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Improving detection of non-melanoma skin cancer

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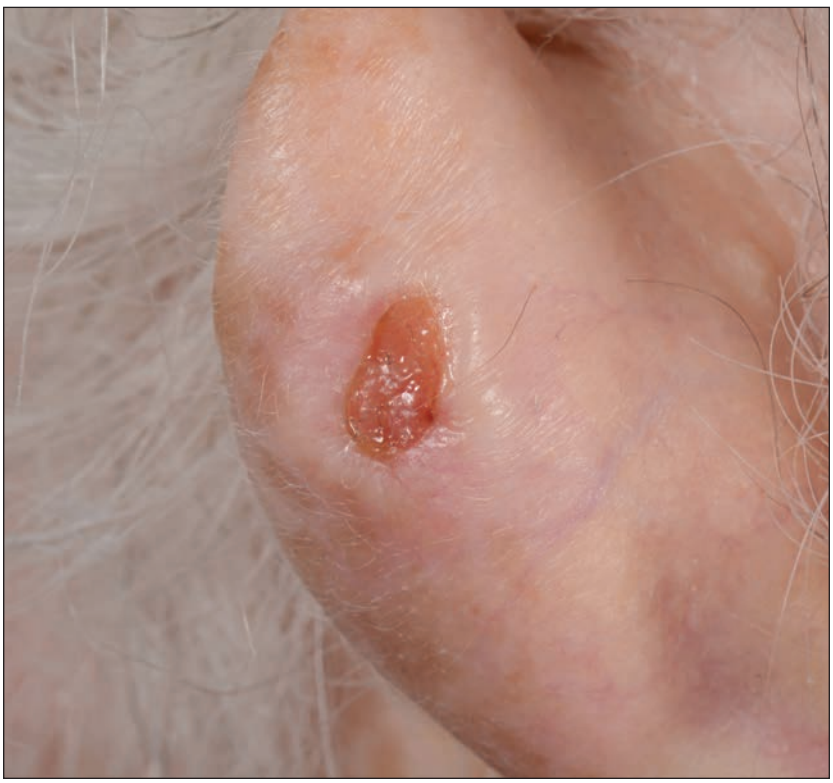

What are the different presentations?

How should diagnosis be confirmed?

What are the management options?

THE VAST MAJORITY OF NON-MELANOMA SKIN CANCER (NMSC) CASES ARE BASAL CELL carcinoma (BCC) or squamous cell carcinoma (SCC), both of which are derived from epidermal keratinocytes. Much less common NMSCs include Merkel cell carcinoma, appendageal tumours and lymphoma.

BCCs and SCCs are clinically and pathologically distinct and both are locally invasive, but while BCCs rarely metastasise, SCCs have the potential to do so especially when they arise on the ears or lips.

NMSC is a significant and underestimated public health problem, with around 102,000 cases diagnosed in the UK each year.[1] A full-time GP is likely to encounter at least one BCC per year (with approximately 75,000 cases diagnosed annually in the UK[2]) and one SCC every one to two years (with almost 25,000 SCCs diagnosed annually[2]).

Almost 40% of referrals to secondary care for a dermatology opinion are for the diagnosis and management of skin lesions,[3] and almost 88% of urgent referrals for suspected skin cancer prove to be non-malignant.[4]

RISK FACTORS

Ultraviolet radiation, from natural sunlight or artificial sources such as sunbeds, is now recognised as the most important risk factor for NMSC.

NMSCs most commonly arise in fair-skinned individuals on sun-damaged skin, especially the face, the incidence rising with age. Patients with one NMSC have a higher risk of developing another NMSC and of malignant melanoma.

'Patients with non-melanoma skin cancer have a higher risk of malignant melanoma'

In addition, immunosuppression resulting from medication use or haematological malignancies is a very significant risk factor. There are also certain inherited disorders that predispose to NMSC, such as xeroderma pigmentosum and Gorlin's syndrome.

