A case report of venous ulcer mimicking cutaneous leishmaniasis

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A case report of venous ulcer mimicking cutaneous leishmaniasis

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Consent for Publication

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Key clinical message:

Accurate diagnosis of venous ulcers is essential, as they can mimic conditions like cutaneous leishmaniasis. A comprehensive evaluation, including medical history, physical examination, and diagnostic tests like Doppler imaging, is crucial to differentiate between various causes and develop an effective treatment plan for effective management. Collaboration with specialists can enhance diagnostic accuracy.

Abstract:

Venous ulcers can sometimes be difficult to diagnose accurately because they can resemble other skin lesions such as cutaneous leishmaniasis. Here, we present a patient with venous ulcer that mimic cutenous leshmaniasis and mycetoma lesion. A50- year- old female patient presented with a non-healing venous ulcer in her right lower leg, which was suspected to be cutaneous leishmaniasis, ulcerated mycetoma lesions, and misdiagnosed as cutenous leshmaniasis. She was referred to our clinic, where color Doppler sonography results revealed several findings that are consistent with chronic venous insufficiency, including incompetent superficial femoral junction (SFJ) with short reflux among the great saphenous vein (GSV), and incompetent saphenopopliteal junction (SPJ) with short reflux along the small saphenous vein (SSV). Additionally, the examination showed patency and compressibility of both GSV and SSV, as well as the presence of superficial varicose veins. Surgical closure of the fistula was done. This case report highlights the challenges in distinguishing venous ulcers from mycetoma and cutaneous leishmaniasis. Our case emphasizes the importance to consider a comprehensive assessment of the patient's medical history, physical examination, and potentially other diagnostic tests. Collaborating with experienced healthcare providers, such as dermatologists or wound care specialists, may also be beneficial in confirming the diagnosis and developing an appropriate treatment plan.

Key words:

Venous ulcer; leshmaniasis; clinical mimics; misdiagnosis; Public health

1 Introduction:

The three primary types of ulcers that affect the lower extremities are venous ulcers, arterial ulcers, and neuropathic ulcers [1,2]. Venous ulcers are the most common type of leg ulcers, while foot ulcers are more likely to be caused by arterial insufficiency or neuropathy [2]. Approximately 80% of leg ulcers are caused by venous disease, while arterial disease accounts for around 10% to 25% and can also coexist with venous disease [2]. As our population ages, the incidence of arterial insufficiency may increase. Additionally, about 10% to 15% of patients with leg ulcers have coexisting rheumatologic disease, and 5% to 12% have diabetes mellitus [2 - 5]. Less commonly, trauma, pressure, or infectious agents such as buruli ulcer, cutenous leshmanaisis and ulcerated mycetoma lesion can also cause leg ulcers [2 - 7]. It's important to note that these causes can overlap with each other and coexist with other medical conditions because they are not mutually exclusive [8].

The course and prognosis of leg ulcers can differ based on their underlying causes [2]. Compared to ulcers caused by arterial insufficiency, venous ulcers are generally less painful and have a lower likelihood of leading to amputation [2]. However, they still tend to be chronic and can exhibit unpredictable behavior. The long-lasting nature of venous ulcers, along with the associated morbidity and financial burden, has sparked renewed interest in developing innovative approaches to accelerate healing and improve outcomes [2]. Additionally, it is crucial to challenge the misconception that venous ulcers are not painful. Recent studies indicate that up to three-fourths of patients with venous ulcers experience pain, significantly impacting their overall quality of life. In this communication, we present a patient with venous ulcer that mimic cutenous leshmaniasis and mycetoma lesion.

2 Case history:

A 50-year-old female presented with recurrent right lower limb swelling, dilated veins, and multiple leg ulcers. She also experienced fever and pain in the affected leg. This wound had been treated as cutaneous leishmaniasis without any response. Her medical history began 15 years ago, shortly after giving birth to her only child. Following delivery, she developed severe pain in her right lower limb and was admitted to the hospital, where she was diagnosed with deep vein thrombosis. Treatment with heparin improved her condition initially, but she continued to experience swelling in her leg over the subsequent years, accompanied by superficially dilated veins. Approximately 10 years ago, the right leg started showing color variations on different sides. Gradually, small lesions developed, causing excruciating pain and elevated body temperature. Over time, these lesions progressed into ulcers of various sizes. The patient had been managing the condition by dressing the ulcers and wearing compression stockings.

Five years ago, she was scheduled for varicose vein surgery; however, the surgery was canceled due to weak veins discovered during the procedure. No other significant findings were noted in her medical history.

