

## NON-HEALING DIABETIC ULCER TREATED BY BIOBEAM 660

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A case of 75-year-old male patient with a non-healing ulcer over left sole is reported. Patient was a known diabetic with CCF. The ulcer was not healing for one month with routine treatment. The patient was given BIOBEAM 660 therapy every alternate days for a month which led to complete healing of the ulcer without complications.

**Key Words :** Biobeam 660, Non-healing ulcer, Diabetes

### Introduction

Biobeam 660 is a new electronic equipment for phototherapy of skin lesions developed in Israel.<sup>1</sup> This emits a special narrow band low level red light of 660 nm wavelength being specially designed to accelerate the healing process in various skin lesions.

The Biobeam 660 equipment box (Fig.1) contains the following

(i) Hand piece to give light therapy which contains

(a) LED (light emission diodes emitting red light of 660 nm wavelength)

(b) Indicator light,

(c) Power switch (CW-continuous wavelength and pulse-modes of light)

(ii) AC adapter and its wire and plug

(iii) Spacer ring to focus correctly at lesions

(iv) Goggle for eye protection while treating facial lesions.

From the studies done in Israel it is found to be helpful in treatment of following-

(i) Non healing wounds and ulcers in cases of diabetes, varicose veins, pressure sores, post operative wounds, amputation stumps.

(ii) Herpes simplex and

(iii) Inflammatory acne vulgaris



Fig. 1. Biobeam 660 equipment.

### Case Report

A 75-year-old male patient, who had long standing diabetes, CCF and peripheral neuropathy developed a non-healing ulcer over left sole. Patient had this ulcer over a period of one month. Patient was a chronic tobacco chewer but non-smoker, non-alcoholic. He had history of injury to left sole one month back which got infected because of negligence on his part. He approached us when the wound had increased in size and badly infected. On examination of wound, it was found to have a size of 4 cm x 7 cm over the arch of left sole (Fig. 2). There was purulent foul smelling discharge from the

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Fig. 2. Ulcer before treatment.  
wound.

Examination of the cardiovascular system showed features of mild controlled CCF. Both dorsalis pedis and posterior tibial arterial pulsations were feeble on both sides. Neurological examination showed features of peripheral neuropathy of both lower limbs.

His haemogram, blood sugar and urea, serum creatinine were all within normal limits. Urine examination showed mild proteinuria. Diabetes was well controlled with insulin and oral antidiabetics.

Initially, cefadroxil 500 mg BD was given for one week to clear wound sepsis. Biobeam treatment was given every alternate days for 15 minutes at a time, (CW and pulse modes of light for 6-8 min each). After Biobeam treatment, patient's wound was dressed with soframycin powder.

Ulcer healing at the end of 3 weeks of Biobeam therapy is shown in Fig.3 Ulcer healed completely in 5 weeks exactly from the start of Biobeam treatment. Excellent healing is shown in Fig.4 with new epithelium being thin, non-fibrotic and good skin texture



Fig. 3. Ulcer after 3 weeks of treatment.

## Discussion

Excellent and fast healing of ulcer was seen. New epithelium in the healed ulcer was very thin with good texture without fibrosis. Edges of the ulcer were also non-fibrotic. No antibiotic was given during the one month period of Biobeam therapy as there was no sepsis during this period, and the ulcer showed fast progression towards complete healing. Biobeam therapy was given for only 15 days in this 5 weeks period. Patient is



Fig. 4. Ulcer after 5 weeks of treatment.

followed up for next 5 months till today and the above results have persisted and there are no complications at all. Biobeam 660 therapy of the non-healing ulcer in diabetic patients such as the case discussed above definitely proves to be an excellent treatment for such cases, as it has a definite edge over routine treatments given so far. It not only speeds up wound healing but also lessens the use of oral antibiotic and reduces the fibrosis in such wounds during and after healing. We have treated 2 more cases with equally good results in past 5 months.

### Reference

1. Lusim M, Kimchy J, Pillar T, et al. Evaluation of the degree of effectiveness of Biobeam low level narrow band light on treatment of skin ulcers and delayed post-operative wound healing. *Orthopaedics* 1992;15.