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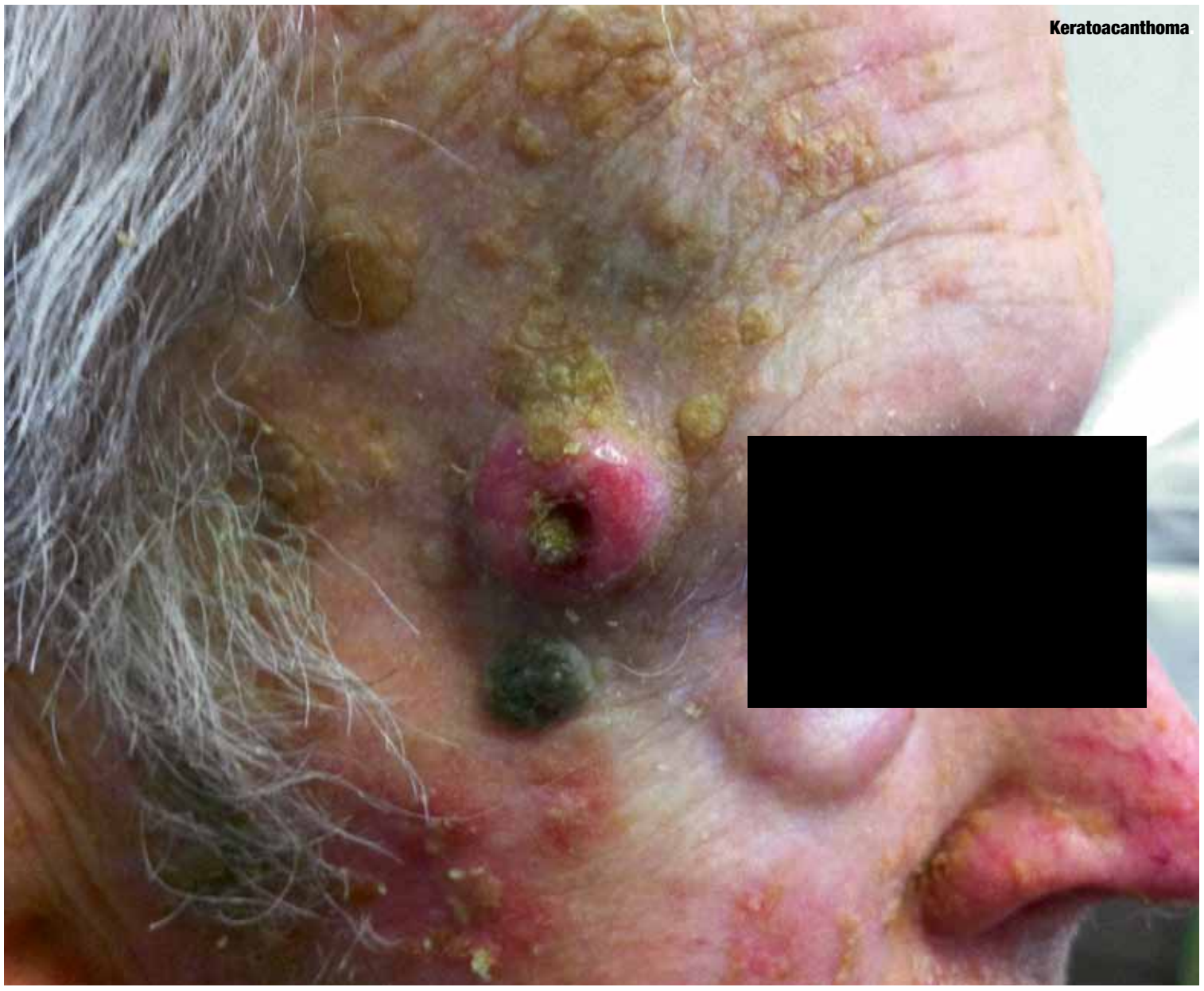
Keratoacanthoma

Skin cancer and benign lesions

Introduction

IN 2010, skin cancer accounted for seven out of every eight new cancers diagnosed in Australia. While the population of Australia increased by 22% between 1997 and 2010, the number of non-melanoma skin cancers treated increased by 87%. The incidence of non-melanoma skin cancers is increasing 2.5 times as fast as other cancers. There is mounting evidence that non-melanoma skin cancer is a marker of a cancer-prone phenotype, especially when it occurs at an early age.

Diagnosis and treatment of skin cancer consumes considerable time and resources. Accurate clinical diagnosis reduces the need to excise benign skin lesions, reduces the cost to the patient and government, and improves patient satisfaction.

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inside

The author

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Epidemiology and clinical features

IN 2010 more than 767,000 cases of non-malignant skin cancer were treated in Australia. These cancers are most common in people living in Queensland and NSW. The risk of skin cancer increases with age — more than 85% of all new non-melanoma skin cancers occur in people aged 60 and over.

Non-melanoma skin cancer is about 10 times as common as melanoma. Basal cell carcinomas are the most common non-melanoma skin cancers and are twice as common as squamous cell carcinomas.

The principal skin malignancies encountered in general practice are BCC, SCC, malignant melanoma (MM) and Bowen's disease (an in situ variant of SCC). The benign lesions for which surgery may be considered are:

- Seborrhoeic keratoses.
- Viral warts.
- Benign melanocytic naevi.
- Dermatofibroma.
- Skin tags.
- Pyogenic granuloma.

Diagnosis

The ability to make a correct clinical diagnosis is the most important skill a skin surgeon can acquire. Accurate diagnosis ensures that adequate surgical margins are included in the excision of malignant lesions, and, conversely, allows minimisation of the margin of normal skin in the removal of benign lesions.

Biopsy is very useful if the diagnosis is uncertain, and even experienced dermatological surgeons take biopsies before definitive excision if the diagnosis or the margins required are unclear.

History

In primary care, patients often present with a lesion that is causing them concern. Often, the lesion is a secondary reason for presentation or even an afterthought in a consultation for a separate problem. Taking a systematic patient history will aid diagnosis (table 1).

Examination

After a history has been taken, the lesion and skin in general should be examined. Examination of the background skin may show signs of chronic sun damage, such as dry, thickened scaly skin with excess wrinkles. When examining the lesion, first assess its general impression — ask yourself: "Does this look benign?"

Check the lesion for pigment and, more importantly, any irregularity in the colour throughout (figure 1). Look at the edge of the lesion — is it regular and uniform (as in a benign naevus; figure 2) or is there irregularity? Does the edge appear to invade the surrounding skin? Note the presence of any tissue destruction, scabbing, bleeding or ulcer formation (figures 3 and 4).

Sometimes it is worth stretching the skin around a lesion as other features, such as a rolled edge, may become apparent. It is also important to check for the presence of other lesions, particularly in sun-exposed areas.

