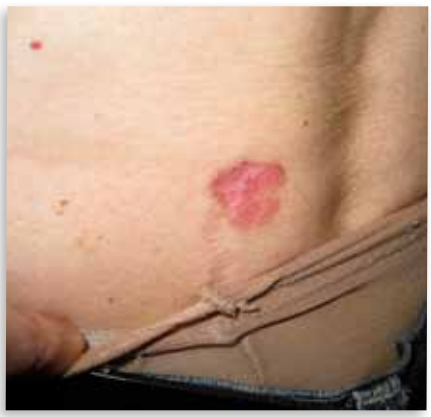
Answer to Dermacase *continued from page 1149*

5. Superficial basal cell carcinoma



Basal cell carcinoma (BCC) is a cutaneous malignancy derived from nonkeratinizing cells that originate in the basal layer of the epidermis. It is the most common type of skin cancer in humans. The 4 main subtypes include nodular, superficial, pigmented, and morpheaform or sclerosing. The primary risk factors for developing BCC include fair skin colour and increased sun exposure.[1] The incidence of BCC is 19 times higher in the white population compared with darker-skinned populations. Additional risk factors include immunosuppression and genetic skin disorders such as xeroderma pigmentosum.[2]

Superficial BCC is the second most common subtype, accounting for 9.0% to 17.5% of all BCCs.[1] The typical presentation is a solitary, well-defined, erythematous plaque with variable overlying scales and a threadlike, slightly raised, pearly border.[3] Size can range from a few millimetres to several centimetres in diameter. By far most cases are asymptomatic. Rarely, variable pigmentation or ulceration might be present. Unlike other BCC subtypes, which are most commonly found on the head and neck, superficial BCC predominantly occurs on the trunk and extremities.[1] This has led to speculation that superficial BCC development is linked with intense intermittent rather than cumulative sun exposure, although this association has yet to be confirmed.[1,4-6] Superficial BCC also differs from other BCC subtypes in that it tends to have an earlier age of onset and more frequently affects women.[1,7]

Diagnosis

Superficial BCC is most often diagnosed clinically. The differential diagnosis includes a solitary plaque of nummular eczema or psoriasis, actinic keratosis, Bowen disease (ie, squamous cell carcinoma in situ), superficial spreading melanoma, and extramammary Paget disease.[3] Patients with nummular eczema or psoriasis usually have multiple sites of involvement and most will describe a previous history of similar lesions. Nummular eczema preferentially occurs on the distal extremities and plaques tend to be very pruritic. Psoriasis classically occurs on the extensor surfaces of the body, especially the elbows, knees, and buttocks, and plaques tend to be thicker with an overlying scale that is silver in colour. Patients with psoriasis might also have associated scalp, nail, or joint findings. Although most cases of nummular eczema and psoriasis are readily distinguishable from superficial BCC, any solitary plaque of "eczema" or "psoriasis" unresponsive to treatment should be considered suspicious for superficial BCC; skin biopsy should be performed in these cases.

Actinic keratoses tend to be smaller in size and less well defined, and any adherent scale is often felt before it can be seen. In addition, they occur almost exclusively on the head, neck, and dorsa of the hands and forearms, and rarely on the trunk.

Bowen disease is clinically indistinguishable from superficial BCC. Likewise, superficial BCC with variable pigmentation cannot be differentiated with certainty from superficial spreading melanoma. As such, skin biopsy should be performed for all scaly, erythematous plaques with pigmentation.

Extramammary Paget disease is also very similar in clinical appearance to superficial BCC. However, this cutaneous malignancy is rare and typically symptomatic, with frequent reports of burning and intense pruritus. Although extramammary Paget disease most often occurs on apocrine gland–bearing skin (ie, groin, axillae, vulva, perianal region, scrotum, and penis), it is included in the differential diagnosis of superficial BCC because ectopic cases occurring on areas of the body relatively free of apocrine glands (ie, chest and abdomen) have also been reported.[8]

Treatment

As with other BCC subtypes, superficial BCC rarely metastasizes, and morbidity is due to local tissue invasion and destruction.[3] The goal of treatment is to eradicate the tumour while providing an acceptable cosmetic outcome for the patient. Treatment for superficial BCC includes both surgical and nonsurgical options.

