

# Electron Beam Radiation Therapy in a Dermatology Office for the Treatment of Skin Cancer



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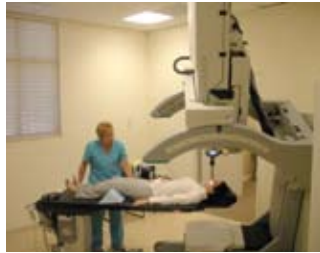
## Background

Electron beam radiation therapy has been used for many years in hospital or outpatient oncology settings to treat basal cell carcinomas (BCC) and squamous cell carcinomas (SCC) with excellent cure rates and cosmetic outcomes. Radiotherapy may be offered either alone after biopsy or post-operatively after complete excision for more aggressive pathologies (ie, poor differentiation and/or perineural invasion). Long-term experiences with large, conventional linear accelerators have been reported by Washington University and others. Washington University has reported BCC cure rates of 100%, 95%, 92% and 88%, respectively, for lesion sizes of < 1 cm, 1 – 3 cm, 3 – 5 cm, and > 5 cm. Corresponding SCC cure rates were 97%, 90%, 85% and 60%, respectively. Recent technical advances have allowed electron beam radiation therapy to be provided in an outpatient dermatology office setting, thereby making this treatment option more easily available for patients for whom surgery is either medically contraindicated or simply not desired. Riverchase Dermatology in Fort Myers, Florida has been treating skin cancer patients with a miniaturized, electron beam linear accelerator specifically designed for the radiation treatment of skin cancer and other superficial lesions – since February 2009 and here reports initial disease control and acute toxicity outcomes.

## Materials and Methods



A miniaturized, electron beam accelerator was used in the Ft. Myers Dermatology office to deliver the electron beam treatments



A patient being set up for treatment at Ft. Myers. Each patient treatment takes about 10 minutes per day total, including 1 minute of actual 'beam-on' time.

Thirty-five patients have been treated. The total prescribed radiation dose ranged from 50 to 60 Gy over 20 – 30 daily treatments. Each patient was consulted by a radiation oncologist who then prescribed and supervised the planning and delivery of the entire treatment course. Acute toxicity was assessed and scored during treatment by the radiation oncologist, and disease response was assessed 4 weeks post-treatment by the dermatologist.

## Results

All treated patients completed their prescribed treatment courses. Of the 35 treated patients, 30 experienced moist desquamation within the treatment field and were managed with the appropriate topical therapies. Thirty-four patients experienced complete resolution of evident disease by dermatologist's assessment at the first followup visit, and one patient demonstrated residual disease ultimately requiring surgical salvage.

## Discussion

A miniaturized electron beam linear accelerator, has produced favorable disease outcomes and acceptable acute toxicity at this early follow-up point.

Before Radiation



After Radiation



Female patient with BCC on nose



Male patient with multiple lesions on



Male patient with multiple lesions on hand