

Management of Diabetic Foot Ulcer through Ayurveda - A Case Report

Author(s): Dr. Manish Singh Tomar

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Author: Dr. Manish Singh Tomar, MD, PhD Ayurveda

Abstract

Diabetic foot ulcers (DFUs) present significant morbidity among diabetic patients, often leading to severe complications such as infections and amputations. While modern medicine offers various interventions, recurrence and complications remain challenging. This case report explores the efficacy of Ayurvedic treatment modalities in managing a non-healing diabetic foot ulcer in a 50-year-old female patient with a 20-year history of Type 1 diabetes mellitus. The patient exhibited a persistent ulcer in the left foot with uncontrolled hyperglycemia (blood sugar >425 mg/dL). A comprehensive Ayurvedic regimen, including Samatvam Capsules, Yakrida Powder, Dermiq Oil, Mansagni Tablets, and Medagni Tablets, was administered over two months. The ulcer demonstrated complete healing without recurrence of gangrene. This case underscores the potential of Ayurveda in managing complex diabetic complications, highlighting its integrative role alongside conventional therapies.

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Keywords: Diabetic foot ulcer, Ayurveda, Samatvam Capsules, Non-healing ulcer, Gangrene, Type 1 diabetes

Introduction

Diabetes mellitus is a chronic metabolic disorder characterized by hyperglycemia resulting from defects in insulin secretion, action, or both. Diabetic foot ulcers (DFUs) are a common and severe complication, affecting approximately 15-25% of diabetic patients during their lifetime. DFUs are associated with high morbidity, reduced quality of life, and increased healthcare costs. The pathogenesis of DFUs involves peripheral neuropathy, peripheral arterial disease, and impaired immune response, leading to non-healing wounds and increased susceptibility to infections.

Modern medical approaches to DFUs include wound care, glycemic control, antibiotics for infections, and surgical interventions. Despite these measures, recurrence and complications such as gangrene remain significant challenges. Consequently, there is a growing interest in complementary and alternative medicine (CAM) approaches, including Ayurveda, to manage DFUs effectively.

Ayurveda, the traditional system of medicine from India, offers holistic and individualized treatment strategies focusing on restoring balance in the body's doshas (Vata, Pitta, and Kapha) and enhancing natural healing processes. Ayurvedic interventions employ herbal formulations, dietary modifications, lifestyle changes, and external applications to treat various ailments, including chronic wounds like DFUs.

This case report presents the management of a non-healing diabetic foot ulcer in a middle-aged female patient using Ayurvedic therapies, demonstrating successful healing and prevention of gangrene recurrence. The report aims to highlight the potential of Ayurveda as an integrative approach in managing complex diabetic complications.

Case Report

Patient Information

A 50-year-old female patient presented to Cytoveda Clinics, Ayurvite Wellness Pvt. Ltd., with a history of Type 1 diabetes mellitus for the past 20 years. She reported a non-healing ulcer in her left foot, persisting for approximately six months. The patient's blood glucose levels were significantly elevated, with readings exceeding 425 mg/dL on multiple occasions. She had no history of previous amputations or gangrene but was concerned about the ulcer's persistence and the potential for severe complications.

Clinical Findings

Upon examination, the patient exhibited a deep, non-healing ulcer located on the plantar aspect of the left foot, approximately 3 cm in diameter. The surrounding skin showed signs of inflammation, but there were no active signs of infection such as purulent discharge or erythema extending beyond the immediate vicinity of the ulcer. Peripheral pulses were palpable, and there were no clinical signs of peripheral arterial disease. Neurological examination revealed peripheral neuropathy consistent with her long-standing diabetes.

Diagnostic Assessment

Laboratory investigations confirmed uncontrolled hyperglycemia, with blood glucose levels consistently above 425 mg/dL. Hemoglobin A1c (HbA1c) was elevated, indicating poor glycemic control over the past three months. Routine blood tests, including complete blood count (CBC), renal function tests, and lipid profile, were within expected ranges except for elevated fasting blood glucose levels. The ulcer was classified as a Grade II DFU based on the Wagner Ulcer

Classification System, indicating a deep ulcer with potential bone involvement but without gangrene.

Therapeutic Intervention

Given the chronicity and non-healing nature of the ulcer, an Ayurvedic treatment plan was formulated to address both the local wound healing and the systemic factors contributing to poor glycemic control. The treatment regimen included:

1. **Samatvam Capsules:** 1 capsule twice daily (bid) – An Ayurvedic formulation aimed at balancing the doshas and enhancing overall metabolic functions.
2. **Yakrida Powder:** 5 grams twice daily (bid) – A polyherbal powder known for its anti-inflammatory and wound-healing properties.
3. **Dermiq Oil:** Topical application to the ulcer site twice daily – A specialized Ayurvedic oil formulated to promote local healing, reduce inflammation, and prevent infection.
4. **Mansagni Tablets:** 1 tablet twice daily (bid) – An Ayurvedic supplement to enhance digestion and metabolic processes, thereby improving nutrient absorption and overall health.
5. **Medagni Tablets:** 1 tablet twice daily (bid) – A formulation aimed at improving metabolic fire (Agni), crucial for healing and metabolic regulation.

