Case study: Split course treatment

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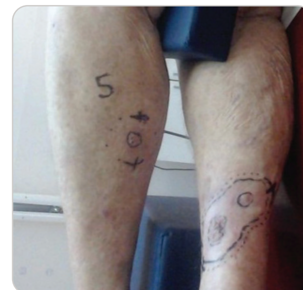
Summary of diagnosis

94 y/o female, presenting with three well-differentiated, large (2–3 cm) biopsy-proven of the bilateral calves. one on left calf, two on right calf (same field), growing rapidly over past 3 months.

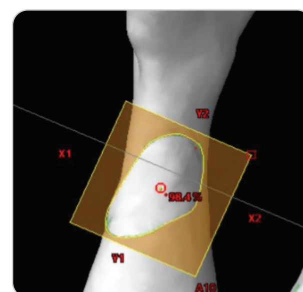


History

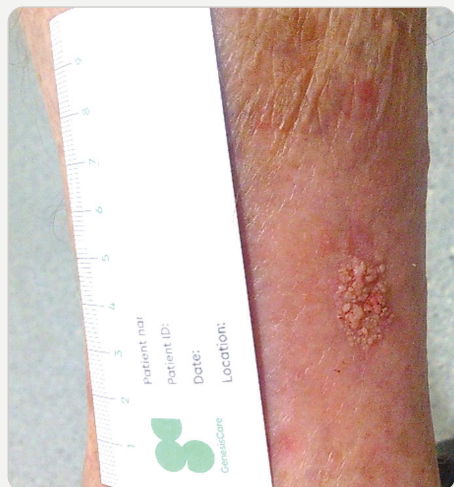
The patient has fair skin (Fitzpatrick Type II) and an extensive history of sun exposure in North Queensland. Patient received numerous prior episodes of care for individual NMSC lesions including excision. Despite general good health and mobility (ECOG-2), there were concerns for the patient's age and peripheral vascular disease comorbidities.

Treatment

Patient was considered for a split course of radiation using electrons, due to the flat treatment surfaces, no high-risk lesion features, multiple lesions, comorbidities, and the desire to incorporate an extended treatment break to ensure sufficient recovery times between rounds of treatment.

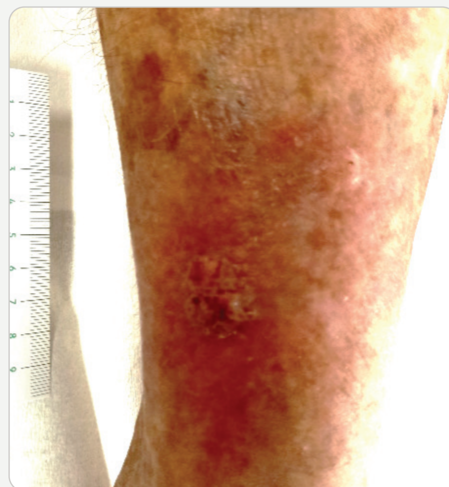


Sim of field on right calf



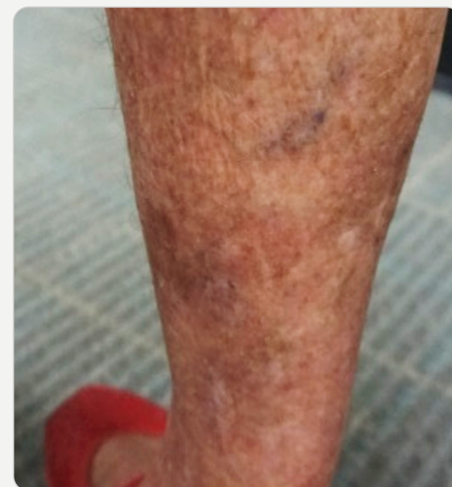
End of first round (25 Gy in 10#)

G1 Erythema, patchy, dry desquamation, and G1 pruritis



Start of second round (#1 of 10 for a further 20 Gy)

After 8-week break, G2 erythema and patch pruritic.



6-month follow-up

Wound cared for with moisturiser and basic skin education. No residual toxicity, Complete response and excellent cosmesis outcome.