Even when it is not possible to make a definite diagnosis based on clinical features, lesions can often still be classified as benign, premalignant or malignant. 'Pointers' towards the malignant potential of a lesion are shown in table 2. If in doubt, err on the side of caution, assume the lesion is potentially malignant and take a biopsy.

Figure 1: Malignant melanoma.

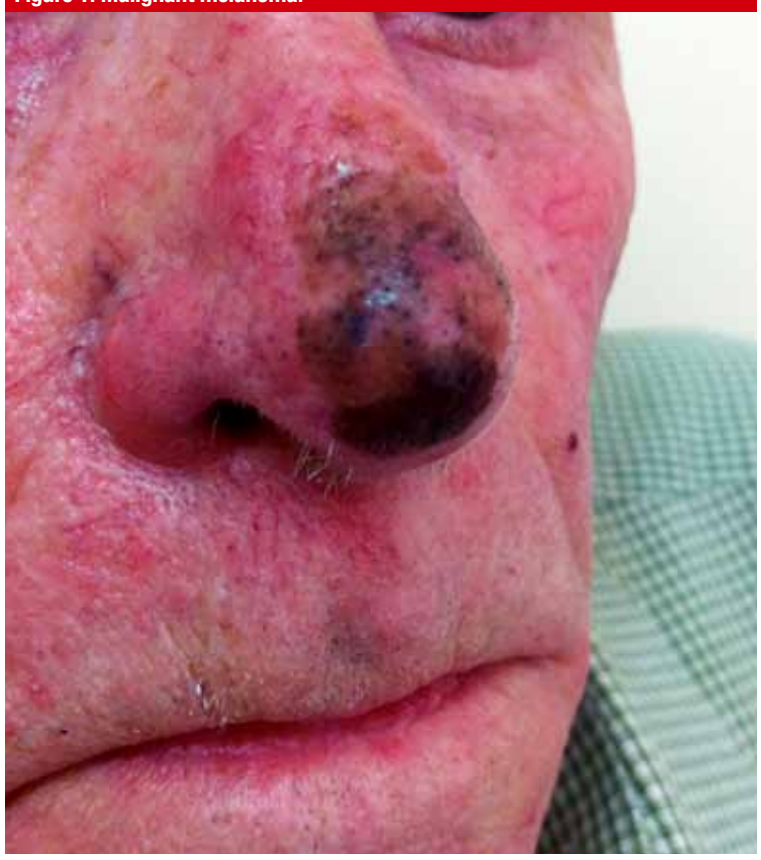


Figure 2: Benign naevi.

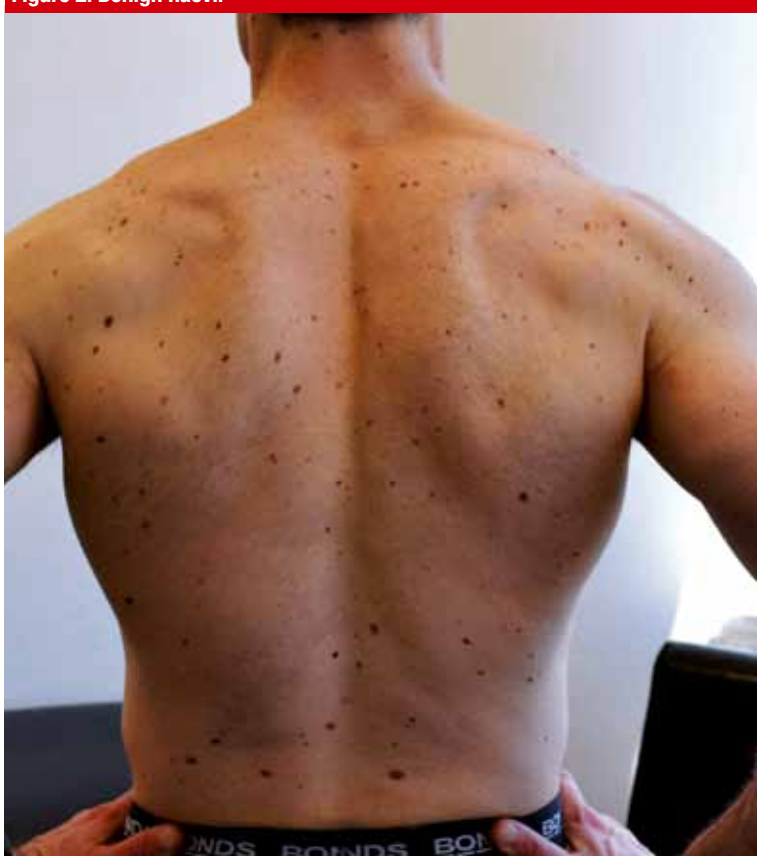


Table 1: Patient history

History	Significance
How long has the lesion been present?	Newly acquired lesions that persist for longer than 1-2 months may indicate neoplasm, particularly in an older age groups
Has a pigmented lesion changed in colour or shape?	Alteration in shape or colour may point towards malignancy
Has there been any bleeding?	Some benign lesions bleed: for example, pyogenic granuloma or seborrhoeic keratoses. However, basal cell carcinomas may also bleed. In general, melanomas bleed only when well advanced, and in such cases the diagnosis is usually obvious
Does the lesion itch or hurt?	Squamous cell carcinomas are tender, particularly when squeezed. Benign naevi or irritated seborrhoeic keratoses may also itch when irritated by clothing, etc
Is there a history of occupational sun exposure, or has the patient lived or worked in the tropics?	Skin cancers in general are related to lifetime sun exposure. Malignant melanomas may be associated with a single severe episode of sunburn
Is there a history of immunosuppressive drugs?	Immunosuppressive drugs increase the risk of skin cancer
Is there a family history of skin cancer?	This may indicate a genetic susceptibility, inherited skin type or conditions such as dysplastic naevus syndrome

Table 2: Characteristics of benign versus potentially malignant lesions

Characteristic	Benign lesion	Potentially malignant lesion
Growth	Not growing	Growing — either slowly or rapidly
Bleeding	Absent	Present
Scabbing	No scab	Scab or keratin 'crust'
Number/location	Many other similar lesions	On a sun-exposed area of the body
Shape	Regular shape with smooth outline or line of symmetry	Irregular outline with no symmetry
Colour	Uniform pigmentation	Variation in colour throughout the lesion
Occurrence	Present for many years	New lesion

Skin cancer

Basal cell carcinomas

BCCs are slowly growing invasive epithelial tumours arising from the basal layer of the epidermis. They are the most common skin cancer. Fifty per cent occur on the head and neck, 30% on the upper trunk and the remainder on the limbs.

They can take on several different appearances, including a pearly papule, a rodent ulcer, an erythematous scaling plaque on the trunk or an infiltrating, scar-like plaque (morphoeic BCC). Occasionally a BCC may be pigmented, resembling a melanoma. Figure 3 shows some of the appearances that may manifest.

Metastasis is an exceedingly rare event but they can cause extensive local destruction if left untreated.