For primary superficial BCC occurring at a low-risk anatomic site (eg, trunk and extremities) with distinct clinical borders and size less than 2 cm in diameter, several effective treatment options are available: standard surgical excision, electrodesiccation and curettage, liquid nitrogen cryotherapy, imiquimod 5% cream, 5-fluorouracil 5% cream, and photodynamic therapy.[3,9] Of these treatments, it is important to note that only standard surgical excision allows for verification of histologic clearance.[3]

Standard surgical excision is highly effective, with recurrence rates of less than 2% reported at 5 years when lesions are excised with histologically clear margins.[8] Excision using 4- to 5-mm margins will completely remove the tumour in approximately 95% of cases.[9] Electrodesiccation and curettage and liquid nitrogen cryotherapy have reported cure rates of 92.3% and 99%, respectively, for appropriately selected low-risk BCC when performed by experienced practitioners.[10,11] With regard to cryotherapy, double freeze-thaw treatment cycles are generally recommended for facial lesions, whereas a single treatment cycle is sufficient for truncal

lesions.[9] Double freeze-thaw treatment cycles involve 2 treatments of liquid nitrogen, with the second treatment implemented only after the frozen site has had sufficient time to spontaneously thaw without assistance following the first treatment.[9,10] Adverse effects of cryotherapy include pain and discomfort during treatment as well as dyspigmentation, redness, and blistering after treatment, which can take 2 to 3 weeks to heal.[10]

Topical immunotherapy with imiquimod 5% cream applied 5 times weekly for 6 weeks is a safe and effective treatment option as well. A complete histologic clearance rate of 82% was reported with this dosing regimen in a phase 3, randomized, vehicle-controlled study.[12] Almost all patients will experience moderate to severe local skin reactions at the application site, which can include erythema, edema, erosion or ulceration, and scabbing or crusting. Patients should be warned about these adverse effects before treatment. If the local skin reactions are severe, treatment can be temporarily discontinued and resumed once symptoms have subsided. Long-term data on recurrence rates are limited at this time.[12] Topical immunotherapy with 5-fluorouracil 5% cream applied twice daily for 12 weeks can also be used in the treatment of superficial BCC, with histologic cure rates of 90%.[13] Erythema and mild scarring are the main adverse effects. Photodynamic therapy is another effective treatment option, with cure rates ranging from 86% to 92% and superior cosmetic outcomes when compared with standard surgical excision and cryotherapy.[14,15]

For primary superficial BCC located at a high-risk anatomic site (eg, central face, around the eyes, nose, lips, and ears), with indistinct clinical borders or size greater than 2 cm in diameter, or for any recurrent superficial BCCs, Mohs micrographic surgery is the preferred treatment. Referral to a dermatologist specializing in Mohs micrographic surgery is required. Extremely high overall 5-year cure rates of 99% and 94% for primary and recurrent high-risk BCCs, respectively, have been reported in the literature. For patients unwilling or unable to tolerate surgery, radiation therapy can also be offered.[9]

Conclusion

With appropriate treatment, the prognosis of superficial BCC is excellent. However, regardless of subtype, routine follow-up is recommended for all patients with primary BCC in order to monitor for local recurrence or the development of new primary BCCs at other sites. In addition, patients with a history of BCC are at an increased risk of developing melanoma. Therefore, periodic skin self-examination and sun safety measures (eg, sun-protective clothing, sunscreen with a sun-protective factor of at least 30, and avoidance of midday sun) should be recommended to all patients.[3]

Mr Petropolis is a fourth-year medical student at Dalhousie University in Halifax, NS. **Dr Prajapati** is a second-year dermatology resident at the University of Alberta in Edmonton. **Dr Barankin** is a dermatologist practising in Toronto, Ont.

