Recurrent Squamous Cell Carcinoma of Scalp: A Therapeutic Challenge and Literature Review

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The skin is the largest organ of the body and is mainly responsible for the cosmetic appearance of the body. Squamous cell carcinomas (SCCs) are a group of cancers arising from a squamous layer of epithelium. The squamous cells are the main part of the epidermis of the skin, and this cancer is one of the major forms of skin cancer. Squamous cells also occur in the lining of the digestive tract, lungs, and other areas of the body. SCC is commonly seen on the ear, lower lip, face, and rarely on the scalp. Here, we report a case of 63-year-old female with recurrent SCC of the scalp, the available treatment modalities and a review of the literature.

Keywords: Cryotherapy, Radiotherapy, Recurrent, Scalp, Skin cancer, Squamous cell carcinoma

INTRODUCTION

Skin cancers are a diverse group of cancers which come under the purview of dermatologists, surgeons, and cosmetic surgeons. Treating skin cancers require excellent skills from the treating surgeon and post-surgery, cosmetic appearance of the patient should not be disturbed as much as possible. With a wide variety of treatment modalities now available, we are now treating skin cancers better cosmetically than we used to do earlier. Here, we report a case of squamous cell carcinoma (SCC) of the scalp, which is a recurrent and a review of the literature.

SCC is a group of malignant tumors arising from the keratinizing cells of the epidermis or its appendages. It is locally invasive and has the potential to metastasize to other organs of the body. It is the second most common form of skin malignancy after basal cell carcinoma and is strongly related to sun exposure (ultraviolet radiations). Commonly seen in the white skinned individuals and males living near the equator. SCCs are associated with chronic inflammation such as osteomyelitis burns pre-existing scars and immunosuppression, more in the organ transplant recipients.1 When an SCC appears in a scar, it is known as Marjolins ulcers. Metastasis occurs in 2% of the cases.2

CASE REPORT

A 63-year-old female, a known case of SCC over the scalp, came with ulcer over the operated area since 15 days. The patient underwent wide local excision followed by occipital muscle transposition flap 1 year ago, after thorough pre-operative evaluation. Post-operative period was uneventful, and skin sutures were removed on post-operative day 10. The patient was advised chemotherapy but did not turn up for the same. The patient came to the emergency room 1 year later with a bleeding ulcer over the scalp infested with maggots. On examination a depressed ulcer measuring 10 cm × 8 cm with rolled out edges and floor covered with necrotic and sloughed out tissue present over the scalp exposing the bone (Figure 1). Bloody discharge present from the ulcer. On palpation, the surrounding tissue was indurated and non-tender with no local rise of temperature. Ulcer fixed to the underlying tissue and non-mobile. X-ray skull showed no evidence of bony involvement. Hemogram showed macrocytic anemia with leucocytosis. The patient was started on chemotherapy with cisplatin and 5-fluourouracil, following which the ulcer shranked and split skin grafting was performed. The patient is in regular follow-up.

DISCUSSION

Exposure to ultraviolet radiation is the most common cause of this type of cancer. Ultraviolet B radiation (wavelength, 290-320 nm) from sunlight is principally responsible, with ultraviolet A radiation (320-400 nm) adding to the risk. Ultraviolet radiation produces mutations in DNA, usually the formation of thymidine dimers in the p53 tumor-
suppressor gene. Failure to repair these mutations may result in tumor formation. Skin cancers of the scalp have the propensity to spread, due to the subgaleal plane that provides limited resistance. At the periosteal level, tumor spread can go for unperceived distances. Furthermore, its vigorous blood supply and dense lymphatics create further potential for spread of disease, making the scalp a high risk site.

Invasive SCC has the potential to recur and metastasize. The 5-year rate of recurrence of primary cutaneous lesions is 8%, and the 5-year rate of metastasis is 5%. Chief among the factors affecting risk is the size and location of the tumor. Large lesions (>2 cm in diameter) recur at a rate of 15%, which is twice that of smaller lesions, and they metastasize at a rate of 30%, 3 times that of smaller lesions. The 5-year rate of cure in patients with large tumors is 70%, regardless of the treatment chosen. SCCs of the lip and ear are also aggressive lesions with rates of recurrence and metastasis ranging from 10% to 25%. Other sites associated with a high risk of recurrence and metastasis are the scalp, forehead, temple, eyelid, nose, mucous membranes, dorsal surface of the hands, and penis. SCCs arising in injured or chronically diseased skin are associated with a risk of metastasis that approaches 40%. An incisional biopsy for confirmation of the diagnosis should usually be obtained before treatment.

The surgical and non-surgical procedures for treatment include:

Curettage and Cautery/Electrodesiccation
Performed using a curette to remove soft material from the tumor. The base of the tumor is then destroyed, using either hyfrecation or cautery. This may be used to treat small (<1 cm) and precancerous lesions. It is safe and well-tolerated, and usually produces a good cosmetic outcome and suitable for patients with multiple lesions.

Cryotherapy/Cryosurgery
Is a cost effective treatment and is well-established for small in situ SCCs and precancerous lesions?

Topical Treatment
Imiquimod, 5% cream, is effective in treating actinic keratosis. Fluorouracil is licensed for superficial malignant and precancerous skin lesions. Diclofenac, 3% gel, is licensed for the treatment of actinic keratoses.

Photodynamic Therapy
Involves the use of light therapy in combination with a topical photosensitizing agent to destroy cancer cells is used in the treatment of in situ SCCs and actinic keratosis. Evidence of efficacy for treating invasive SCCs is limited, recurrence rates are high, there is a risk of metastasis and retreatment may be necessary.

Mohs’ Micrographic Surgery
A procedure in which the excision of the skin lesion is carried out in stages and each stage checked histologically. It is advocated for use in cases where it is critical to obtain a clear margin while preserving the maximum amount of normal surrounding tissue. This procedure is more often used in the treatment of basal cell carcinoma.

Radiotherapy
Is a useful treatment for patients who cannot be or prefer not to be treated by surgery and the cure rates are over 90% for most of the skin lesions? Radiotherapy can also be used in cases when the margins of excision appear to be incomplete on histopathological examination. Radiotherapy is curative for some cases of the advanced inoperable disease. Radiotherapy also has a role in the palliative treatment of patients with large, inoperable, and recurrent SCC, or if there are inoperable metastases in lymph nodes or elsewhere.

CONCLUSION
A recurrent SCC of the scalp is a therapeutic challenge to the surgeon. We reviewed the literature for the same and presented here to the medical fraternity. The treatment needs to be individualized as per the location, facilities available, cosmetic, and patient considerations.

REFERENCES


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