Management

As these tumours are generally slow growing, there is usually no major urgency required in arranging therapy for BCCs. With proper patient and tumour selection, similar cure rates (of about 90%) can be achieved with surgical excision, curettage and cautery, cryotherapy and radiotherapy.

Some histological subtypes are also amenable to topical therapy with imiquimod or photodynamic therapy.

Metastatic BCC or locally advanced BCC should be treated surgically. Adjuvant radiotherapy may be considered. Cytotoxic chemotherapy with vismodegib, which targets the Patched-Gli Sonic Hedgehog pathway, is an emerging new therapy.

Surgical excision. The margin of excision is normally 2-3mm, or wider if the BCC has an aggressive histological pattern (eg, micronodular, infiltrative, morphoeic) or is recurrent or large.

Curettage and cautery. This is a simple technique that can achieve good results in trained hands. It is appropriate for well-demarcated and relatively superficial tumours. Skill is required, not only in undertaking the technique, but also in selecting the patient and the tumour appropriate for it. It is not suited to tumours with aggressive histological patterns, or recurrent tumours.

Cryosurgery. Cryosurgery is a specialised technique requiring skill. It is used mainly for well-defined superficial BCCs on the trunk. Histological confirmation is required before using this treatment. The timed spot-freeze technique is used to deliver a predetermined dose of liquid nitrogen to the lesions. Superficial BCCs generally require two 30-second freeze–thaw cycles to achieve an 80-90% cure rate. The morbidity associated with this duration of freeze needs to be taken into account when planning treatment.

Radiotherapy. Radiotherapy has a role in treatment of BCCs where surgery is likely to be very destructive (eg, around the eyelid), when surgery is contraindicated or as a postoperative adjunctive therapy of aggressive tumours especially if there is perineural spread. Multiple fractionated doses are required. It is

generally restricted to patients over 60 years of age.

With proper patient and tumour selection, similar 10-year cure rates (of about 90%) are achievable with all of the above treatments.

Topical imiquimod. This is a potent immunostimulant that has achieved histological clearance of superficial BCCs in controlled trials, with excellent cosmetic outcomes. Results showed no histological evidence of residual tumour in 88% of lesions treated with a daily application for six weeks. It was less impressive for nodular tumours. Practitioners need to be judicious in both tumour and patient selection. A pretreatment biopsy is recommended. As this treatment is patient administered compliance is essential. The 10-year cure rates are as yet unknown.

Photodynamic therapy. Photodynamic therapy (PDT) is a treatment option for carefully selected tumours. Following topical application of a porphyrin-containing cream (Metvix), intense light is shone on the area of the cream application. This causes a reaction to develop that destroys the cancerous cells. This process may need to be repeated between one and four weeks after the first session. This treatment is generally available only in specialist centres and is also suitable for actinic keratosis and Bowen's disease.

Mohs' microscopically controlled surgery. This type of surgery is used for tumours at high risk of recurrence and/or those arising at sites such as the eyelid or centrofacially, where tissue conservation is important. Through immediate frozen section examination of the tissue, it allows histological confirmation of tumour clearance before wound closure, while minimising removal of uninvolved tissue. Cure rates of up to 98% can be achieved. It is a time-consuming procedure requiring advanced training and specialist centre infrastructure.

Squamous cell carcinomas

SCCs are the second most common skin cancer. They manifest as erythematous, scaling, proliferative lesions that may grow over months. They may bleed easily and may be tender on palpation.

SCCs occur predominantly in areas that have been heavily exposed to sunlight (head and neck, limbs and upper trunk). Up to 1% may metastasise — the risk of secondary spread is greater with lesions on the ear, lower lip and scalp. Patients with long-term immunosuppression are at increased risk of developing both primary SCCs and metastases. Figure 4 shows an SCC with ulceration and tissue destruction.

Management

SCCs are more rapidly growing tumours than BCCs and should be treated as soon as is reasonable after the diagnosis is made or suspected. The principal treatment modalities are surgical excision and radiotherapy.

Metastatic SCC from a primary cutaneous SCC should be initially treated surgically. Adjuvant radiotherapy may be considered. Cytotoxic chemotherapy may have a limited role in disseminated disease.

Surgical excision is the treatment of choice for SCC. The margin of excision should be 3-5mm around the clinically evident tumour.

Curettage and diathermy may be considered in patients with low-risk lesions.

Radiotherapy may be used for a primary tumour when surgery is likely to produce severe scarring or is unsuitable (eg, for an elderly or infirm patient). Adjuvant radiotherapy may be used following excision of a high-risk primary tumour (eg, a tumour with perineural spread on histopathology).

Metastatic SCC from a primary cutaneous tumour is treated initially with surgical excision, with or without radiotherapy. Cytotoxic chemotherapy may have a limited role in disseminated disease.

Follow-up

Follow up patients with primary SCC 3-6-monthly for at least two years after removal of a primary tumour. Clinical examination for signs of possible secondary tumour (eg, in the regional lymph nodes) should be undertaken at each follow-up visit. Radiological, biochemical and haematological screening are not routine and are indicated only when evidence of metastatic disease is found on clinical examination.

Keratoacanthoma

A keratoacanthoma is probably a low-risk variant of SCC. It is a distinctive tumour that grows rapidly and has a characteristic central keratin plug.

Management

Surgical excision is the treatment of choice. Curettage and diathermy may be used if the diagnosis of keratoacanthoma has been histologically confirmed.

Bowen's disease

Bowen's disease is the most common form of in situ SCC. The prognosis is generally good; however, 5-10% will progress to invasive SCC. SCC arising within Bowen's disease may be aggressive. It presents as a red scaly plaque.

Management

Curettage and diathermy or cryotherapy is the treatment of choice. Surgical excision is not usually required.

Figure 3: A basal cell carcinoma showing the typical pearly appearance, telangiectasia, raised rolled edge and central ulceration.