PRESENTATION

BCCs tend to be slow growing and present with a variety of morphological types,[3] see table 1 and figures 1-4, p24, and figures 5 and 6, p25.

SCCs are frequently more difficult to diagnose than BCCs. The clinical features depend on the degree of differentiation. Well differentiated lesions have a pronounced keratotic element, see figure 7, p25, while poorly differentiated SCCs tend to be pink or red papules or nodules, lacking keratin, that may ulcerate, see figure 8, p25. Tenderness can be a strong »

Table 1

Morphological features of different types of basal cell carcinoma

Clinical type	Morphological features
Nodular BCC *see figures 1 and 2, below*	Pearl-coloured papule or nodule Telangiectasia Tends to glint in reflected light May ulcerate (rodent ulcer)
Superficial BCC *see figure 3, below*	Erythematous well demarcated plaque with a shiny whipcord margin May easily be mistaken for an isolated patch of eczema or psoriasis, *see figure 4, below,* or intraepidermal carcinoma
Pigmented BCC *see figure 5, opposite*	Retains pigment Blue, grey or brownish component May resemble a melanoma
Morphoeic BCC *see figure 6, opposite*	Waxy, skin-coloured or scar-like plaque Often occurring on mid-facial sites

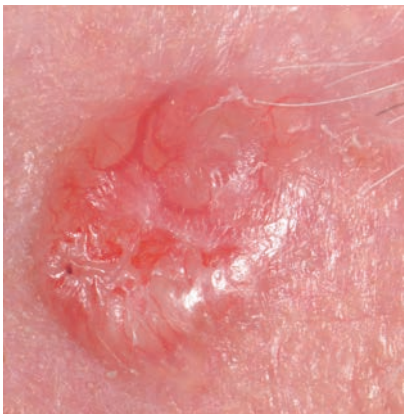

FIGURE 1
A small nodular BCC

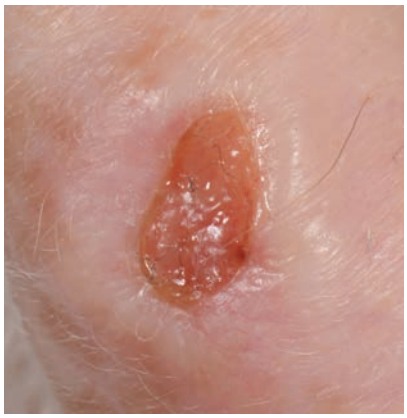

FIGURE 2
An ulcerated BCC

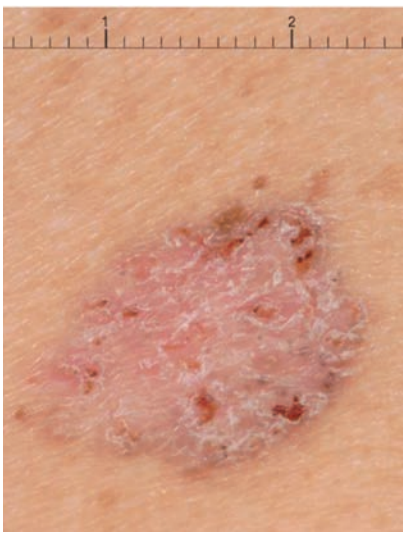

FIGURE 3
A superficial BCC

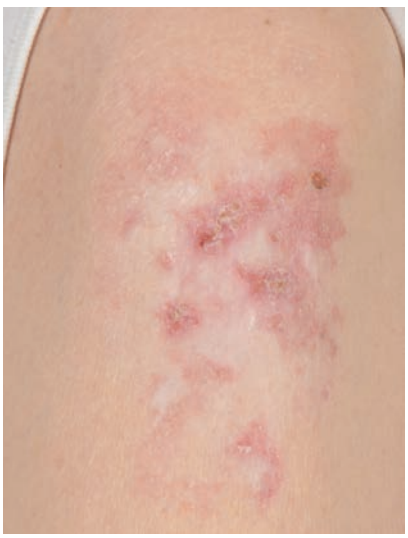

FIGURE 4
This large superficial BCC was treated as both eczema and psoriasis for many years prior to referral

indicator of malignancy.

