



ATYPICAL PRESENTATION OF HERPETIC CELLULITIS IN AN ELDERLY DIABETIC PATIENT: A CASE REPORT

Clinical Research

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ABSTRACT

Herpetic cellulitis is a rare viral skin infection caused by the herpes simplex virus (HSV). It usually shows up as localized redness, swelling, and tenderness, which can resemble bacterial cellulitis. Unlike typical bacterial cases, it often comes with vesicular lesions and a history of herpes infection or self-inoculation. This condition may arise after trauma, surgery, or in individuals with weakened immune systems. Uncontrolled diabetes mellitus is a significant predisposing factor in herpetic cellulitis due to its role in impairing innate and adaptive immune responses, delaying wound healing, and promoting viral reactivation. In this report, we discuss a case of herpes zoster cellulitis in the right leg, along with a review of relevant literature. A 74-year-old woman presented with pain and swelling along with multiple lesions over her right lower limb. She had a history of chickenpox in her childhood and had also undergone a total thyroidectomy 12 years prior at a different hospital. Additionally, she had a history of hypertension and diabetes mellitus, for which she was on insulin (20-0-15). After a clinical examination, she was diagnosed with herpetic cellulitis in her right lower limb. In conclusion, while herpetic cellulitis is rare, it should be considered in cases that present like cellulitis, especially when vesicular lesions or a history of HSV is present. Timely diagnosis and antiviral treatment are essential for effective management and to avoid complications.

KEYWORDS

Herpes Zoster, Cellulitis, Antivirals

INTRODUCTION

Herpetic cellulitis is an uncommon skin infection caused by the herpes simplex virus (HSV), primarily HSV-1 or HSV-2. It manifests with symptoms akin to bacterial cellulitis—such as redness, swelling, tenderness, and warmth—but is characterized by the presence of clustered vesicles or ulcerations on the affected area of skin. This condition can arise from direct viral entry into damaged skin or through autoinoculation from an existing HSV lesion, as seen in cases of herpetic whitlow or labialis⁽¹⁾. Although the precise prevalence of herpetic cellulitis is not thoroughly documented due to frequent misdiagnosis, HSV itself is prevalent, with HSV-1 impacting approximately 67% and HSV-2 affecting around 13% of the global population under the age of 50, according to the World Health Organization⁽²⁾.

Herpetic cellulitis is more likely to occur in individuals with weakened immune systems, healthcare professionals, children, or those with underlying skin conditions such as eczema. It may develop following skin injuries, burns, or surgical interventions, where the virus can penetrate deeper layers of the skin. Uncontrolled diabetes mellitus significantly increases susceptibility to herpetic cellulitis by impairing immune responses and delaying wound healing. Poor glycaemic control hampers neutrophil and T-cell function, creating an ideal environment for HSV reactivation and more severe or prolonged infections. Diabetic patients may also present with atypical or recurrent lesions, leading to misdiagnosis and treatment delays. Due to its similarity to bacterial cellulitis, it is often misdiagnosed, leading to inappropriate use of antibiotics and delays in antiviral treatment. Diagnosis is confirmed through Tzanck smear, viral culture, or polymerase chain reaction (PCR). Prompt identification and commencement of antiviral therapy—such as acyclovir, valacyclovir, or famciclovir—are crucial to avert complications and ensure full recovery⁽³⁾. This is a case of a 74-year-old female patient who under a total thyroidectomy 12 years ago and have a known case of diabetes mellitus and hypertension, who is currently diagnosed with herpes zoster cellulitis on right lower limb.

Case Presentation

A 74-year-old female patient presented with complaints of pain and swelling, accompanied by multiple lesions on her right lower limb (Figure 1 and 2). She has a history of hypertension and diabetes mellitus, for which she is on insulin (20-0-15). Additionally, she underwent a total thyroidectomy 12 years ago at different facility.



Figure 1: Lateral Aspect of the Right Lower Leg During Admission



Figure 2: Medial Aspect of the Right Lower Limb

Upon admission, her vital signs were stable. She exhibited oedema in her right lower limb, along with several vesicular lesions on the medial side of her leg (Figure 3), and there was a local increase in temperature. Her blood tests revealed an ESR of 115, RBS of 357, Hb of 10.8, TC of 16090, neutrophils at 78.7%, lymphocytes at 13.6%, HbA1c of 10.1, and fasting blood sugar (FBS) levels of 244 at admission and 92 at discharge. All other blood parameters were normal.



