Case Report

Cosmesis and cure: Radiotherapy in basal cell carcinoma of the dorsum of nose – A case report

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Abstract

Local therapy is the mainstay in basal cell carcinoma and the decision between primary surgery vs definitive radiotherapy is based on factors such as cosmesis and patients' choice. As basal cell carcinoma most commonly affects exposed regions of skin, cosmesis becomes an important factor. Cosmesis is defined as the preservation, restoration, or bestowing of physical beauty, especially to the human body. We report a case of basal cell carcinoma involving the dorsum of nose treated by electron beam radiotherapy. Our patient presented with a lesion over the dorsum of nose. Electron beam radiotherapy to a total dose of 50 Gy was delivered using a hypofractionated regimen. Our patient demonstrated clinical complete response with an acceptable cosmesis at 2 months post treatment. We concluded that hypofractionated radiotherapy is a cosmetically acceptable primary local therapeutic option in the treatment of basal cell carcinoma.

Background

Basal cell carcinoma is the second most common histopathological subtype of skin cancer which has a metastatic potential of less than 0.1%. Most basal cell carcinomas develop in skin sites exposed to the sunlight and can be locally destructive and disfiguring. The treatment options are surgery or radiotherapy. The decision between a surgical approach and radiotherapy is based on factors such as cosmetic outcomes, patient preferences and functional outcomes. A retrospective study on primary radiotherapy for basal cell carcinoma reported a local control rate of 94-96% [1]. A study evaluating the cosmetic outcomes of patients who received definitive radiotherapy for basal cell carcinoma of the nose reported good or excellent cosmesis [2]. We report a case of basal cell carcinoma involving the dorsum of nose treated by electron beam radiotherapy.

Case Presentation

A 63-year-old female presented with a non-healing pigmented ulcer over the dorsum of nose of 1 year duration. Clinical examination revealed a 2 cm x 2 cm ulcer over nasal bridge with raised beaded edges and with hyperpigmented necrotic tissue in the floor of the ulcer (**Fig. 1**). Other systemic examination was unremarkable. Biopsy from the edge of the ulcer was consistent with basal cell carcinoma.

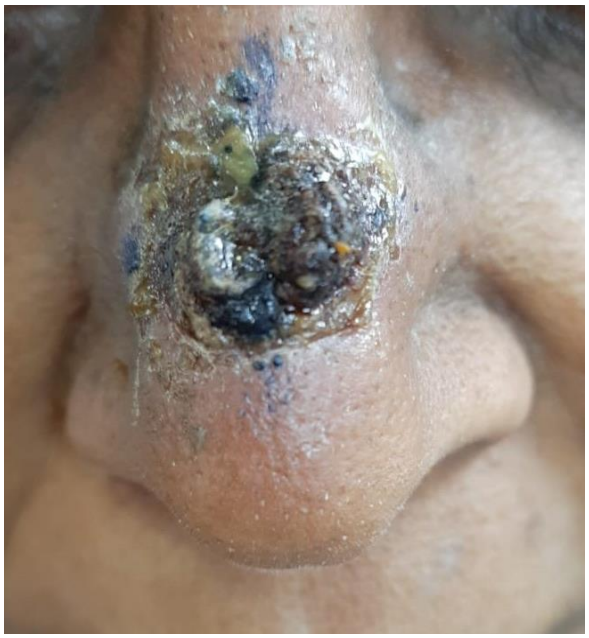

Fig. 1. Pretreatment clinical photograph.

She was treated with a single direct 6 MeV electron beam. A customised lead cut-out was used for beam shaping. To overcome the problem of angle of incidence due to a sloping nasal bridge, the single direct field was applied by rotating the couch to 90 degrees position and the gantry to 335 degrees. A dose of 50 Gy in 20 fractions was delivered to the 85% isodose curve using a 5mm bolus to allow for dose build up at the skin surface. The treatment was completed over 4 weeks. She tolerated the treatment well with grade 1 dermatitis involving skin over the nasal bridge.

On 2 month follow up the skin over nasal bridge was intact with hypopigmented and hyperpigmented areas (**Fig. 2**). The skin overlying the dorsum of nose felt smooth and supple on palpation.

Fig. 2. 2 months post radiotherapy.

Discussion

As basal cell carcinoma has a very low malignant potential, the mainstay of treatment becomes local therapy in the form of surgical excision or radiotherapy. The exposed regions of skin are the commonest sites of basal cell carcinoma, and for the

same reason cosmesis becomes an important factor while deciding on the treatment modality.

Surgery vs Radiotherapy as a primary treatment modality in basal cell carcinoma involving the face was evaluated in a randomised trial [3]. The cosmetic outcomes after 4 years of follow up of the patients enrolled in the trial were also reported [4]. The cosmetic outcomes were significantly better following surgery than with radiotherapy. The improved cosmetic outcome was observed regardless of the site of the tumour on the face, except for the nose, where the difference in favour of surgery was not significant.

Our patient was diagnosed as basal cell carcinoma involving skin over the dorsum of nose. As per the patients' preference, local radiotherapy was planned as the primary therapeutic modality.

Protracted radiotherapy treatment schedules can be inconvenient for the patient, besides increasing the burden on the radiotherapy facility. Shortened courses in the form of hypofractionated regimens have been used in the treatment of skin cancers.

A meta-analysis reported on the cosmetic outcomes of various hypofractionated radiation therapy regimens for skin cancers [5]. Hypofractionated regimens were reported to produce similar cosmesis to conventionally fractionated radiotherapy. Radiotherapy was delivered using photons or electrons. "Moderately" hypofractionated regimens in the 2.5–3 Gy per fraction range, can be considered in young patients in whom long term cosmesis becomes important.

Our patient was treated by an electron beam. A hypofractionated regimen delivering 2.5 Gy per fraction to a total dose of 50 Gy was used.

Our patient demonstrated clinical complete response of tumour with an acceptable cosmesis at 2 months post treatment. Further follow up of the patient will unveil the long term cosmesis.

Conclusion

Radiotherapy with local control rates nearing 96%, is a feasible local therapeutic option in basal cell carcinoma resulting in acceptable cosmetic outcomes. Moderately hypofractionated regimens can be safely used.

References

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