SCCs may develop from pre-existing actinic keratosis or intraepidermal carcinoma (IEC) but can arise on apparently normal skin. It is important to remember that SCCs can also develop within chronic wounds (such as venous ulcers — Marjolin ulcer) and scarred skin. SCCs and BCCs on the legs are often more difficult to diagnose and may present as a non-specific ulcer.

'Tenderness can be a strong indicator of malignancy'

Although different criteria are set for defining high-risk BCCs and SCCs, they are generally based on the size, site, histological subtype, histological features of aggression, previous treatment failure and host immunosuppression.

BCCs very rarely metastasise, but they can be very destructive locally. The majority of SCCs are low risk, but approximately 5% of SCCs metastasise, and it is very important that the high-risk SCCs are correctly identified in order that that they can be managed by an experienced multidisciplinary skin cancer team.

High-risk SCC characteristics include:

- Site: on the ear, lip, sites not exposed to the sun and in chronic ulcers, scars or IEC
- > 20 mm in diameter
- > 4 mm in depth
- Poorly differentiated tumours
- Host immunosuppression
- Recurrent disease

IEC, also known as Bowen's disease and in-situ squamous cell carcinoma, is confined to the epidermis and therefore noninvasive. However, about 5% develop into invasive SCCs.[8] IECs tend to present as a well demarcated, erythematous, scaly patch or plaque in sun-exposed sites, see figure 9, opposite.

Keratoacanthomas are benign epidermal tumours, see figure 10, opposite. They tend to arise in sun-damaged skin and grow quickly as a nodule with a central keratin-filled crater, often resolving spontaneously in due course. However, because of the difficulty in distinguishing them from well differentiated SCCs, they should be referred urgently.

When assessing a patient presenting with a possible skin cancer, ideally a full skin examination should be undertaken in order to identify other incidental lesions.

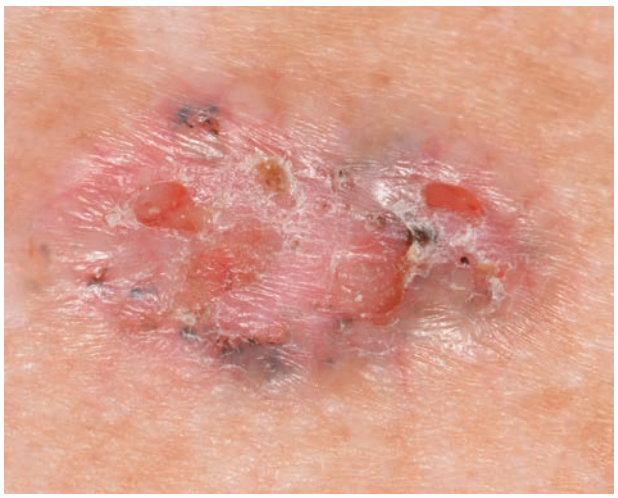

FIGURE 5
Blue-grey globules and flecks of pigment can be seen scattered through this pigmented BCC