Competing interests
None declared

References

1. Scrivener Y, Grosshans E, Cribier B. Variations of basal cell carcinomas according to gender, age, location and histopathological subtype. *Br J Dermatol* 2002;147(1):41-7.
2. Roewert-Huber J, Lange-Asschenfeldt B, Stockfleth E, Kerl H. Epidemiology and aetiology of basal cell carcinoma. *Br J Dermatol* 2007;157(Suppl 2):47-51.
3. Wolff K, Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ. *Fitzpatrick's dermatology in general medicine.* 7th ed. New York, NY: McGraw-Hill; 2008.
4. Raasch BA, Buettner PG, Garbe C. Basal cell carcinoma: histological classification and body-site distribution. *Br J Dermatol* 2006;155(2):401-7.
5. McCormack CJ, Kelly JW, Dorevitch AP. Differences in age and body site distribution of histological subtypes of basal cell carcinoma. A possible indicator of different causes. *Arch Dermatol* 1997;133(5):593-6.
6. Pelucchi C, Di Landro A, Naldi L, La Vecchia C; Oncology Study Group of the Italian Group for Epidemiologic Research in Dermatology. Risk factors for histological types and anatomic sites of cutaneous basal-cell carcinoma: an Italian case–control study. *J Invest Dermatol* 2007;127(4):935-44. Epub 2006 Oct 19.
7. Betti R, Radaelli G, Mussino F, Menni S, Crosti C. Anatomic location and histopathologic subtype of basal cell carcinomas in adults younger than 40 or 90 and older: any difference? *Dermatol Surg* 2009;35(2):201-6.
8. Griffiths RW, Suvarna SK, Stone J. Do basal cell carcinomas recur after complete conventional surgical excision? *Br J Plast Surg* 2005;58(6):795-805.
9. Telfer NR, Colver GB, Morton CA; British Association of Dermatologists. Guidelines for the management of basal cell carcinoma. *Br J Dermatol* 2008;159(1):35-48.
10. Kuflik EG. Cryosurgery for skin cancer: 30-year experience and cure rates. *Dermatol Surg* 2004;30(2 Pt 2):297-300.
11. Rowe DE, Carroll RJ, Day CL Jr. Long-term recurrence rates in previously untreated (primary) basal cell carcinoma: implications for patient follow-up. *J Dermatol Surg Oncol* 1989;15(3):315-28.
12. Geisse J, Caro I, Lindholm J, Golitz L, Stampone P, Owens M. Imiquimod 5% cream for the treatment of superficial basal cell carcinoma: results from two phase III, randomized, vehicle-controlled studies. *J Am Acad Dermatol* 2004;50(5):722-33.
13. Gross K, Kircik L, Kricorian G. 5% 5-fluorouracil cream in the treatment of small superficial basal cell carcinoma: efficacy, tolerability, cosmetic outcome, and patient satisfaction. *Dermatol Surg* 2007;33(4):433-9; discussion 440.
14. Basset-Seguin N, Ibbotson SH, Emtestam L, Tarstedt M, Morton C, Maroti M, et al. Topical methyl aminolaevulinate photodynamic therapy versus cryotherapy for superficial basal cell carcinoma: a 5 year randomized trial. *Eur J Dermatol* 2008;18(5):547-53. Epub 2008 Aug 8.
15. Szeimies RM, Ibbotson S, Murrell DF, Rubel D, Frambach Y, de Berker D, et al. A clinical study comparing methyl aminolevulinate photodynamic therapy and surgery in small superficial basal cell carcinoma (8-20 mm), with a 12-month follow-up. *J Eur Acad Dermatol Venereol* 2008;22(11):1302-11. Epub 2008 Jul 2.