagulation cascade are inhibited; and inflammatory reactions are suppressed. Animal experiments also have shown that hirudotherapy is useful on wound/tissue repair [8-11].

Since it is a complementary technique, there is no guidelines or consensus on the duration of leech application and number of simultaneously used leeches. We let the leech detach itself in order to have the maximal amount of tissue to heal and to avoid infection. We used one leech at a time, twice daily.

The total duration of hirudotherapy is not understood or explained. We conducted the therapy for 5 days. The data in the literature varies in a range from one to 22 days [12]. In theory, average duration of hirudotherapy should correspond to neovascularization on the affected site. Leech therapy is highly used in plastic surgery for flap salvage and a systematic review of Herlin et al. stated that the average time of therapy is 6.3 days and generally does not exceed 7 days [3]. We stopped the treatment on the 5th day, due to lack of any macroscopic sign of improvement. It is our opinion that the treatment duration should not be standardized, because data usually depends on case reports, and every condition has unique needs.

Risk of bleeding should be kept in mind, and the patient must be monitored with vital signs and a complete blood count [3]. There was no blood loss in our case, the hemoglobin and hematocrit counts were stable. The necessity for blood transfusion is related to the number of leeches applied, the duration of their application, patient conditions, and comorbidity. We did not need blood transfusion in our case.

As a natural treatment, leech therapy is not free of complications. Allergies to leeches and its secretions should be considered [13]. Infection is a serious complication which can vary from local infections to bacteremia. A leech should not be forcibly removed, because its jaws may remain in the wound, causing infection, submucosal abscesses, ecchymosis and scarring [14]. Prophylactic antibiotics may reduce the risk of leech-borne infections. We administered antibiotherapy to our patient, and no infectious complications occurred.

Conclusion

Hirudotherapy is a valuable traditional and natural complementary treatment for tissue healing. In our case, we eventually had to excise the necrotic labium, however this may be due to delay or short duration of leech therapy. Use of leeches as a treatment method in gynecology is exceedingly rare, and we wanted our case to set an example. With coming years, more gynecologists may think of leech therapy in similar cases and we may have larger series and more reliable data.

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