Discussion

The burden of skin cancer in the elderly continues to increase[1] and this is particularly pronounced in rural areas that may have reduced access to treatment.[2] Furthermore, many skin cancer patients require multiple episodes of care due to an increased risk of new tumours after an original diagnosis.[3] This creates large treatment burdens for patients, many of whom have comorbidities. Radiation therapy (RT) offers an effective nonsurgical skin cancer treatment,[4–6] however, often requires multiple sessions – sometimes 30 over the course 7 weeks, which is impractical for many patients. In addition, all treatment, including radiation therapy, can be taxing on patients and be associated with poor healing, such as on the legs. In the case of radiation therapy, radiation oncologists can modify treatment to minimize toxicity, whilst maximizing treatment compliance, therefore ensuring optimal efficacy, safety and cosmetic outcomes for the patient.[7,8]

Skin cancer treatment guide[9,10]

Patient eligibility/indications[6,7]

- Keratinocyte cancer:
  - Squamous Cell Carcinoma (SCC)
  - Basal Cell Carcinoma (BCC)
  - Squamous Cell Carcinoma in situ
- Recurrent or high-risk lesions
- Cosmetic concerns
- Widespread lesions

Patient exclusions/considerations[6,7]

- Prior radiation therapy to site
- Invasion into bone/joints
- Sites with poor vascularity
- Collagen vascular disease
- Sites where radiation therapy would result in unacceptable hair loss
- Naevoid BCC
- Active connective tissue disorders
- Radiation Sensitivity
- Inability to lie still for 15 minutes / young age

When to refer to a radiation oncologist

- Extensive Skin Field Cancerisation (ESFC)
- Recurrent lesions
- Patients who decline or are unsuitable for surgery
- Adjuvant to surgery for high-risk lesions
- Concerns about cosmetic outcomes following surgery
- Failure of other therapies

To refer a patient or for more information about our centres and doctors please scan the QR code or go to: genesiscare.com

References: **1.** AIHW, Cancer Australia (2008) Non-melanoma skin cancer: general practice consultations, hospitalisation and mortality, AIHW, Australian Government, accessed 16 August 2024. **2.** AIHW, Cancer Australia (2008) Rural, regional and remote health: indicators of the health status and determinants of health. AIHW, Australian Government, accessed 16 August 2024. **3.** Wehner MR et al. JAMA Dermatol. 2015 Apr;151(4):382–8. **4.** Likhacheva A et al. Definitive and Postoperative Radiation Therapy for Basal and Squamous Cell Cancers of the Skin: Executive Summary of an American Society for Radiation Oncology Clinical Practice Guideline. Pract Radiat Oncol 2020;10(1):8–20 **5.** Grossi Marconi D, da Costa Resende B, Rauber E, de Cassia Soares P, Fernandes JM Junior, Mehta N, Lopes Carvalho A, Kupelian PA, Chen A. Head and Neck Non-Melanoma Skin Cancer Treated By Superficial X-Ray Therapy: An Analysis of 1021 Cases. PLoS One. 2016 Jul 1;11(7):e0156544. **6.** Schulte KW, Lippold A, Auras C, Bramkamp G, Breitkopf C, Elsmann HJ, Habenicht EM, Jasnoch V, Müller-Pannes H, Rupprecht R, Suter L. Soft x-ray therapy for cutaneous basal cell and squamous cell carcinomas. J Am Acad Dermatol. 2005 Dec;53(6):993–1001. **7.** Fogarty GB, McLaren KR, Moutrie Z, Poon TSC, Izard MA. Locally advanced skin cancers of the frail and elderly: consider adaptive split-course radiotherapy. Br J Dermatol. 2018;179(6):1416–1417. **8.** Wong B, Webb S, Powell M, et al. Keratinocyte cancer of the lower limb in the frail elderly – acceptable results for 96 lesions treated with a shortened radiotherapy protocol. Int J Radiol Radiat Ther. 2024;11(3):60–65. **9.** Cancer Council Australia Keratinocyte Cancers Guideline Working Party. Clinical practice guidelines for keratinocyte cancer. Sydney: Cancer Council Australia. [Version URL: https://wiki.cancer.org.au/australiawiki/index.php?oldid=213931, cited 2023 Aug 10]. Available from: https://wiki.cancer.org.au/australia/Guidelines:Keratinocyte_carcinoma. **10.** Gorayski P, Roos D. AJGP 2020;49(8):496–499.

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