3 Methods:

On examination, the right lower limb exhibited significant swelling compared to the left limb, along with dilated superficial veins below the knee. There was noticeable discoloration in the distal leg, primarily medially over the ankle joint. The area showed varying shades of darkness at the periphery, gradually transitioning into a tight pink to reddish center. Multiple lesions were present, including a 3x2 cm dark swelling with a red sore measuring 0.5 centimeters located above the medial malleolus, and two ulcers measuring approximately 2x2 cm each with sloping edges and a red floor (Figure 1). The skin in the affected leg was tough and warm when compared to the other leg. No regional lymphadenopathy was observed, and distal pulsation remained intact. Cytology test was performed on the ulcers, which revealed no malignant changes and the scraping materials were negative for Tuberculosis and Leishmania using molecular assay.

4 Conclusion and Results:

The patient was diagnosed with chronic varicose veins after color Doppler sonography results revealed several findings that are consistent with chronic venous insufficiency, including incompetent superficial femoral junction (SFJ) with short reflux among the great saphenous vein (GSV), and incompetent saphenopopliteal junction (SPJ) with short reflux along the small saphenous vein (SSV). She was prescribed ceftriaxone injections (1 gram twice daily), metronidazole drip (500mg every 8 hours), benzylpenicillin (2 million units every 6 hours), and daily wound dressing. She was discharged in a stable condition.

5 Discussion:

In this communication, we reported on a 50- year-old female patient with a history of recurrent right lower leg swelling, dilated veins and multiple ulcers. This case highlights the challenges in diagnosing and managing chronic venous insufficiency and its complication. Deep vein thrombosis was the initial diagnosis, but the persistence and progression of symptoms suggested an underlying venous pathology.

Diagnosing venous ulcers in regions like Sudan, where endemic diseases—both infectious and non-infectious—are prevalent [9 - 20], poses significant challenges. The complexity arises from the fact that leg ulcers can result from a variety of underlying causes, including systemic health issues (Table 1), poor access to healthcare, and the impact of prolonged conflict and instability [2,7,21 – 24]. It is essential to determine the specific etiology when a patient presents with an ulcer involving the leg because the appropriate treatment may vary depending on the cause.

For ulcers on the leg, excluding the foot, the most common cause is chronic venous disease, either alone or in conjunction with other factors that impair healing, such as arterial disease, diabetes, or rheumatoid arthritis [25]. In this particular case, the patient was initially misdiagnosed as having cutaneous leishmaniasis. The endemic nature of cutaneous leishmaniasis in the region, combined with a lack of awareness among general practitioners about other clinical mimics of the condition and limited access to Doppler imaging, likely

contributed to this misdiagnosis. As a result, the physician heavily relied on clinical findings alone, without the benefit of additional investigations.

Interestingly, in the presented case, it is commendable that the healthcare team took proactive steps to rule out infectious diseases, such as cutaneous leishmaniasis, mycetoma, and tuberculosis. Molecular testing of the scraping and aspirating materials played a crucial role in excluding these infectious etiologies [26,27,28]. This highlights the importance of considering and investigating various possible causes before reaching a final diagnosis.

Furthermore, the use of Doppler scan in this case was instrumental in confirming the diagnosis of chronic venous disease and its associated complications [29]. The Doppler scan likely provided valuable information about the blood flow patterns, venous insufficiency, and potential anatomical abnormalities within the venous system of the affected limb [26]. This imaging modality is particularly helpful in assessing the venous system and its role in the development of leg ulcers.

By utilizing molecular testing and Doppler scan, the healthcare team was able to arrive at a conclusive diagnosis of chronic varicose veins with multiple venous ulcers and cellulitis. This integrated approach incorporating clinical, laboratory, and imaging findings ensures a more accurate diagnosis and guides the appropriate management plan for the patient.

Declarations

Ethics approval and consent to participate

Written, informed consent to publish history, findings, and images for educational purposes were obtained from the patients.

Consent for publication

Written informed consent was obtained from the patients for publication of this case report and any accompanying images.

Availability of Data and Materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

ATHA, AA, and EES conceived and designed the study; ATHA, AA, JCSN, CMM and EES analyzed the data; ATHA, AA, JCSN, CMM and EES wrote the manuscript. ATHA, AA, JCSN, CMM and EES revised the manuscript. All authors read and approved the final manuscript.

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Table legend:

Table 1. Causes of leg ulcer

Figure legend:

Figure 1. Image illustrating two ulcers present, each measuring approximately 2x2 cm, with edges that slope and a red floor.

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`Table 1.docx` available at https://authorea.com/users/851161/articles/1237554-a-case-report-of-venous-ulcer-mimicking-cutaneous-leishmaniasis