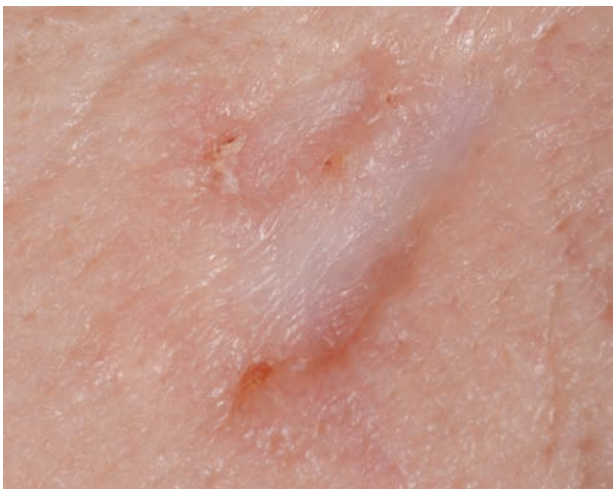

FIGURE 6
A morphoeic BCC on the medial cheek of an elderly woman

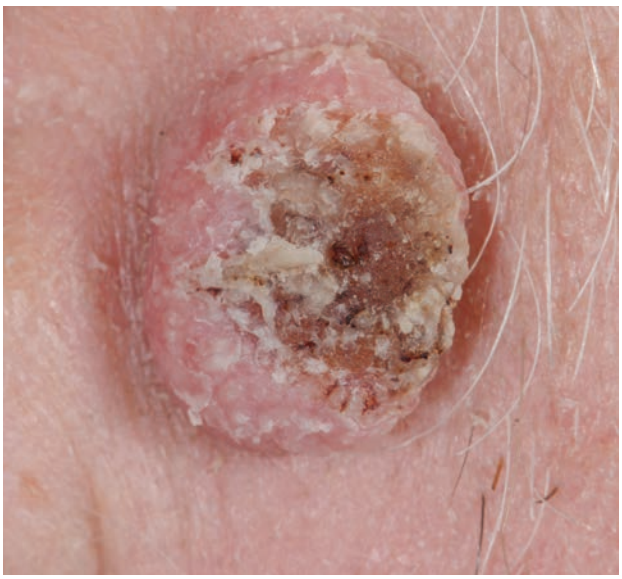

FIGURE 7
A large moderately differentiated SCC on pre-auricular skin

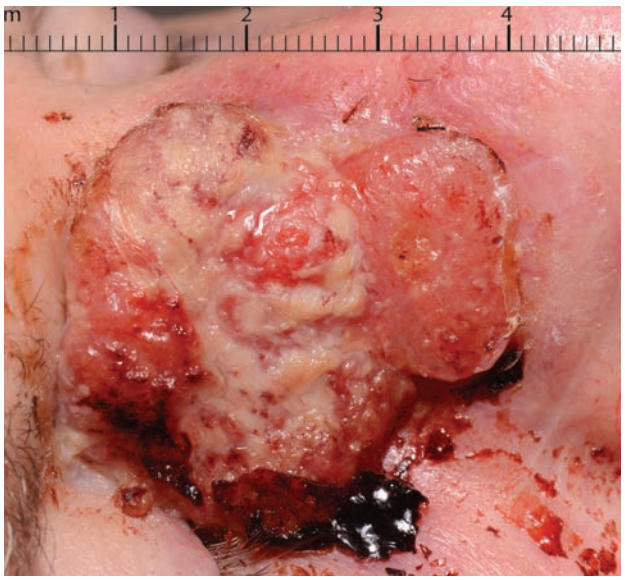

FIGURE 8
A rapidly growing poorly differentiated SCC

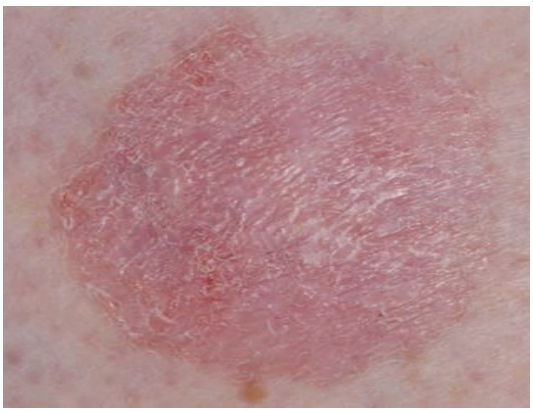

FIGURE 9
A large scaly well defined patch of Bowen's disease on a patient's calf

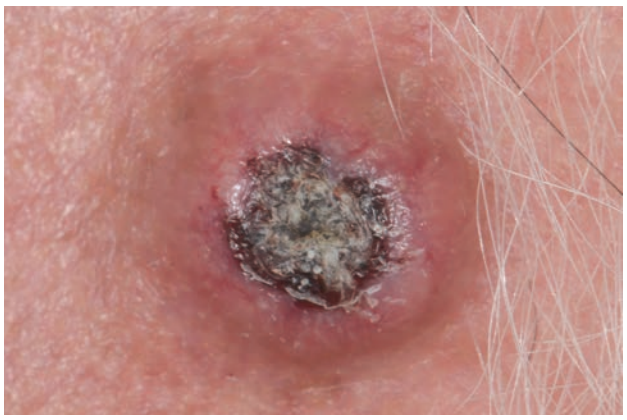

FIGURE 10
A keratoacanthoma. Note the central keratin

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Table 2

Treatment options for basal cell carcinoma

Treatment	Type of BCC
Excision	Lesions commonly excised with a 4-5 mm margin (95% clearance rate). Often the most appropriate option for primary nodular BCCs
Mohs micrographic surgery	BCCs on high-risk areas of the face (around eyes, lips and nose). Also the best option for ill defined, morphoeic or recurrent BCCs on the face
Curettage and cautery	Suitable for treating superficial BCCs
Topical therapy (imiquimod or fluorouracil cream)	Suitable for small superficial BCCs — follow-up is advised as lesions may recur
Cryotherapy	Suitable for small superficial BCCs
Photodynamic therapy	Suitable for small superficial BCCs
Radiotherapy	Treatment of choice in patients with facial lesions who decline/cannot tolerate surgery. Less commonly used now
Vismodegib	A novel treatment for advanced or metastatic BCCs

REFERRAL

Patients with a slowly evolving or persistent skin lesion where cancer is a possibility should be referred to a dermatologist.

'Squamous cell carcinomas can also develop within chronic wounds and scarred skin'

NICE recommends that a lesion suspected of being a BCC is referred routinely.[2] Urgent referral should be reserved for patients where there is concern that a delay may have a significant impact because of the size or site of the lesion.

Some low-risk BCCs can be diagnosed and treated in primary care, and NICE has published detailed guidance defining which patients can be appropriately treated, depending on the level of expertise of the GP.[3] These tend to be patients with a solitary, small, well defined, low-risk BCC not in the head and neck area.