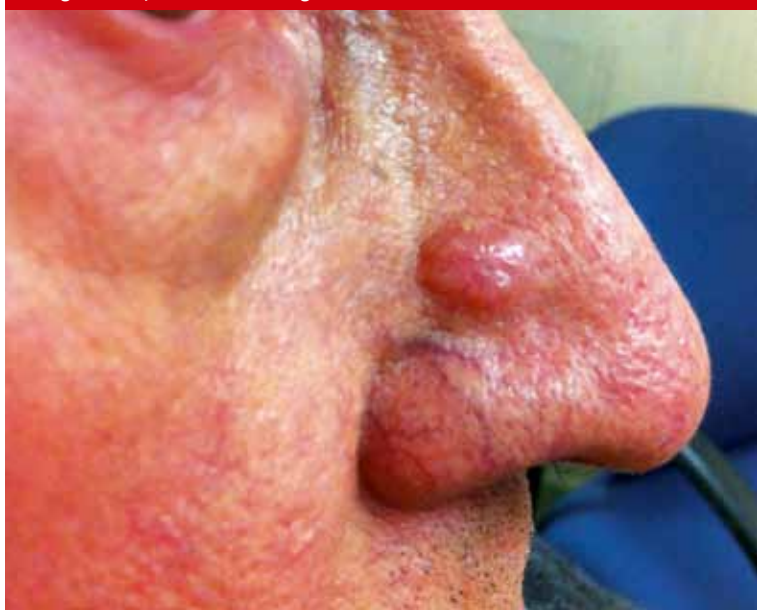
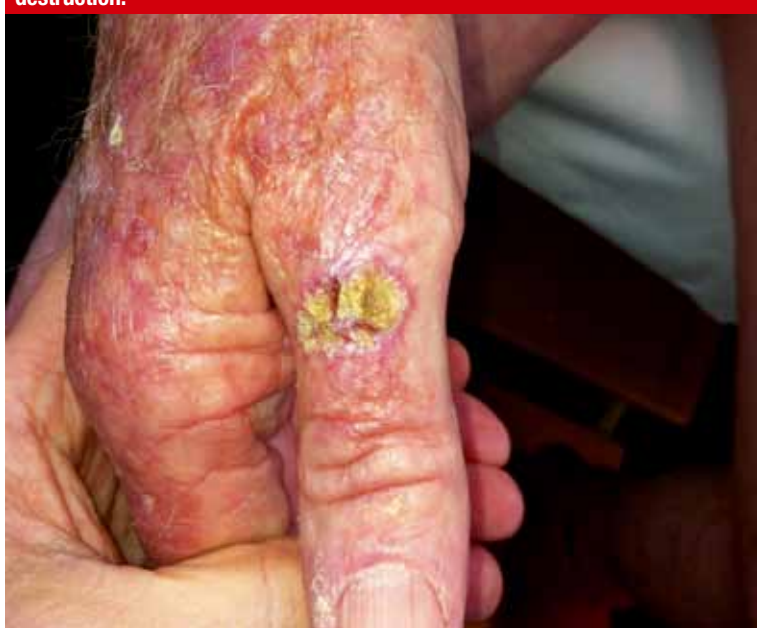


Figure 4: Squamous cell carcinoma showing gross ulceration and tissue destruction.



Guidelines for excision margins for melanoma

- Melanoma in situ (restricted to epidermis) — margin 5mm
- Melanoma <1.5mm thick — margin 1cm
- Melanoma 1.5-4mm thick — minimum margin 1cm and maximum 2cm
- Melanoma >4mm thick — minimum margin 2cm and maximum 3cm

The depth of excision should equal the lateral margin where possible, but there is no need to excise beyond the deep fascia. Radiotherapy has a role in primary melanoma management in selected cases (eg, unresectable tumours and lentigo maligna if surgery is contraindicated). It may also be used as adjuvant therapy postoperatively. Management of metastasis requires referral to a melanoma unit or oncologist.

Melanomas

Melanomas are malignant tumours derived from melanocytes. The most common site of involvement is the skin, although occasionally primary melanoma develops in other organs (eye, oronasal mucosa, vulval and anorectal mucosa). Melanomas are a major cause of premature death from cancer.

Recognised risk factors include personal or family history of melanoma, large numbers of naevi and/or dysplastic naevi, giant congenital melanocytic naevi, fair complexion, a tendency to sunburn, solar-damaged skin, a history of non-melanoma skin cancer and immunodeficiency.

The most common sites for melanoma are the legs of women and the backs of men (which are not the sites of greatest sun exposure). Early detection is associated with improved survival.

Any malignancy will grow irregularly and function abnormally. A melanoma produces pigment in abnormal amounts and elicits an immune response that will be reflected in the clinical appearance. A small but significant number of melanomas are undiagnosable clinically. A history of change may be the only clue to the correct diagnosis.

Superficial spreading melanoma is the most common type of melanoma, usually presenting as an irregularly pigmented macule.

Nodular melanomas are aggressive tumours with an invasive growth pattern and can grow rapidly over weeks. They vary in colour from black through red to amelanotic, and frequently defy the ABCD rule. The mnemonic EFG, standing for 'elevated', 'firm' and 'growing for more than one month', may be more relevant for nodular melanomas than the ABCD rule. They can be pedunculated. Often they are mistaken for a haemangioma or a pyogenic granuloma.

Acral lentiginous melanoma is the most common form of melanoma in dark-skinned people. These are seen on the palms, soles or nail bed. Lentigo maligna (Hutchinson's melanotic freckle) is seen mostly on the face in sun-damaged elderly patients. They are a type of in situ melanoma that often has a long delay before becoming invasive. Patients will often be aware of these irregular, brown-to-black facial macules for many years. As such, they can be quite large at presentation even though still restricted to the epidermis. Distinction from benign lentigos may be impossible without histology.

Both invasive melanoma or lentigo maligna melanoma can sometimes complicate benign lentigos. Invasion can develop rapidly, so excision is usually advised.

Desmoplastic melanoma is a rare and aggressive subtype of melanoma.

Amelanotic melanoma is the most difficult to diagnose clinically. It may present as a pink nodule or patch on the skin. On dermoscopy, a pigment network may be visible in some areas, but many are devoid of pigment.

Management

Where a diagnosis of melanoma cannot be confidently excluded on clinical grounds, the lesion should be excised or the patient referred for specialist opinion. Complete excision of the suspicious lesion with a 2mm lateral margin, down to fat, is recommended.

Sample a lesion by punch or shave biopsy only if complete excision is difficult (eg, a large, facial pigmented lesion) because a biopsy may not be representative of the lesion as a whole, and it also alters the clinical appearance.

The initial excision of a suspicious pigmented lesion is a diagnostic procedure. It is done to exclude or confirm melanoma. Thus a benign histology does not mean that the procedure was unnecessary.

If histology proves the lesion to be a melanoma then definitive surgical excision is needed. This should be explained to the patient before the initial excision.

Recommended excision margins are under constant review. The main determinant is the tumour thickness, but recommended margins may also vary with anatomical site, patient, specific melanoma subtypes and histological features.

Benign skin lesions

STRATEGIES for removing benign skin lesions include chemical and thermal cautery, curettage with or without cautery, shave excision, snip excision, liquid nitrogen cryosurgery, fine-wire diathermy, and simple incision and expression of cysts and abscesses.

The preferred treatment options are shown in table 3 (page 30). The surgical techniques required are beyond the scope of this article.

Choice of method is influenced by the nature of the lesion, anatomical site and patient factors, including skin colour (cryosurgery is unsuitable for dark skin because of the risk of persistent depigmentation), propensity to unsightly or keloid scarring, and patient preference.

Solar keratoses

These develop in sun-damaged skin and occur with increasing frequency with age. They are closely related to skin type. They have a higher incidence in outdoor workers, pale-skinned individuals living in tropical climates and sun-worshippers. Their appearance is a sign of overexposure to the damaging effects of solar radi-

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ation in susceptible individuals.

