

Case Report

Post radiotherapy, blue naevus conversion to basal cell carcinoma

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Received: 13 November 2020

Accepted: 15 December 2020

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ABSTRACT

Post-radiation conversion of benign cutaneous lesions to malignant is likely in the facial region. Thereby counselling and necessity of regular follow up is essential in patients undergoing radiotherapy in head and neck malignancies. Benign lesions undergo malignant change more so in the fascio cutaneous planes. A benign nasomaxillary blue naevus that transformed to malignant basal cell carcinoma following radiotherapy for pituitary adenoma is being reported.

Keywords: Radiation induced secondary malignancy, Blue naevus, Pituitary adenoma, Basal cell carcinoma, Radiotherapy

INTRODUCTION

Critical component of oncologic care is radiotherapy to enhance cancer survival but the late effects of radiotherapy can impact long-term patient wellbeing. A significant and life-threatening late sequelae is development of radiation induced malignancy termed as second malignant neoplasm (RISM). Genetic alterations and genomic injury are the accepted mechanism for radiation effects on normal tissues.¹ Radiation therapy is one of the risk factors for basal cell carcinoma but the origin in a blue naevus after radiation is rare.²

US National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) programme had observed that the proportion of second malignancies was doubled in the last three decades (9% in 1975–1979 to 19% in 2005–2009).³

Females have shown a greater propensity to develop RISM as compared to males as reported in literature.⁴ For a given dose, children are around 10 times more vulnerable to neoplastic conversion as compared to adults.⁵ A benign nasomaxillary blue naevus that underwent a malignant

change following radiotherapy for pituitary adenoma is being reported.

CASE REPORT

63 years old man presented with pansinusitis for which he had undergone functional endoscopic sinus surgery 3 years back. A year later he had compressive ocular symptoms of a space occupying lesion of pituitary for which he underwent endoscopic trans nasal sphenoidotomy and hypophysectomy followed by a course of frontal and lateral field 66 Gy of radiation over one and half month period. He was on regular follow up for the last 2 years. Recently he noticed his blue naevus increasing in size progressively for which he was taken up for excision biopsy with flap reconstruction.

An elliptical incision was made all around the blue naevus 2×1 cm in size and brownish in colour (Figure 1). The lesion was excised.

The incision was deepened till bone and the lesion excised with underlying periosteum and muscle (Figure 2). The lesion was excised in toto (Figure 3).

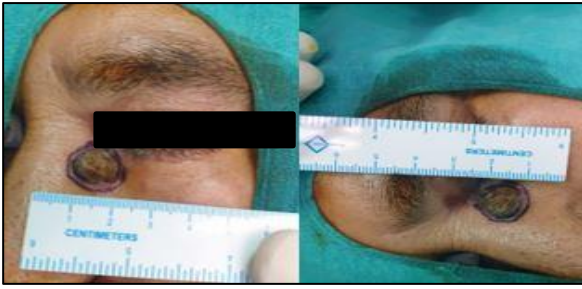


Figure 1: 2 X 1 cm lesion, blue naevus just below the medial canthus.

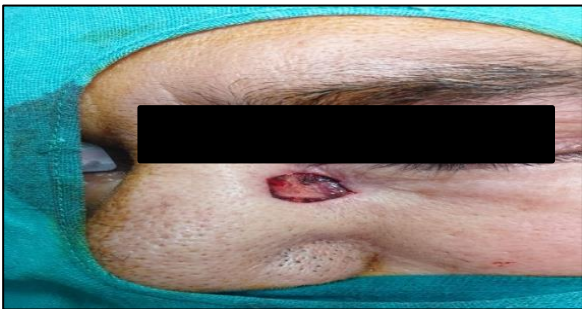


Figure 2: Incision deepened till periosteum and muscle.

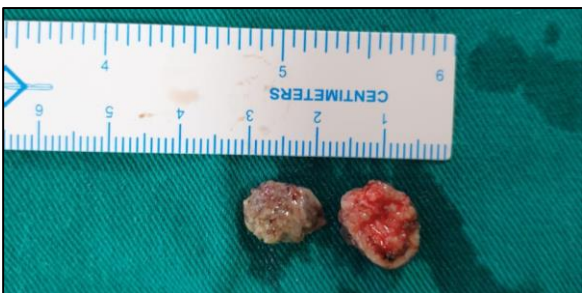


Figure 3: Lesion removed in toto.



