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Metastatic squamous cell carcinoma arising in the setting of folliculitis decalvans

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Abstract

Squamous cell carcinomas (SCCs) often arise secondary to UV-induced DNA damage resulting in genetic mutations, but can also occur in the setting of prolonged inflammation. Folliculitis decalvans (FD) is a rare cicatricial alopecia with a complex, multifactorial pathogenesis that results in chronic inflammation and scarring. We present a patient with severe, chronic FD who developed metastatic squamous cell carcinoma of the scalp.

Keywords: squamous cell carcinoma, folliculitis decalvans, malignant skin carcinoma, cicatricial alopecia

Introduction

Cutaneous squamous cell carcinomas (SCCs) often arise secondary to UV-induced DNA damage resulting in genetic mutations, most notably in the *N-RAS* and *p53-related genes*. Chronic ulcers, thermal burn scars, ionizing radiation, and HIV infection are among the other known risk factors [1]. We present a case of T3N2M0 cutaneous squamous cell carcinoma of the scalp arising in the setting of chronic severe folliculitis decalvans (FD).

Case Synopsis

A 45-year old man, former smoker, with a long-standing history of folliculitis decalvans presented to our clinic for follow-up while on isotretinoin. He had failed multiple treatments for his FD including topical steroids, intralesional steroid injections, oral doxycycline, oral minocycline, and a combination regimen of oral rifampin and clindamycin. He had completed two months of isotretinoin (cumulative dose 3600mg or 31.7mg/kg) and was tolerating the medication well, except for mild cheilitis. Review of systems was negative for fevers, chills, malaise, night sweats, or weight loss.

Examination of the scalp revealed extensive scarring alopecia with pink plaques and scattered tufts of hairs. On the right upper occipital scalp, there was a 2.5cm pink and boggy exophytic nodule with serosanguinous drainage. Bacterial culture was positive for methicillin-sensitive *Staphlococcus aureus* (MSSA) and the patient was prescribed a seven-day course of cefadroxil 500mg twice daily. Upon follow-up visit in one month, the nodule was noted to be worsening, with enlargement in size to 6cm (**Figure 1**), despite the antibiotic course and ongoing isotretinoin therapy. A 4mm punch biopsy was performed and it revealed a moderately-differentiated squamous cell carcinoma extending to all margins of the specimen.

The patient was subsequently referred to the otolaryngology department and found to have palpable right posterior cervical nodes on clinical examination, as well as radiographic detection of two right posterior neck lymph nodes and a left level IIa lymph node. The patient underwent a wide local excision and split-thickness skin grafting for squamous cell carcinoma on his scalp with clear margins, followed by bilateral neck lymph node dissection revealing metastatic disease without extracapsular spread in 4 lymph nodes involving the right neck only. Positron emission tomography–computed tomography scan revealed no distant metastatic disease; thus he was determined to have

Figure 1. *Clinical presentation. Friable, erythematous, exophytic nodule on the right occipital scalp.*

stage T3N2M0 disease. The patient subsequently received adjuvant external beam radiation therapy localized to the right neck (5200cGy total dose over 26 fractions) and tolerated it well. Post-operative course has been uncomplicated and he has showed no signs of recurrent disease.

Case Discussion

Folliculitis decalvans is a rare, inflammatory, cicatricial alopecia. *S. Aureus* infection, hypersensitivity reactions to super-antigens, and immunologic deficits have been implicated in its pathogenesis [2]. In primary cicatricial alopecia, there is underlying damage to epithelial hair follicle stem cells ultimately leading to destruction of the hair follicle, followed by fibrosis and hypertrophic scarring [3]. Although early FD is notable for prominent neutrophilic infiltrate and destruction of sebaceous glands, lymphocytes and plasma cells begin to appear with disease progression [2]. The ensuing chronic inflammation and scarring likely sets the stage for carcinogenesis, as seen in Marjolin ulcers [4].

Squamous cell carcinomas arising in the setting of chronic inflammation are reported to have a higher metastatic rate than those arising in sun-exposed areas [5]. Although SCCs have been reported in the setting of other inflammatory conditions such as dissecting cellulitis and hidradenitis suppurativa, only one other case of SCC arising in the setting of folliculitis decalvans has been reported to our knowledge [5].

Conclusion

Although very rare, our case demonstrates the need for heightened provider awareness of the risk for developing cutaneous SCC in chronic inflammatory scalp conditions in order to ensure timely management, especially given the increased likelihood of metastatic spread.

Potential conflicts of interest

The authors declare no conflicts of interests.

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