These lesions are pre-malignant. Transformation into invasive SCC occurs at a rate of 1% per year, though the rate is much greater in immunocompromised patients.

More important than the risk of an individual lesion turning into an invasive SCC is the fact that solar keratoses are markers of solar damage and persons are at risk of developing BCC, SCC or melanoma elsewhere on their skin. A complete skin examination is therefore essential.

Management

The individual lesion may be flat and irregularly shaped with an adherent scale; some may develop a thick keratinous plaque or even a cutaneous horn (figure 5).

To distinguish solar keratosis from SCC or BCC, it is useful to remove any surface scale to inspect the base of the lesion. The remainder of the sun-exposed skin may show solar elastosis or lentigines with increased wrinkles and a general dryness and thickening. This is described as 'field change'. The patient should be warned of the risks of further sun exposure and advised on early detection of skin cancer.

Treatment depends on the thickness of the lesion, and the number and cosmetic appearance of the lesions. Thin, non-suspicious lesions may be observed, but if treatment is required, keratolytics such as 5% salicylic acid in aqueous cream, cryosurgery, curettage or 5-fluorouracil cream are all acceptable. Thicker lesions usually require cryosurgery. Those with clinical features of transformation should be biopsied. Multiple thinner lesions are best treated with 5-fluorouracil cream or cryosurgery.

Seborrhoeic keratoses

These are benign epidermal tumours that occur with increasing frequency with age. They are almost always multiple and have a characteristic 'stuck on' appearance (figure 6). They vary from flesh-coloured, through a range of browns, to a dark, almost black appearance. If scratched, they appear waxy.

Management

The main reason for operative intervention is to confirm the diagnosis and to exclude malignancy, or because the patient is unhappy with the appearance or feel of the lesions.

Cryosurgery, shave excision, electrodesiccation, or curettage and cautery are all acceptable treatments. I prefer gentle curettage and chemical cautery for larger lesions and cryosurgery for smaller ones.

Sebaceous hyperplasia

In this condition, each lesion consists of a small collection of sebaceous glands around a central follicle.

They are papular, umbilicated lesions, usually less than 6mm in size with an off-white to yellow appearance (figure 7). They are more common with advancing age and occur in areas with a high concentration of sebaceous glands, such as the nose, forehead and cheeks.

Sebaceous hyperplasia may be difficult to distinguish from a small BCC, and in such cases biopsy is indicated. They are benign and do not otherwise require treatment, though lesions may respond to cryosurgery or fine-wire diathermy, if a patient wishes them treated.

Table 3: Preferred treatment options for benign skin lesions

	Treatment				
Condition	**Curettage**	**Shave**	**Excision**	**Cryosurgery**	**Special considerations**
Seborrhoeic keratosis	++	++	X	++	R
Viral wart	+	–	X	++	R, or topical treatment with salicylic or lactic acid
Skin tags					
• Narrow neck	X	++	X	+	R, snip excision, treatment with cautery as 'hot scalpel'
• Wide neck, fibro-epithelial polyp	–	++	X	–	R, treatment with cautery as 'hot scalpel'
Dermatofibroma (histiocytoma)	X	X	–	–	R, once the diagnosis is explained to patients they are usually satisfied with no treatment
Pyogenic granuloma	++	++	+	++	Cryosurgery should be performed only when there has been prior histological confirmation of the diagnosis
Cherry angioma (Campbell de Morgan spot)	X	X	X	+	R, fine-wire diathermy is the treatment of choice if intervention is required
Venous lakes	X	X	–	++	R
Lipoma	X	X	++	X	R
Epidermoid cyst	X	X	++	X	R
Milia	X	X	X	X	R, if treatment is required puncture and expression
Sebaceous hyperplasia	–	X	–	X	R, excision biopsy if clinical suspicion of basal cell carcinoma. Fine-wire diathermy is effective
Solar keratosis	+	+	–	++	R, 5-fluorouracil cream, excision of thick lesions with active base indicated to exclude malignant transformation
Naevus					
• Non-pigmented	X	++	+	X	R
• Pigmented, benign — raised	X	++	+	X	R
• Pigmented, benign — flat	X	+	+	X	R, shave or excision not usually necessary if benign diagnosis confident — resultant scar may have worse appearance than the lesion
• Hairy, benign	X	X	++	X	R, shave excision may leave some of the mole and hair follicles behind
• Suspicious or changing	X	–	++	X	Specialist referral is ideal when the cosmetic outcome is important. Accurate clinical diagnosis may negate the need for biopsy in over 50% of cases
Keloid	X	X	X	–	Principal treatment is intralesional injection of steroid. Specialist referral if indicated
Chondrodermatitis nodularis chronica helicis	–	–	++	–	R, sculpture of the underlying damaged cartilage to remove rough edges

++, acceptable treatment (preferred); +, acceptable treatment, second choice; –, treatment not usually used for this lesion; X, not acceptable; R, reassurance of patient is a viable alternative to treatmen

Figure 5: Solar keratosis.

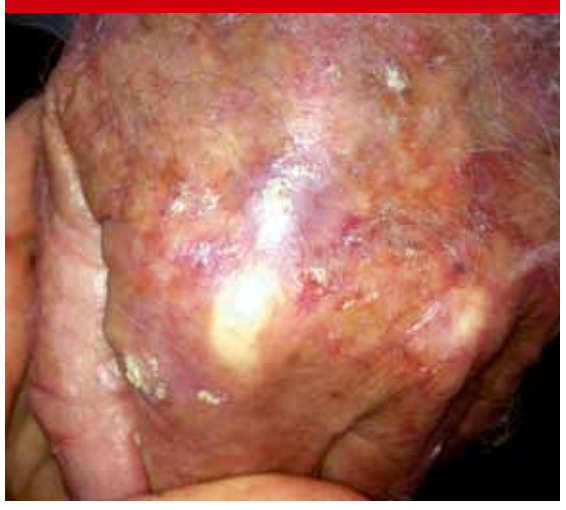


Figure 6: Seborrhoeic keratosis. Note the 'stuck on' appearance.