All GPs who perform minor surgery should have received accredited training in relevant aspects of skin surgery and should undertake appropriate continuing professional development. NICE also recommends that all excised skin specimens should be sent for pathological examination and when referring a patient from whom a malignant lesion has been excised, a copy of the pathology report should be sent with the referral.

NICE recommends that any non-healing lesions larger than 1 cm with marked induration on palpation, showing significant expansion over eight weeks, should be referred urgently as they may be SCCs.[2]

In addition, any new or growing cutaneous lesions in immunosuppressed patients should be referred urgently, as SCCs in this group are often atypical and aggressive.

All suspected SCCs should be managed in secondary care and ideally should not be removed in the community.

TREATMENT

The British Association of Dermatologists and SIGN have both published guidelines on the management of BCCs and SCCs.[5,6,9]

The choice of treatment will depend on the type, size and location of the lesion, patient factors and preference as well as the preference and expertise of the doctor. The patient must be informed of the advantages and disadvantages of all options including cosmetic results and likelihood of complete eradication, with the final decision resting with the patient.

It is also important to remember that a conservative approach is sometimes appropriate (especially in low-risk small asymptomatic BCCs) when treatment may cause more problems than leaving the lesion alone.

Broadly speaking, the treatment options for BCCs can be divided into non-surgical and surgical techniques, with the surgical options further divided into excision or destruction, see table 2, left.[5] Needless to say, when a non-surgical option is chosen, it is expected that the histological diagnosis is confirmed before treatment.

Where feasible, surgical excision (including Mohs micrographic surgery where appropriate) is considered the treatment of choice for cutaneous SCCs. The goal is complete removal (or destruction) of the primary tumour and of any local metastases. Curettage and cautery (C&C), cryotherapy and radiotherapy can be considered if formal excision is not a practical option.

