

A Case Report of Successful Treatment of Squamous Cell Carcinoma with Excellent Esthetic Results

Ayoub El Massnaoui^{1*}, Sami Amraoui¹, Nabila Sellal¹, Mohamed El Hfid¹

¹The Oncology Hospital Sheikh Zayed Al Nhayane, University Hospital Center (CHU) Mohammed VI of Tangier, Morocco

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*Corresponding Author: Ayoub El Massnaoui

The Oncology Hospital Sheikh Zayed Al Nhayane, University Hospital Center (CHU) Mohammed VI of Tangier, Morocco

Abstract

This case report describes the successful treatment of a squamous cell carcinoma (SCC) of the lip with brachytherapy in a 36-year-old man. The patient presented with a 03 cm ulcerated lesion on the lower lip classified as T2N0, which biopsy confirmed to be SCC. Due to the location of the lesion and the patient's preference for minimally invasive treatment, brachytherapy was chosen. The patient received 40.05Gray, 4.5 Gray per session in 09 sessions. Follow-up examinations showed complete resolution of the lesion with minimal adverse effects. This case highlights the efficacy, tolerability and good esthetic result of brachytherapy in the treatment of SCC of the lip.

Keywords: Brachytherapy, High-Dose-Rate, Squamous Cell Carcinoma, Lip, Esthetic results.

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INTRODUCTION

Squamous cell carcinoma (SCC) is the most common malignant tumor of the lip (Anon n.d.; Dhanuthai *et al.*, 2018; Ram *et al.*, 2011), with the lower lip is more often affected than the upper lip (A *et al.*, 2006). The treatment options for SCC of the lip include surgery, radiation therapy, and chemotherapy (Lee and Wilson 1970).

Brachytherapy, a form of radiation therapy in which radioactive sources are placed in or near the tumor, it has proven to be an effective treatment modality for lip cancer, offering good local control while preserving cosmetic and functional outcomes (Takácsi Nagy and Kásler 2008; Tuček, Vošmik, and Petera 2022).

Brachytherapy modalities include low dose rate (LDR) brachytherapy, pulsed dose rate (PDR) brachytherapy, and high dose rate (HDR) brachytherapy (Kovács *et al.*, 2017; Mazon *et al.*, 2009; Takácsi Nagy and Kásler 2008). Recommendations for head and neck cancer suggest that HDR is appropriate for treating lip cancer (Kovács *et al.*, 2017), and Studies have demonstrated that both LDR and HDR are equally effective in local control, but HDR tends to result in fewer complications (Ghadjar *et al.*, 2012; Guinot *et al.*, 2003, 2022).

CASE PRESENTATION

A 36-year-old man, chronic smoker of 10 pack-years, with no other history of malignancy or significant comorbidity, presented with a 03 cm ulcerated lesion on the lower lip, which had been progressively increasing in size for one year, without pain or other associated signs. Biopsy of the lesion confirmed the diagnosis of well-differentiated CSC classified as T2N0.

Treatment

Given the location of the lesion, the patient's refusal to undergo surgery and her preference for minimally invasive treatment, brachytherapy was proposed as the main treatment modality. The patient underwent implantation of three needles in a triangular pattern using the Paris system, and received 09 sessions of high-dose-rate (HDR) brachytherapy with a dose of 4.5 Gray per session, giving a total dose of 45 Gray delivered over 5 days.

The procedure was well tolerated and the patient had no significant acute side effects, with only grade 2 mucositis treated symptomatically.

Outcome

Follow-up assessments 03 months after treatment showed complete resolution of the lesion. Follow-up was maintained for one year with no

progression or signs of recurrence. The figure shows the evolution of the lesion after treatment from the initial stage and at 15-day intervals until the last follow-up (Fig. 1). The patient reported satisfactory esthetic and

functional results, with preservation of lip contour and oral function. No late radiation-related complications were observed during the follow-up period.



Fig. 1: Evolution stages of lower lip SCC tumor for 8 months before and after brachytherapy application. A) Squamous carcinoma T2N0 (3 × 3 × 2 cm); B) Implantation of 3 needles, three of them outside the tissue; C) Tumor at 8 days after removing the needles; D) Tumor at 15 days; E) Tumor after 01-month post BT; F) Tumor at 02 months follow up; G&H) Excellent cosmetic and functional results 01 year after BT treatment.

DISCUSSION

This case illustrates the successful treatment of lip SCC with brachytherapy, achieving excellent local control with minimal morbidity. Brachytherapy offers several advantages in the treatment of lip cancer, including precise dose delivery, sparing of surrounding

healthy tissue, and preservation of cosmetic and functional outcomes (Mazeron *et al.*, 2009; Tuček *et al.*, 2022). Further studies are warranted to evaluate the long-term efficacy and safety of brachytherapy in the treatment of lip cancer and to compare its outcomes with other treatment modalities.

CONCLUSION

Brachytherapy is a viable treatment option for SCC of the lip, providing excellent local control while preserving esthetic and functional outcomes. This case highlights the importance of considering brachytherapy as a primary treatment modality for lip cancer, especially in patients who prefer minimally invasive approaches or are not suitable candidates for surgery.

Consent: Informed consent was obtained from the participants included in the study.

Conflict of Interest: The authors declare no conflicts of interest.

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