Brachytherapy for Bowen's disease of the palm

Ting-Yu Tsai*, Sheng-Yow Ho2,3
1Department of Radiation Oncology, Chi Mei Medical Center, Liouying, Taiwan
2Department of Radiation Oncology, Chi Mei Medical Center, Tainan, Taiwan.
3Graduate Institute of Medical Science, Chang Jung Christian University, Tainan, Taiwan.

Introduction

Bowen's disease, or squamous cell carcinoma (SCC) in situ, has been regarded as a cutaneous marker for internal malignancy. The most common option is surgical removal. Surgery is usually indicated for smaller lesions. However, Bowen's disease occurs more often in elderly patients (with a higher risk of comorbidities) and is frequently located on body sites with poor wound healing. Therefore, there is a need for non-invasive but effective treatment options.

Case report

A 70-year-old patient with an ulcer and lump on her hand visited Liou Ying Chi Mei Hospital in September 2020 (Fig. 1 (A)). The patient was unable to open her hand due to dermal inflammatory infiltrates. A biopsy confirmed nodular SCC. She was evaluated jointly by a radiation oncologist and a surgical oncologist. Considering the large lesion size, cosmetic and reconstructive issues, and the patient's unwillingness, surgery was deferred. After discussion with the patient, treatment via radiotherapy was decided and informed consent was signed.

Figure 1: A 70-year-old patient with squamous cell carcinomas (SCC). (A) The patient visited the emergency room with hand pain for the first time. (B) First day of treatment. (C) Day 11 of brachytherapy. (D) Two weeks post-treatment. (E) One month post-treatment. (F) Day 45 post-treatment.
Images were acquired from the patient on a 16-slice CT scanner (Discovery CT590 RT, GE Medical Systems, Amersham, UK) with a thickness of 3.75 mm. Brachytherapy treatment planning was done using the Oncentra treatment planning system OTP V4.6.0.16 (Nucletron, an Elekta company, Elekta AB, Stockholm, Sweden). We prescribed 40 Gy in 8 fractions at a depth of 5 mm from the skin surface, using 4 catheters. The target size was 3 cm x 2.5 cm. Treatment was delivered using an Ir-192 source. For this patient, the maximum skin surface dose was 571.48 cGy/fraction. Treatment time was 15 minutes per fraction including treatment set-up time.

The patient tolerated the treatment well without any interruption. Figure 1 (B) shows the clinical picture on the first day of brachytherapy. During radiotherapy, increased discharge was noted at the site of ulceration (requiring regular dressing changes). The area appeared also erythematous and scabbing, with patchy moist desquamation (Figure 1 (C)). These effects were classified as Grade 2 toxicities. At two weeks after treatment (Figure 1 (D)), healthy granulation tissue with partial resolution of the lesion was observed along the adjacent area. Figure 1 (E) shows the site one month after brachytherapy. At 45 days post-brachytherapy, the lesion completely resolved (Figure 1 (F)). The treated skin was mildly pink with no ulceration, discharge, or skin atrophy. The patient was happy with the cosmesis and outcome.

**Discussion**

While surgery remains the standard of care for many patients with SCC, brachytherapy provides an option for cases where surgery is not a viable or patient-preferred therapy. High dose brachytherapy is a powerful way of treating skin cancers in elderly patients.

**References**