Additionally, the patient was advised on dietary modifications to control blood glucose levels, emphasizing a balanced intake of carbohydrates, proteins, and healthy fats, along with lifestyle modifications including regular physical activity tailored to her condition.

Follow-Up and Outcomes

The patient was monitored regularly over a two-month period. Blood glucose levels showed a gradual decrease, with significant improvement in glycemic control by the end of the treatment period. The non-healing ulcer demonstrated marked signs of healing, with reduction in size and depth, and complete closure achieved within eight weeks. There were no signs of infection or gangrene throughout the treatment. Post-healing follow-up indicated no recurrence of gangrene or ulceration, and the patient maintained improved glycemic control with continued Ayurvedic therapy and adherence to dietary and lifestyle recommendations.

Discussion

The management of diabetic foot ulcers remains a critical challenge in diabetic care, with significant implications for patient morbidity and healthcare systems. This case highlights the successful application of Ayurvedic principles and treatments in managing a complex DFU in a patient with long-standing Type 1 diabetes.

Ayurvedic Perspective on Diabetic Foot Ulcer

In Ayurveda, diabetes mellitus is often correlated with conditions such as Prameha, characterized by excessive urination and glucose in the urine. Diabetic foot ulcer can be correlated with dushta vrana. The chronic hyperglycemic state disrupts the balance of doshas, particularly Kapha and Pitta, leading to complications like neuropathy and impaired wound healing. The Ayurvedic approach emphasizes restoring doshic balance, enhancing Agni (metabolic fire), and promoting natural healing processes.

Therapeutic Modalities Utilized

1. **Samatvam Capsules:** These capsules are formulated to balance the doshas, particularly targeting the imbalance caused by chronic hyperglycemia. Ingredients typically include herbs that possess anti-inflammatory, antioxidant, and immune-modulating properties, facilitating overall metabolic regulation and supporting wound healing.
2. **Yakrida Powder:** This polyherbal formulation is known for its anti-inflammatory and antimicrobial properties, essential in managing chronic ulcers. Its application aids in reducing local inflammation, preventing infection, and promoting granulation tissue formation, essential for ulcer closure.
3. **Dermiq Oil:** A topical Ayurvedic oil designed to create an optimal environment for wound healing. It likely contains ingredients with antiseptic, anti-inflammatory, and regenerative properties, helping to maintain a moist wound environment, prevent infection, and stimulate cellular repair mechanisms.
4. **Mansagni Tablets:** These tablets enhance digestive and metabolic functions, crucial for nutrient assimilation and overall health. Improved digestion ensures better absorption of nutrients necessary for tissue repair and immune function, indirectly contributing to ulcer healing.
5. **Medagni Tablets:** Targeting Agni, these tablets aim to boost the body's metabolic processes, enhancing energy production and facilitating cellular regeneration. A robust metabolic fire supports efficient wound healing and systemic health improvement.

Integration with Conventional Management

While the case primarily focuses on Ayurvedic interventions, it is essential to acknowledge that comprehensive diabetes management typically involves multifaceted approaches, including insulin therapy, dietary control, and regular monitoring. The integration of Ayurvedic treatments alongside conventional medical care can offer a holistic approach, addressing both systemic metabolic dysregulation and local wound pathology.

Comparison with Modern Therapeutic Approaches

Modern treatments for DFUs emphasize stringent glycemic control, advanced wound care techniques (such as negative pressure wound therapy), surgical debridement, and infection management with antibiotics. Despite these interventions, challenges like antibiotic resistance, recurrence of ulcers, and limited access to advanced therapies persist. Ayurvedic treatments, as demonstrated in this case, offer complementary benefits through their holistic and individualized approaches, potentially reducing reliance on invasive procedures and minimizing recurrence rates.

Mechanisms of Action

The success of Ayurvedic treatments in this case may be attributed to the synergistic effects of the herbal formulations used. Many Ayurvedic herbs possess bioactive compounds with anti-inflammatory, antimicrobial, antioxidant, and angiogenic properties, which can facilitate wound healing. Additionally, improving metabolic functions and reducing systemic inflammation likely contributed to enhanced immune responses and tissue regeneration.

Limitations and Considerations

While the outcomes in this case are promising, it is essential to consider the limitations inherent in single case reports. The lack of a control group, potential placebo effects, and individual patient variability necessitate cautious

interpretation of the results. Further research, including randomized controlled trials, is required to substantiate the efficacy and safety of Ayurvedic treatments in managing DFUs.

Safety and Adverse Effects

Ayurvedic treatments are generally considered safe when administered by qualified practitioners. In this case, no adverse effects were reported, and the patient tolerated the treatments well. However, potential interactions between Ayurvedic formulations and conventional medications should be carefully monitored, especially in patients with multiple comorbidities.

Conclusion

This case report illustrates the effective management of a chronic diabetic foot ulcer using Ayurvedic treatment modalities in a patient with long-standing Type 1 diabetes. The successful healing of the ulcer and prevention of gangrene recurrence highlight the potential role of Ayurveda as a complementary approach in diabetic care. Ayurvedic therapies, with their holistic and individualized strategies, may offer valuable adjuncts to conventional treatments, enhancing overall patient outcomes. Further clinical studies are warranted to explore the efficacy, mechanisms, and integration strategies of Ayurveda in managing diabetic complications.

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