IECs can be treated with C&C, photodynamic therapy, cryotherapy or topically with imiquimod or fluorouracil cream.

'All suspected squamous cell carcinomas should be managed in secondary care'

FOLLOW-UP

Following treatment for a NMSC, patients are at risk of local recurrence and the development of a further primary. Recurrence risk depends on the treatment used as well as the tumour characteristics. High-risk lesions are more likely to recur.

Generally, patients treated for a single primary BCC are at low risk of recurrence. They should be given sun protection advice and warned of the risk of developing a second primary (almost 40% in five years),[6] and are suitable for self-monitoring or follow-up in primary care. However, there is a strong case for the follow-up of patients with recurrent or multiple BCCs in either primary or secondary care.

In SCC, early detection and treatment improves outcomes for patients with recurrent disease.[5] Patients should be told to self-monitor their scar site, and local skin and to examine themselves for

key points

SELECTED BY

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GP, Wrexham and Associate GP Dean for North Wales

Basal cell carcinomas (BCCs) and squamous cell carcinomas (SCCs) are clinically and pathologically distinct and both are locally invasive. However, while BCCs rarely metastasise, SCCs have the potential to do so especially when they arise on the ears or lips. UV radiation is the most important risk factor for non-melanoma skin cancer (NMSC). The tumours most commonly arise in fair-skinned individuals on sun-damaged skin, especially the face. Incidence rises with age. Patients with one NMSC have a higher risk of developing another NMSC and of malignant melanoma.

SCCs are frequently more difficult to diagnose than BCCs. The clinical features depend on the degree of differentiation. Well differentiated lesions have a pronounced keratotic element, while poorly differentiated SCCs tend to be pink or red papules or nodules, lacking keratin, which may ulcerate. Tenderness can be a strong indicator of malignancy.

Around 5% of SCCs metastasise. High-risk SCCs include those: on the ear, lip, or sites unexposed to the sun and in chronic ulcers, scars or Bowen's disease. SCCs > 20 mm in diameter or > 4 mm in depth are high risk. Patients who are immunosuppressed, have poorly differentiated tumours or recurrent disease are also at increased risk.

Patients with a slowly evolving or persistent skin lesion where cancer is a possibility should be referred to a dermatologist. Lesions suspected of being BCC should be referred routinely. Urgent referral should be reserved for cases where there is concern that a delay may have a significant impact because of the size or site of the lesion. Any non-healing lesions > 1 cm with marked induration on palpation, showing significant expansion over eight weeks, should be referred urgently as they may be SCCs.

Treatment options for BCCs can be divided into non-surgical and surgical techniques, with the surgical options further divided into excision or destruction. Surgical excision is the treatment of choice for cutaneous SCCs. The goal is complete removal (or destruction) of the primary tumour and any local metastases.

Generally, patients treated for a single primary BCC are at low risk of recurrence. They should be given sun protection advice and warned of the risk of developing a second primary (almost 40% in five years), and are suitable for self-monitoring or follow-up in primary care. There is a strong case for following up patients with recurrent or multiple BCCs in primary or secondary care.

In SCC, early detection and treatment improves outcomes for patients with recurrent disease. Patients should be told to self-monitor their scar site, and local skin and to look for regional lymphadenopathy. Most relapses occur in the first five years after diagnosis and therefore patients with high-risk SCCs are often followed up for at least two, and up to five, years in secondary care.

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'There is a strong case for the follow-up of patients with recurrent or multiple basal cell carcinomas'

CONCLUSIONS

NMSC is becoming increasingly prevalent, placing a significant burden on NHS resources. There is therefore a significant need for well trained healthcare professionals to diagnose and manage NMSC.

The primary healthcare team has a vital role in the early detection and recognition of lesions that may be diagnosed and possibly treated in the community and those that must be referred and treated in secondary care. Reminding patients to take sensible precautions in the sun should be a key part of any consultation with NMSC patients.

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