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## A case of diabetic foot managed in tertiary care institute in Himalayan Terrain

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### Abstract

Diabetic foot diseases affects almost 6.3 percent of world wide diabetic population which includes neuropathies, ischemia, infections and foot ulcers. High risk factor for diabetic foot includes poor diabetic control, neuropathy, foot deformity, high plantar foot pressure and previous history of amputation. Early screening with patient education and basic foot care advise can prevent the onset of foot ulcers. Treatment of diabetic foot ulcer requires regular debridement of non healing ulcer, good glycemic control and offloading but the primary goal of treatment is to obtain the healing as soon as possible and thus, Management of diabetic foot ulcer require early screening and multidisciplinary approach.

**Keywords:** Lipoma, giant, palmar, hand, excision

### Introduction

Diabetic foot diseases affects almost 6.3% of the worldwide diabetic population<sup>[1]</sup> which incorporates neuropathies, ischemia, infections and foot ulcers<sup>[2]</sup>. WHO describes it as diabetic foot syndromes which defines “ulceration of the foot (distally from the ankle and including the ankle) associated with neuropathy and different grades of ischemia and infection”<sup>[6]</sup>. Diabetes for more than 10 years, poor diabetic control, neuropathy, foot deformity, high plantar foot pressure and previous history of amputation are high risk factors for foot ulcers<sup>[2]</sup>. Early screening with patient education and basic foot care advise on appropriate footwear and wound care can.

prevent the onset and recurrence of foot ulcers<sup>[3]</sup>. Management of diabetic foot ulcer require multidisciplinary collaboration between health care sector which includes health professionals, primary health care and hospital services to reduce the incidence and recurrence of foot ulcers<sup>[2]</sup>.

### Case Presentation

Mr. Rajesh, a male patient aged 40 years with a 11 years history of type 1 diabetes mellitus and known case of CKD presented in the endocrine OPD with grossly infected foot on examination he had necrotic ischemic ulceration to 4<sup>th</sup> and 5<sup>th</sup> toes of right foot with further spreading necrosis down to the plantar pad of his foot along the plantar fascia. In addition the patient also had proliferative diabetic retinopathy and distal symmetric polyneuropathy. There was no previous history of diabetic foot.

### Previous history

Mr. Rajesh had infection 4 months back on 5<sup>th</sup> toe but no medical help was sought initially and Mr. Rajesh tried to treat himself when the condition of toe did not improve Patient presented himself in OPD where he was admitted in endocrine department for hyperglycaemic control with diabetic foot management.

After admission in the hospital I/V Antibiotics started with wound wash done everyday with NS and betadine and Antiseptic dressing is done under antiseptic conditions. Debridement of the necrotic tissue is done. After 5 days of admission he was planned for toileting and debridement of necrotic tissue with amputation of 5<sup>th</sup> toe. Patient was started on I/V antibiotics on the basis of culture input which reflected *E. coli* and *Acinetobacter baumannii*.

After 10 days of first surgery patient again was planned for debridement, toileting and amputation of 4<sup>th</sup> toe. After 2<sup>nd</sup> surgery patient showing improvement in wound and was planned for VAC (vacuum assisted closure).

Post VAC application the wound was healthy and shows reddish granulation tissue as per image 1.



**Image 1:** Reddish granulation tissue

On 8<sup>th</sup> April 2023 patient was operated with removal of VAC and 5 days post SSG, graft shows adequate uptake and no infection as per image 2.



**Image 2:** Adequate uptake and no infection

### Discussion

Diabetes mellitus is characterised by hyperglycaemia and disturbance of carbohydrate, fats, proteins metabolism that are related with absolute or relative deficiencies in insulin action/ or insulin secretion. Although diabetes is endocrine disease in origin, its major manifestations are those of the

metabolic disease [7] and diabetic foot is one of the most common complication of it. Number of risk factors have been identified that are responsible to increase the chance of ulceration like uncontrolled hyperglycaemia, peripheral neuropathy, peripheral vascular diseases, external trauma, callus etc [4].

Neuropathy in diabetic patients affect Sensory, motor and autonomic components of nervous system [4]. The nerve damage affects peripheral sensation, innervation of the small muscle of foot and fine vasomotor control of pedal circulation, loss of protective sensation makes the person unaware of incipient or actual ulceration<sup>2</sup> so, to prevent serious infection and amputation, examination of foot should be done in each follow up visit for active disease like ulcer and gangrene.

Bacterial infection, tissue ischemia, continuing trauma and poor management causes delay in healing of ulcer and transform readily into chronic wounds [2]. Infection is a consequence rather than cause of foot ulceration for substantial deterioration and delayed healing, Clinicians should consider early use of antibiotics for treatment of infected ulcers [2].

Impairment of leukocyte function and proliferation occurs in hyperglycaemia also leads to delayed healing of ulcers [2].

### Management of Foot Ulcers

The gold standard treatment for diabetic foot includes wound debridement, revascularization procedure when indicated and off loading of the ulcer<sup>6</sup> but to prevent the infection and further spread of ulcer the primary goal of the treatment is to obtain healing as soon as possible, faster the healing of wound lesser the chance for infection.

### Measures for treatment of foot ulcers [3]

1. Glycaemic control through diet and drugs.
2. Pharmacological therapy for pain control through painkillers a targeted antibiotic regimen on culture results.
3. Improving vascularization and debridement for better wound healing.
4. Offloading for pressure reduction and redistribution of weight bearing load over an increased area of the foot.
5. Wound dressing provides external protection and barrier to the external forces and contaminants and promotes absorption of exudate around the site

### Conclusion

Since our institute does not have plastic surgeon and patient insisted getting treated here, we managed the patient with the help of endocrine department and achieved good results.

It requires regular debridement of non healing ulcer, good glycaemic control and offloading the affected area so that the wound heals adequately.

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