

Foresee Your Next Patient

Hypertrophic Actinic Keratosis

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A 67-year-old Caucasian male presented with a red scaly plaque on his left cheek. The patient reported that the lesion was first noted about 2 years ago and slowly increased in size with time. The lesion was slightly uncomfortable, particularly when washing his face. The patient was a gardener and used to work outdoors. The patient was otherwise in good health. There was no family history of skin cancer.

Physical examination and laboratory findings. Further evaluation revealed a hyperkeratotic red plaque on the left cheek. The lesion measured 1 cm x 2 cm, had a rough surface, and felt like sandpaper. Pronounced wrinkles and lentigines were also noted. The rest of the physical examination was normal. Skin biopsy showed a hyperkeratotic stratum corneum with alternating areas of orthohyperkeratosis and parakeratosis, hypergranulosis, acanthosis, and minimal dysplasia confined to the basal layer and deepest cells of the stratum spinosum. Based on clinical and histological findings, a diagnosis of hypertrophic actinic keratosis was made.

Discussion. Hypertrophic actinic keratosis, a variant of actinic keratosis, is primarily caused by chronic sun and ultraviolet exposure. The condition is more common in sun-exposed areas on a background of solar-damaged skin, elderly males, individuals with fair skin, individuals working outdoors, individuals who are immunocompromised, and individuals with a history of severe sunburns during childhood.^{1,2} Ultraviolet radiation can lead to mutations in the tumor suppressor gene, p53.³ It has been shown that the p53 is significantly higher in hypertrophic actinic keratosis lesions than in perilesional normal skin indicating that p53 is an early and crucial event in the development of hypertrophic actinic keratosis.⁴

Clinically, the lesion appears as an asymptomatic to slightly tender, rough, scaly, poorly demarcated, erythematous plaque on a sun-exposed area. Scales are thick, adherent, difficult to remove, and better felt than seen. The lesion measures from 1 mm to several centimeters in diameter. Sites of predilection are the dorsa of the hands, dorsa of forearms, and face. Wrinkles and lentigines are often associated.

Histologically, actinic keratoses are usually divided into 5 different types, namely, hypertrophic, atrophic, bowenoid, acantholytic, and pigmented.⁴ The hypertrophic and atrophic types are the most common variants.⁴ Characteristic histological features of hypertrophic actinic keratosis include hyperkeratotic stratum corneum, pronounced orthokeratosis intermingled with parakeratosis (the “flag sign”), hypergranulosis, acanthosis, and dysplasia of the lower epidermis.^{1,5}

The diagnosis is mainly clinical which can be aided by dermoscopy. A biopsy of the skin lesion is indicated if the diagnosis



is in doubt especially to rule out malignancy. Histological examination is the gold standard for diagnosis.

In general, the risk of progression of actinic keratosis to malignant transformation is low. However, compared with the other variants of actinic keratosis, in hypertrophic actinic keratosis, there is an increased tendency to form squamous cell carcinoma.⁶ It has been shown that p53 plays an important role in the repair of ultraviolet-induced DNA damage and apoptosis.² As such, alterations in p53 can lead to ultraviolet-induced skin carcinogenesis.²

The most common reason for treatment is to prevent malignant transformation, and also for cosmetic and symptomatic relief. Treatment options include liquid nitrogen cryotherapy, topical 5-fluorouracil, topical imiquimod, topical ingenol mebutate gel, surgical excision, electrodesiccation with curettage, laser therapy, chemical peels, and photodynamic therapy.⁷

Conclusion. The patient was treated over 3 visits with liquid nitrogen cryotherapy by his dermatologist resulting in lesion clearance. ■

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