

A Case Report: Offloading the diabetic foot wound in the developing world

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Abstract:

This is a case of a lady who presents with a highly infected lesion in the right mid-foot area. The lady, belonging to the upper middle social class, gives a history of long term uncontrolled diabetes and hypertension. About 10 weeks prior to presentation she developed cellulitis, followed by formation of an abscess on the plantar surface of the right foot following a puncture injury while walking barefoot in her home. She tried home remedies for two weeks or so and then consulted a general surgeon. The surgeon drained the abscess and prescribed oral antibiotics and other medicines for diabetes and hypertension. Unfortunately, to our diabetes centre for further management. We offered her good metabolic control along with repeated debridement of the ulcer and antibiotic as per repeated culture and sensitivity reports. In addition, we offered management plan, the lesion healed completely.

Key words: necrotizing fasciitis, gangrene, Diabetes Mellitus

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Introduction

Compared to patients without diabetes, those with diabetes are 15 to 46 times more likely to have an amputation.¹ The lifetime risk of having some form of lower extremity amputation in a person with diabetes has been estimated to be as high as 15%.¹ Of these amputations, preceded by foot ulcers.²⁻⁴ Repetitive trauma and pressure on the ulcer bed are two of the primary reasons for the persistence of ulcers once they have developed.⁵ If a person with diabetes has a lesion on the sole of a foot, he or she needs weight away from the site of ulcer. This is of vital importance: all therapeutic efforts are bound to fail if a person continues to walk on an ulcer. use of a wheelchair, crutch assisted walking,

total contact casts, felted-foam, half-shoes, therapeutic shoes, custom splints and removable cast walkers. However, due to economic constraints, unavailability or to ignorance as to principles of management of foot ulcer, such modalities are not commonly used in the developing world. considered the gold standard of the off-loading and treatment of neuropathic ulcers.⁶⁻⁸ Unfortunately, even TCC is surprisingly underutilized in clinical practice for various reasons ranging from cost, fear of complications and lack of expertise.^{8,9} A solution to the problem was to develop an off-loading device with simplicity, ease of application, affordability, effectiveness, and requiring no training. With these principles in mind, the Samadhan

year 2000 at L.K.Diabetes Centre, Lucknow, India.¹⁰ in Hindi language. The system incorporates

The Samadhan System is economical and the device is easy to manufacture. Approximately 100 Samadhan device a quadrangular piece of foam is taken. An adhesive is applied and the foam is rolled into a cylindrical shape. This is left to dry

Case Report

This 47 year-old female, known diabetic and hypertensive for 20 years with no previous history of foot ulceration, attended our outpatient department in the 1st week of September, 2010 with a foul smelling lesion on right sole (**Fig. 1**). Her history revealed a puncture injury to the plantar surface of the right foot 10 weeks previously. She tried home remedies for a fortnight or so following which the foot developed a foul smelling odor. She rushed to a general surgeon who drained the abscess and dressed the ulcer. This was followed by simple dressings for 6 weeks neglected. As a result, the lesion did not heal and she then came to our diabetes centre for further management.

At our centre we render specialized foot care services as well as diabetes education, medical nutrition therapy and basic podiatric surgical clinic where debridement and dressings are performed and in the afternoons and evenings a regular diabetes clinic is conducted where consultations are rendered to people with diabetes. India is a country with 50 million people

and this becomes the basic Samadhan device. Clinically the decisions are made regarding size of the device and its placement (where it renders using elastrocreppe bandage. The patient can wear common hook-and loop closure sandals. one needs to make the removable version and then cut the border of elastrocreppe bandage on the dorsum, followed by sealing this border using the device becomes irremovable until the seal is broken. After this, the patient can wear sandals with hook-and-loop closure.



Figure 1: A photograph of the plantar surface of a patient's right foot showing a large, deep, and foul-smelling ulcer on the heel area.

with diabetes¹¹. More than 35% of the 1.3 billion population in India lives below poverty line and only 10% of the Indian population has medical insurance¹¹. Under these circumstances, our centre contributes to cost savings by rendering multidisciplinary diabetic foot care services as well as general diabetes and medical management.

Her fasting blood glucose was 160mg% and post lunch was 210mg%. With a height of 170 cms and weight 75kgs, her BMI was 25.95 Kg/M². Her blood urea was 40 mg%, Serum Creatinine 1.1mg% and Serum Uric acid 5.2mg%. Her Lipid profile showed Triglycerides 200 mg%, HDL 42.0 mg% and LDL 150 mg%.

Her blood pressure was 40 and 42 volts in the left and right foot, respectively. She had a foul smell from the feet while hot and cold sensation, tested with Tip Therm, was also absent. X-ray of the right foot

was normal (**Fig.2**) while MRI revealed multifocal soft tissue collections seen in fore and mid foot region. Her foul smelling and discharging lesion was in the right mid foot measuring 7cm X 5cm.

She was started on Rosuvastatin 5mg once daily after dinner, Telmisartan 40mg once daily at night and Methylcobalamine 500mg three times daily. We also prescribed oral Metformin 500mg twice daily (administered by her nurse) and Insulin 30 units daily (administered by her nurse) 3 times daily. Debridement of the lesion was done and followed by daily dressings which included cleaning of the lesion with normal saline.

After one week she was investigated for metabolic control. Her blood glucose levels were under control with fasting as 100mg% and post-prandial as 150mg%. Her blood pressure was 120/80 mmHg. The foul smell from the lesion had stopped and lesion was healed completely (**Fig.4**).



Figure 2: X-ray of the right foot showing normal bone structure.



Figure 3: The Samadhan System (a mesh bandage) applied to the foot.



Figure 4: The foot after 12 weeks under our care, showing a healed lesion.

