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A Case Report on Leech Bite Induced Cellulitis

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ABSTRACT:
We present a case of a 53-year-old patient with diabetes who developed cellulitis following a leech bite sustained during cattle breeding activities. The patient's underlying diabetes and delayed seeking of medical attention contributed to the severity of the infection. Aggressive antibiotic therapy and wound management led to successful resolution of the infection. This case highlights the importance of prompt medical attention for patients with diabetes, who experience insect bites or wounds, and serves as a reminder for healthcare professionals to consider unconventional sources of infection in their differential diagnoses.

Keywords: leech bite , cellulitis , diabetes mellitus, antibiotic therapy, prevention

I. INTRODUCTION

Leech bites are a common occupational hazard for individuals working in certain industries, such as cattle breeding and farming (1). Leeches (Annelida: Hirudinea) are blood-sucking aquatic animals that attach to their hosts using their anterior suckers, secreting anticoagulants and other compounds that can increase the risk of bleeding and infection (2,3). There are over 700 species of leeches, with some species commonly found in freshwater environments and others in terrestrial environments (4). In rare cases, leech bites can lead to serious infections like cellulitis, particularly in high-risk individuals like those with diabetes (5). Diabetes patients are more susceptible to developing severe infections due to impaired wound healing, immune dysfunction, and nerve damage (neuropathy) (6). Furthermore, leech bites can also lead to other complications, such as allergic reactions, necrotic lesions, and secondary bacterial infections (7,8). Early recognition and appropriate management of leech bite-related infections are crucial to prevent severe complications like abscesses, sepsis, and amputation (9,10). Additionally, prompt medical attention can also reduce the risk of long-term sequelae, such as chronic wounds and scarring (11). Here, we report a case of leech bite-related cellulitis in a patient with diabetes, highlighting the importance of prompt medical attention, effective wound care, and proper management of underlying comorbidities in preventing severe outcomes.

II. CASE REPORT

A 53 year old female patient was admitted to the general medicine department in a tertiary care hospital with complaints of pain & swelling on right thigh. She had a past medical history of diabetes mellitus , hypertension and varicose veins. She was taking medicines such as Tablet metformin (2-0-2) , Tab Atorvastatin 20 mg(0-0-1), tablet Teneligliptin 20 mg (1-0-1) and Tablet Losartan for the above mentioned conditions. During the physical examination , doctor asked her about the incident and she revealed that she was bitten by leech on her leg 5 days before admission. On examination the vital signs was found to be normal . Lab investigation report showed an increased level of GFBS(160mg/dl) . Neutrophils was found to be elevated and lymphocytes found to be decreased which clearly indicates that the patient have a bacterial infection.From the subjective and objective evidences it was concluded that the patient is having Right thigh cellulitis caused by leech bite .During the hospitalisation she was treated with Inj Cefoperazone +Sulbactum (1000 Mg+500Mg) BD &CapDoxycycline + Lactobacillus (100Mg + 5 billionspores) BD for infection. Other supportive medications include Tab Pantoprazole (40Mg)1-0-0 ,Tab Glimy (1Mg) 1-0-1 , Tab Paracetamol (650 Mg) S0S & TabDapagliflozin + Metformin (10Mg+500Mg) 1-0-0. Clinical condition improved & she was discharged after 5 days of hospitalisation .

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III. DISCUSSION

Leech bite infections are a rare but potential complication of unintentional leech bite or medicinal leech therapy. Infections typically present with symptoms such as redness, swelling, and increased pain around the bite area, and can progress to more severe complications like cellulitis and abscesses . Bacteria like Aeromonas hydrophila and Pseudomonas aeruginosa are commonly isolated from leech bite infections . Prompt antibiotic treatment and wound care are essential for effective management and prevention of serious consequences

Leech bite cellulitis occurs when bacteria enter the skin through the leech bite wound, leading to an inflammatory response and subsequent infection. The leech's saliva contains anticoagulants and other compounds that can impede the host's immune response, facilitating bacterial growth and spread . The bacteria, often Aeromonas hydrophila or Pseudomonas aeruginosa, colonize the wound and release toxins, causing tissue damage and necrosis . The resulting cellulitis is characterized by edema, erythema, and warmth, which can progress to abscesses and systemic infection if left untreated .Several risk factors predispose individuals to developing leech bite cellulitis, including poor wound care and hygiene, prolonged leech attachment, and underlying medical conditions like diabetes, immunosuppression, and peripheral vascular disease . Additionally, patients with history of previous leech therapy or skin infections are more susceptible . Leech bites on the lower extremities and bites from infected leeches are also associated with higher risk. The standard treatment for leech bite cellulitis includes administration of broad-spectrum antibiotics effective against common bacterial pathogens, such as Staphylococcus aureus and Streptococcus pyogenes. Cephalexin (500mg orally, every 8-12 hours) is a recommended first-line treatment, with amoxicillin-clavulanate (875mg orally, every 8-12 hours) and ciprofloxacin (500mg orally, every 8-12 hours) considered alternative options. However, doxycycline (100mg orally, every 12 hours) is also a crucial component of treatment, particularly in cases where the wound is contaminated with aerobic bacteria, as it provides effective coverage against both aerobic and anaerobic bacteria. The duration of treatment is typically 7-10 days. Wound care and pain management are also essential components of treatment. Doxycycline's importance in leech bite cellulitis treatment is highlighted by its ability to penetrate the wound tissue effectively and combat bacterial growth. (13,14)

IV. CONCLUSION

In conclusion, this case report highlights the potential complications of leech bites in individuals with underlying medical conditions such as diabetes. The patient, a cattle breeder, was bitten by a leech while working, which led to cellulitis, a serious infection requiring prompt antibiotic treatment and wound care. The presence of diabetes likely contributed to the severity of the infection and the need for aggressive management, as diabetes can impair wound healing and increase susceptibility to infections. This case serves as a reminder for healthcare professionals to consider leech bites as a potential source of infection in patients presenting with cellulitis, especially in individuals working outdoors or in industries that increase exposure to leeches, such as farming, ranching, or outdoor recreation. Early recognition and appropriate management are crucial to prevent severe outcomes, particularly in high-risk patients such as those with diabetes, as delayed treatment can lead to serious complications like amputation or sepsis. By sharing this case, we aim to increase awareness and promote better management of leech bite-related infections in vulnerable populations, and emphasize the importance of prompt medical attention for individuals with diabetes who experience any signs of infection.

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