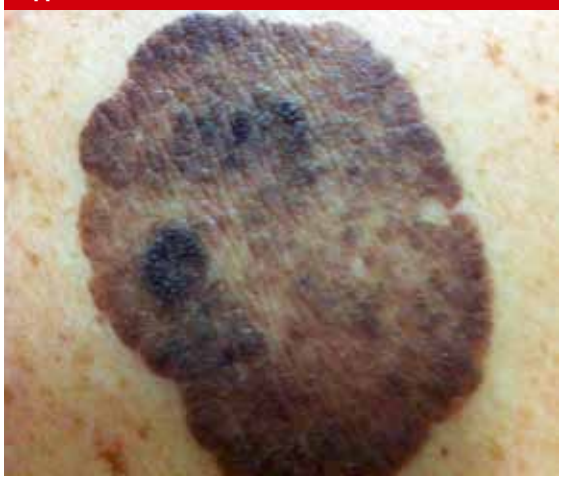
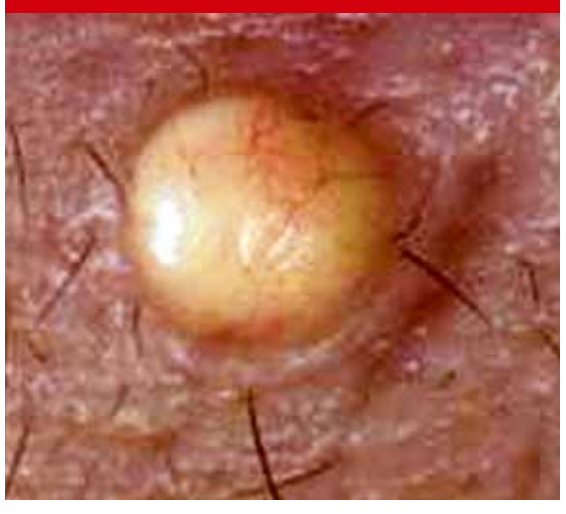


Figure 7: Sebaceous hyperplasia. Note the white/yellow waxy lesion.

Figure 8: Milia.



Milia

Milia are small lesions (1-3mm) with a white papular appearance (figure 8). They are small cystic structures that either connect directly to the skin surface or arise within a sweat duct or hair follicle. They commonly occur on the face in patients of any age and are benign.

Surgical treatment is indicated only for cosmetic reasons. The least invasive technique is to puncture the overlying skin with a sterile needle, and express the contents and the cyst wall using a comedone extractor, if available, or digital pressure.

Dermatofibroma

This is a benign dermal tumour. Most cases are solitary, although multiple lesions may occur. They are more common on the lower limbs, with women more likely to be affected than men. There is sometimes a history of minor trauma or an insect bite followed by the rapid growth of the tumour to its usual size of 5-10mm.

Examination of the lesion reveals a hard nodule attached to the overlying skin, which may exhibit a brown discolouration (figure 9). The tumour consists mainly of collagen, which is tightly packed and gives the tumour its characteristic 'hard' feel.

The tumour may extend through the dermis and into the subcuticular fat but is unattached to underlying fascia. If the lesion is compressed, there is a dimpling of the skin over the lesion.

Reassurance is usually all that is required. If the lesion itches or is tender, however, the patient may request removal. As the lesion is present through the thickness of the dermis, surgical treatment involves excision of the lesion down to the subcutaneous fat layer. Only a small lateral margin is required.

Pyogenic granuloma

This is a common vascular tumour that usually presents as a 5-10mm soft, friable, bleeding papule 5-10mm in size (figure 10).

There is often a history of preceding minor trauma followed by a rapidly growing lesion that bleeds easily. It comprises mainly granulation tissue covered by a flattened epidermis. The capillary network of the granulation tissue is prominent, which explains its coloration and ease of bleeding.

Management

The treatment of choice is curettage and cautery. However, it is very important to obtain histopathological confirmation of the diagnosis, because a rapidly growing nodular malignant melanoma may resemble a pyogenic granuloma.

The recurrence rate following curettage is low. Recurrent lesions, where the diagnosis has previously been histologically confirmed, may be treated with cryosurgery.

Viral warts

These occur on any area of the skin, as well as on mucous membranes. The causal agent is the human papillomavirus, many subtypes of which have now been identified. Many warts involute spontaneously within a period of about two years, but some may persist even after vigorous treatment.

Verruca vulgaris (common wart) presents as a firm hyperkeratotic nodule more commonly on the hands, although it may occur anywhere on the skin (figure 11). Some patients may accept reassurance alone. If treatment is requested, topical paints such as salicylic acid are first-line. If these do not work, cryosurgery is effective, though multiple treatments, usually three weeks apart, may be required.

Verruca plana (flat or plane wart) presents as a slightly elevated smooth papule, 1–3 mm in size. They are usually multiple and occur preferentially on the dorsum of the hands and on the face. Treatment can be difficult. Topical skin irritants such as retinoid creams may be tried. Paints are difficult to apply precisely because the warts are very small. Ultimately, these lesions resolve spontaneously without scarring, and thus reassurance is often the best treatment.

Verruca plantaris (verruca) occurs on the soles of the feet and is common at points of pressure, such as the ball and heel of the foot. The area of skin affected appears thickened, with black dots (thrombosed capillaries) apparent beneath. They are often painful, due to the effect of the thickened epidermis on the pressure points of the foot. Treatment is as for common warts, but it is helpful to pare away the thickened epidermis before application of paints or cryosurgery. Many lesions are difficult to treat, and without treatment most lesions persist for years.

Condylomata acuminata (genital warts) occur on the genital area, anus and perineum. They may be treated by cryosurgery, snip excision, podophyllin paint or imiquimod cream. These lesions may be pre-malignant and it is therefore important to emphasise the importance of regular cervical Pap smears to affected women and partners of affected men, even if they are asymptomatic.

Skin tags

Skin tags (acrochordons) are common lesions that occur more frequently with advancing age and are more prevalent in overweight persons. They may occur on any skin surface, but are more common in the axilla, around the neck and in the groin. Larger similar lesions are termed fibro-epitheliomatous polyps.

Both lesions are fibromas with a connective tissue stalk and a hyperkeratotic dermis. Treatment is by snip excision, cryosurgery or cautery excision.

Figure 9: Dermatofibroma.

Figure 10: Pyogenic granuloma is a rapidly growing vascular tumour.

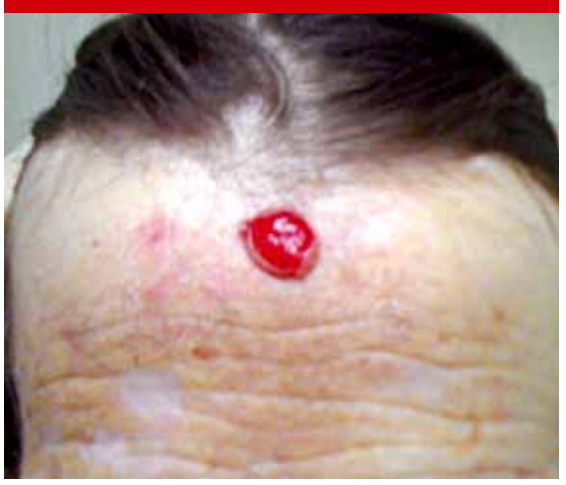


Figure 11: Verruca vulgaris (or common viral wart).

Figure 12: Chondrodermatitis on the helix of the ear.

Figure 13: Keloid scarring secondary to acne.

