Case Report

Treatment of a patient in hemorrhagic shock due to leech bite with tranexamic acid

Leeching is one of the traditional therapies commonly used in our region. It is most commonly applied to certain diseases including rheumatoid disorders, chronic headache, and skin problems. Leeching may lead to some complications such as ceaseless bleeding. This case report describes a 21-year-old man presenting to the emergency department with shock due to ceaseless bleeding following leeching applied for acne on his face. Because the bleeding of the patient could not be stopped despite the pressure dressing, repeated doses of 250 mg tranexamic acid were given to the patient. The vital signs of the patient were restored after the bleeding stopped, and regular saline solution was infused. He was discharged from the emergency department, as his hemoglobin and hematocrit values were not observed to decline during the follow-up.

Diseases for which leeching was used include bleeding, systemic disorders such as skin diseases, inflammation, nervous system abnormalities, reproductive system and urinary problems, and dental problems [1]. Although leeches are endoparasites, they lead to severe complications and even rarely death. Their most common adverse effect is infection, whereas prolonged hemorrhage due to leech bite is one of the most frequently reported complications [2]. This case report presents our approach to a male patient who presented to the emergency department (ED) with prolonged hemorrhage following the leech therapy he applied for acne on his face.

A 21-year-old male patient was brought to the ED because of ceaseless bleeding on the cheeks and forehead (Figure). The patient did not have a history of drug or substance abuse and any known disease. It was discovered that he tried the leech therapy, which is one of the commonly used traditional therapy methods in the region, in the morning of the same day because of the acne on his face. He was conscious when he was admitted to the ED, but he looked exhausted and pale. His blood pressure was 80/50 mm Hg, heart beat was 102/min, respiratory rate was 17/min, and body temperature was 36.6°C. Leakage-type bleeding was ongoing on both cheeks and forehead of the patient where there were leech bites. The examination of other systems revealed normal results. The international normalized ratio and partial thromboplastin time were both normal. Hemoglobin was 13.6 and hematocrit was 39.8, whereas other laboratory results were also in the reference range. The wounds with leech bites were cleaned with antiseptic solution and covered with gauze bandage. Despite the pressure dressing and intravenous supplementation of 0.9% saline infusion, his bleeding did not stop and hypotension persisted during his follow-up at the ED; thus, fresh-frozen plasma was ordered. However, it usually takes around 1 hour to prepare fresh-frozen plasma under the circumstances of our hospital; 250 mg tranexamic acid was given by slow intravenous injection until the fresh-frozen plasma was prepared. As tranexamic acid was observed to be useful to stop bleeding, a second dose was injected. It was observed that tranexamic acid stopped the hemorrhage completely following the second dose. Because the vital signs of the patient were stabilized during the follow-up, we did not give the fresh-frozen plasma that was ready to use.

Furthermore, the hemogram values of the patients did not have any decline that would require the transfusion of red blood cell concentration. Because the repeated testing of hemogram and hematocrit values did not show any decline and the overall state was improved, he was discharged and referred to the dermatology clinic for oral antibiotic treatment after his 10- to 12-hour follow-up at the ED.

There are a few treatment options used for prolonged bleeding due to leech bite. The first option is to apply pressure with a gauze bandage to stop bleeding in cases that are not severe [3]. Fresh-frozen plasma is another common method used for more severe cases due to leech bite [4]. Savrun and Tannverdi [5] gave fresh-frozen plasma to treat their patient who used leeching because of knee pain and developed hemarthrosis as a result. Red blood cell concentration is also transfused for patients who develop hemorrhagic shock due to the decline in hematocrit [6]. Köse et al [7] also transfused red blood cell concentration in addition to fresh-frozen plasma to their patient who had massive bleeding due to leech bite.

Tranexamic acid acts by blocking the lysine binding sites on plasminogen. It has been demonstrated that because tranexamic acid is an antifibrinolytic agent, blood loss and transfusion requirements can be reduced by the use of this amino acid in various surgical procedures [8]. Moreover, tranexamic acid has also been demonstrated to decrease mortality due to bleeding in traumatic patients [9]. Besides, several studies have shown its use for heavy menstrual bleeding and in obstetric surgical procedures [10].

Tranexamic acid is not very well known in the literature as much as the other methods for prolonged hemorrhage due to leech bite. Savrun et al [11] used tranexamic acid to stop prolonged bleeding of a stable patient who applied leeching on the neck because of migraine headache. Unlike the patient treated by Savrun et al, our patient had a shock. Based on its common use, we thought that tranexamic acid would be useful for our patient who had prolonged hemorrhagic shock due to leech bite.

Although fresh-frozen plasma is effective for prolonged bleeding due to leech bite, it is not always possible to find it quickly like in our hospital. Instead, tranexamic acid that can be obtained more quickly and be more easily applied can be an additional or alternative treatment option for patients with prolonged hemorrhagic shock due to leech bite.
References


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