Figure 4: Illustration of IMRE flap.

An IMRE cheek advancement flap was harvested using a transverse infraorbital extension upto the lateral canthus laterally and inferiorly following the nasomaxillary line till the lower end of the ala. (Figure 4).

Wound was primary sutured and region was covered with primapore dressing.

Histopathological report was reported as basal cell carcinoma (Figure 6).

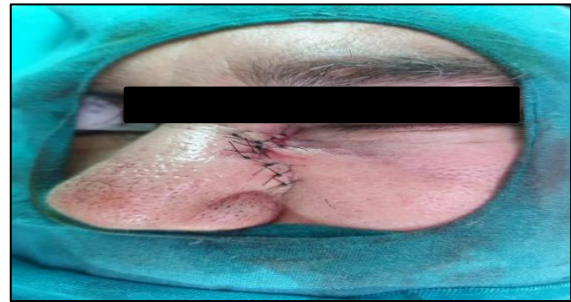


Figure 5: Primary closure of wound.

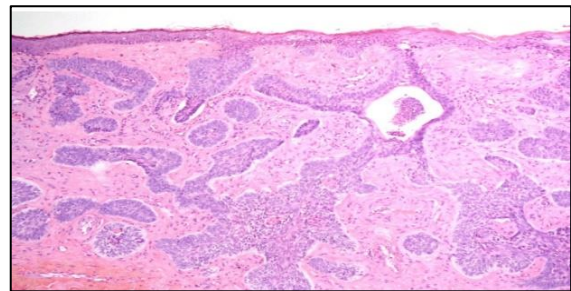


Figure 6: Histological slide picture of basal cell carcinoma.



Figure 7: Post-operative picture showing healed lesion.

DISCUSSION

The incidence of radiation induced malignancy cannot be underestimated. The incidence of radiation-related neoplasms has been estimated at 15% within 5 years of radiotherapy. The head, neck, esophagus and lung being the predominant sites.⁶

Long-term follow up of atomic bomb survivors at Hiroshima and Nagasaki had shown that neoplastic development was more in this population as compared to non-irradiated individuals Ron et al., 1994; Thompson et al, 1994; Sadamori et al, 1996.⁷⁻⁹

Nasopharyngeal angiofibroma in the paediatric age group if irradiated can predispose the children to thyroid malignancy. Nevus sebaceous (NS) is a common

congenital hamartoma of the skin and the predominant site being the head and neck. It may undergo malignant transformation to basal cell carcinoma (BCC). The earlier reported incidence of basal cell carcinoma arising in naevus ranged from 6% to 22% but more recently it has been reported as low as 0.8%.^{10,11} Risk factors for basal cell carcinoma include exposure to ultraviolet light, lighter skin, radiation therapy, long-term exposure to arsenic 0.66 Gy is the limiting dose portals of radiation. Since there is risk to optic nerve, lens, spinal cord, cerebellum, cerebrum and temporal lobe, standard radiation therapy (RT) dose for gross disease (primary and lymph node) is about 66 to 70 Gy.¹²

Ascending the reconstructive ladder for medial canthus lesions include healing by secondary intention, full-thickness skin grafts, and local or regional flaps. Various medial canthus reconstruction flaps include free flap and pedicled forehead flap, tripiar flap, rhomboid flap, Mac Gregor flap.¹³ An ideal flap in the facial region should have a colour match to its vicinity. The approximation scar merged in the natural skin creases and be able to withstand the gravitational pull of the facial jowl's; latter being constituted by muscles and cheek fat.

Forehead flap leads to disfigurement and scars the psyche. So, we employed IMRE flap as the horizontal scar and vertical oblique was lost in the skin crease of the lower eyelid and naso maxillary groove. Undermining was the key to advancement and a tensionless approximation of the incisional site and thus facilitated healing. Intensity modulated radiation therapy (IMRT) and three-dimensional conformal radiation are the techniques to prevent exposure to the normal cells and benign lesions of head and neck to prevent their malignant transformation.¹⁴

CONCLUSION

We emphasize the role of lead shielding on any benign lesion of facial region to prevent the malignant transformation.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Munjal M, Sood S, Rishi P, Sidhu H, Munjal S, Talwar S et al. Post radiotherapy, blue naevus conversion to basal cell carcinoma. *Int J Otorhinolaryngol Head Neck Surg* 2021;7:174-6.