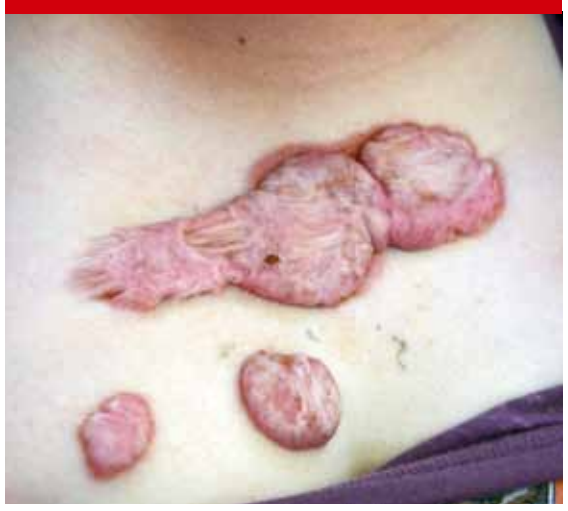
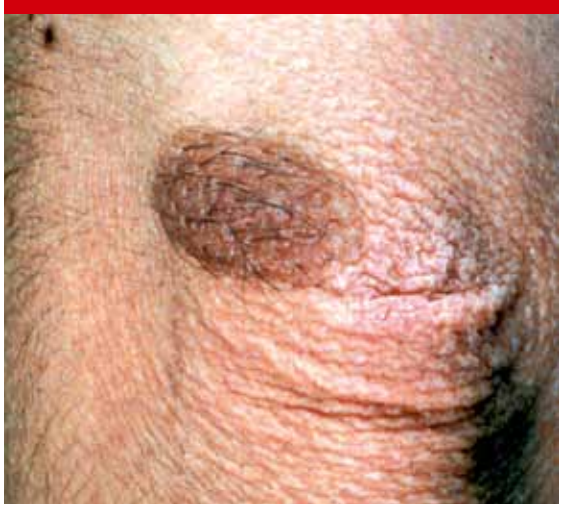


Figure 14: A congenital naevus.



Chondrodermatitis nodularis chronica helicis

Chondrodermatitis nodularis chronica helicis is characterised by a painful nodule, most commonly on the helix of the ear (figure 12). The patient complains of pain when pressure is exerted on the area, for example when trying to sleep. The condition most frequently affects males over the age of 40. There may be a history of outdoor work or exposure to cold.

Lesions occur less commonly on the tragus or antihelix. The lesion tends to be oval, inflamed and appears fixed to the underlying cartilage. The cause of this lesion is unclear but it has been postulated that relatively poor circulation to the cartilage predisposes it to pressure necrosis during sleep.

Attempted extrusion of the necrotic cartilage through the skin leads to an overlying inflamed nodule. Most lesions will resolve if the patient can be persuaded to sleep on the other side. Special pillows to alleviate local pressure are available and may also help.

Management

Intralesional injection of triamcinolone has a 20-30% success rate and is worth a try. Surgical excision of the nodule will lead to recurrence unless any irregularity of the cartilage is smoothed out. Some skin surgeons recommend the use of cryosurgery, particularly in early small lesions.

Hypertrophic scarring and keloids

These are caused by a proliferation of fibrous tissue in damaged skin as a result of surgery, immunisation, acne (figure 13), etc. Wound infection and dehiscence of surgical scars predispose to healing with hypertrophy. Keloids may occur at any site, but is more common in the upper body. The reaction tends to be more vigorous in the young and those with pigmented skin. The lesions are firm and may be slightly tender or itchy; they are raised from the skin and may grow beyond the boundaries of the initial skin insult. Previous keloid scar indicates a susceptibility to the formation of further keloid in wounded skin, and cosmetic surgery should be avoided in patients with a history of keloid.

Management

Standard treatment for both hypertrophic scarring and keloids is intralesional steroid injection, which usually needs to be repeated at six-weekly intervals on a few occasions. Laser therapy, cryosurgery or surgical excision of scars is also widely practised, but outcomes are unpredictable. The best results are achieved by clinicians with an interest in the area.

Melanocytic naevi

Acquired melanocytic naevi (moles) are localised collections of melanocytes in the dermis and epidermis.

Junctional naevi are lesions in which melanocytes are confined to the epidermis and dermo-epidermal junction. These are usually flat pigmented macules.

Compound naevi have melanocytes at both the dermo-epidermal junction and deeper in the dermis. These are raised, pigmented papules.

Intradermal naevi have melanocytes only within the dermis and have no associated epidermal or junctional component. These are non-pigmented papules.

Most moles are induced by sunlight in people predisposed to their development. The risk of a benign mole turning into a melanoma is very low and prophylactic excision to prevent malignant transformation is not recommended. However, large numbers of moles, both common acquired and dysplastic naevi, are markers of increased risk for the development of melanoma elsewhere on the skin.

Congenital naevi are not always visible at birth. Many become apparent only in the first year of life (figure 14). They can be classified into small- (<1.5cm), medium- (1.5-20cm) or large- (>20cm) diameter naevi. Incidence in Caucasians is about 1%. Most lesions are small, with giant congenital naevi affecting only one in 500,000 births. Melanoma may develop in congenital naevi. The lifetime risk of melanoma arising in a large congenital naevus is controversial, but is probably 4-6%.

The risk associated with small and medium naevi is negligible and routine excision of all congenital naevi to prevent melanoma development is not recommended.

Dysplastic naevi (atypical mole) are 10mm or more in diameter, irregular in outline, a haphazard mixture of tan, black and pink, flat with a small palpable dermal component and strikingly variable. An erythematous margin is common. In short, they look like melanomas.

If any clinical doubt exists about the nature of an individual lesion, an excisional biopsy should be performed or the patient should be referred for a dermatological opinion. The term 'dysplastic' is a misnomer, as histological dysplasia is not always present and is not required for a diagnosis.

Dysplastic naevi are commonly familial and in some families are markers of increased melanoma risk. Even in families without melanoma, dysplastic naevi are an independent risk factor for development of melanoma elsewhere on the skin. If a patient presents with one or more dysplastic naevi, the entire skin surface should be examined carefully.

The patient should be given advice about early detection of skin cancer and how to minimise the harmful effects of sun exposure. In patients with multiple lesions or a family history of melanoma, baseline clinical photographs should be taken to help identify changes in existing moles or detect new ones.

Suspicious moles should be biopsied where appropriate. Review arrangements are a matter for the individual clinician; however, high-risk patients should be followed up for their lifetime.

Acquired naevi are very common. A patient may request the removal of a naevus for cosmetic reasons, because it is catching in clothes or jewellery, or because of a change within it. The most appropriate surgical management is shave excision or excision and primary closure. The former may, however, leave behind some pigment and hair follicles, but conversely may result in a superior scar.

All moles should be sent for histology. As well as detecting an occasional banal-looking melanoma, it may also avoid the risk of litigation at a later stage if a patient develops metastatic melanoma with an undetected primary lesion. Even if the metastases were unrelated to the lesion excised, this would be impossible to prove without histology.