Figure 3: Necrotizing Fasciitis with Hyperpigmentation, Desquamation

During her hospital stay, a physician was consulted regarding her uncontrolled diabetes, leading to an increase in her insulin dosage to 20-0-18, and antiviral medications were initiated. She also reported abdominal pain and a decrease in bowel movement frequency. Following a gastroenterology consultation, she was advised to continue her proton pump inhibitor (PPI), and a stool routine was performed, yielding normal results. A deep vein thrombosis (DVT) assessment was conducted, which indicated a low probability of DVT over two days of evaluation. The patient was instructed to elevate her limb with a pillow to alleviate her pain. Sterile dressings were applied using cuticell and glycerine. After completing a 7-day course of antibiotics, the patient was discharged in improved condition.

DISCUSSION

Herpetic cellulitis is a rare clinical manifestation of Herpes Simplex Virus (HSV), primarily caused by HSV-1, and is frequently misdiagnosed due to its similarity to bacterial cellulitis⁽⁴⁾. While the precise prevalence is not well-defined, HSV-related cutaneous infections represent about 1–2% of dermatologic viral conditions, with herpetic cellulitis making up a small yet clinically significant portion. Recent studies have reported atypical presentations of HSV, including recurrent preseptal cellulitis resulting from HSV-1 keratitis and non-

necrotizing soft tissue infections that are mistaken for bacterial cellulitis, underscoring the importance of clinical awareness in cases resistant to antibiotics. Unlike bacterial cellulitis, which is caused by streptococci or staphylococci, herpetic cellulitis is not responsive to antibiotics and requires antiviral therapy for resolution. Diagnosis confirmation through Tzanck smear, PCR, or viral culture is essential, and prompt initiation of systemic antiviral treatment—such as acyclovir, valacyclovir, or famciclovir—can facilitate rapid clinical improvement and minimize unnecessary antibiotic use⁽⁷⁾. Uncontrolled diabetes mellitus is a major risk factor for herpetic cellulitis due to its impact on both innate and adaptive immune responses, hindering wound healing, and encouraging viral reactivation. Poor glycaemic control adversely affects neutrophil and T-cell functionality, heightening vulnerability to severe and atypical infections, including recurrent HSV episodes⁽⁸⁾. In these patients, herpetic cellulitis may manifest with prolonged or resistant lesions, complicating diagnosis and delaying timely treatment. In recurrent or immunocompromised cases, long-term antiviral prophylaxis may be warranted due to its complications⁽⁹⁾.

In this case, a thorough look at the patient's history suggests that managing the chickenpox virus properly during her childhood, along with controlling her diabetes, could have lessened the risk and complications of the disease, as these areas are prone to bacterial colonization. The disease might have worsened due to the patient's poor management of diabetes. Herpetic cellulitis mainly occurred from immunocompromised conditions (like uncontrolled diabetes), which can heighten susceptibility by diminishing the patient's ability to fight off the virus. This case report can serve as evidence that herpetic cellulitis, when left untreated or recurrent, may contribute to prolonged inflammation and complications, particularly in individuals with underlying comorbidities. It emphasizes the importance of early recognition and appropriate antiviral therapy to prevent progression and reduce the risk of systemic involvement or secondary infections.

CONCLUSION

In conclusion, herpetic cellulitis in this instance probably occurred from underlying immunosuppression linked to uncontrolled diabetes mellitus, which weakened skin immunity and permitted viral reactivation. This case serves as evidence that herpetic cellulitis, while uncommon, can resemble bacterial infections and may result in complications if not quickly recognized and treated. Timely diagnosis and suitable antiviral treatment, along with managing blood sugar levels, are crucial for the best results. More researches are necessary to enhance clinical awareness and comprehension of this rare yet significant condition.

Acknowledgement

I would like to express my heartfelt gratitude to our patient and her family, the doctors who provided treatment, the hospital staff, the management, faculty members, and my colleagues for their invaluable contributions and unwavering support throughout this study.

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