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Summary

WHEN performing a skin check it is important to undress the patient down to their underwear and systematically examine their entire skin surface. It is important to make an assessment of each lesion. Simply put, there are only three possible diagnoses for a skin lesion: clearly malignant, clearly benign and too close to call.

If you are 100% sure that the lesion is a skin cancer, then arrange for it to be removed. Each GP knows the limits of their surgical skill and should refer as necessary.

If there is a specific diagnosis and you are certain that the lesion is benign, then no treatment is required. However, if you are only 99% sure that the lesion is benign, a definitive diagnosis is required. Options include diagnostic biopsy, excisional biopsy or referral to a dermatologist.

Access to specialists varies and patients usually find it disconcerting to wait weeks or months for a definitive diagnosis for a "suspicious lesion". Hence, GPs often excise lesions they feel are low (but not zero) risk. Consequently the number of lesions needed to be excised for every skin cancer removed is about 20 for melanoma and three for non-melanoma skin cancer.

The aim of this article is to facilitate diagnosis of both malignant and benign skin lesions, to increase diagnostic accuracy and to reduce the biopsy rate for benign skin lesions.

Rapid-access clinics have been shown to reduce melanoma mortality and skin cancer morbidity. These clinics are available in select locations around the country. Diagnostic biopsies and simple procedures are generally performed on the same day. No lesion is too trivial.

Key points: lesion identification and management

- Accurate clinical diagnosis is essential to ensure adequate surgical margins in the excision of malignant lesions and minimisation of margins in the removal of benign lesions.
- Biopsy is very useful if the diagnosis is uncertain.
- Basal cell carcinoma (BCC) is the most common skin cancer and is usually slow-growing; metastasis is extremely rare.
- Squamous cell carcinoma grows more rapidly than BCC and should be treated as soon as is reasonable after diagnosis; surgical excision is the treatment of choice.
- Early detection of melanomas is associated with improved survival; a history of change may be the only clue to the correct diagnosis.
- Actinic (solar) keratoses, dysplastic naevi and large numbers of naevi are all risk factors for malignant lesions elsewhere; a complete skin examination is essential in patients with these lesions.
- Condylomata acuminata (genital warts) may be pre-malignant, so the importance of regular Pap smears should be emphasised to affected women and partners of affected men, even if they are asymptomatic.

How to Treat Quiz

Skin cancer and benign lesions — 7 September 2012

INSTRUCTIONS

Complete this quiz online and fill in the GP evaluation form to earn 2 CPD or PDP points. We no longer accept quizzes by post or fax.

The mark required to obtain points is 80%. Please note that some questions have more than one correct answer.

ONLINE ONLY

www.australiandoctor.com.au/cpd/ for immediate feedback

1. Which TWO statements about the epidemiology of non-melanoma skin cancers are correct?

a) Non-melanoma skin cancer is increasing at much the same rate as other cancers
b) Melanoma is more common than non-melanoma skin cancer
c) Basal cell carcinomas are the most common form of non-melanoma skin cancer, and twice as common as squamous cell carcinomas
d) Though most non-melanoma skin cancers occur in people aged 60 and over, there is mounting evidence that non-melanoma skin cancer occurring at an early age is a marker of a cancer-prone phenotype

2. Which TWO statements about the management of BCCs are correct?

a) Lesions at high risk of recurrence and/or those arising at sites such as the eyelid or centrofacially warrant simple surgical excision with a margin of 1mm
b) Curettage and cautery, and cryosurgery are simple techniques that can be widely used by all practitioners on most BCC subtypes
c) Topical imiquimod has been shown to achieve histological clearance of superficial BCCs, but the 10-year cure rates are not yet known
d) Photodynamic therapy, which involves application of porphyrin-containing cream followed by intense light, is suitable for selected BCCs, actinic keratosis and Bowen's disease

3. Which TWO statements about squamous cell carcinoma are correct?

a) SCCs tend to occur on heavily sun-exposed areas, with metastatic disease most likely to develop from ear, lower lip and scalp lesions
b) Surgical excision is the only appropriate treatment for SCC — there is no role for curettage and diathermy
c) Radiotherapy has a role in treating primary SCCs where surgery is unsuitable or carries a risk of severe scarring; following excision of a high-risk tumour; and in treating metastatic SCC
d) Patients with primary SCC should be followed up with routine radiological, biochemical and haematological screening; 12-monthly for at least two years after the primary tumour excision

4. Which TWO statements about melanoma are correct?

a) Although risk factors for melanoma include sun-related factors such as a tendency to sunburn and sun-damaged skin, the most common sites for melanoma are generally not the sites of greatest sun exposure
b) Most melanomas can be diagnosed based on clinical features, but in some cases, a history of change may be the only indication of the diagnosis
c) All melanoma types can be reliably diagnosed using the ABCD rule
d) A punch biopsy is recommended as initial investigation of a suspicious pigmented lesion

5. Which TWO statements about solar keratoses are correct?

a) Though solar keratoses are a marker of sun damage and so indicate an increased risk of BCC, SCC or melanoma elsewhere in the skin, they do not transform into malignant lesions themselves
b) Solar keratoses can mimic SCC and BCC, and removal of any surface scale to allow inspection of the base of the lesion can be useful to differentiate between them
c) All actinic keratoses should be treated with keratolytics, cryosurgery, curettage or 5-fluorouracil cream
d) 5-fluorouracil cream or cryosurgery is most appropriate for multiple thinner lesions

6. Which TWO statements about sebaceous hyperplasia and milia are correct?

a) Sebaceous hyperplasia occurs as a result of collection of sebaceous glands around a central follicle, so it tends to occur in sites with many sebaceous glands, such as the nose and cheeks
b) Sebaceous hyperplasia is difficult to confuse with any other condition clinically and is benign, so biopsy is never warranted
c) Milia are small cystic structures that either connect directly to the skin surface or arise within a sweat duct or hair follicle
d) Surgical treatment of milia is warranted only for cosmetic reasons, in which case incision and drainage is the least invasive technique

7. Which TWO statements about dermatofibromas and pyogenic granulomas are correct?

a) Dermatofibromas most commonly present as multiple lesions on the upper limbs of males
b) A characteristic feature of dermatofibroma clinically is dimpling of the skin overlying the lesion when it is compressed
c) Pyogenic granulomas are vascular tumours that may resemble nodular melanoma, so histopathological confirmation must be obtained
d) Pyogenic granulomas often recur, and when they do, warrant histological confirmation to exclude sinister causes

8. Which TWO statements about viral warts are correct?

a) Common warts (verruca vulgaris) are most commonly seen on the extensor surfaces of the arms and legs
b) Flat or plane warts (verruca plana) are often difficult to treat and treatment resistant and, as they will eventually resolve without scarring, reassurance may be the best treatment option
c) Plantar warts (verruca plantaris) are often painful due to the thrombosed capillaries within them
d) Genital warts (condylomata acuminata) may be pre-malignant, so affected women and partners of affected men should be encouraged to have regular Pap smears, even once clinical warts resolve

9. Which TWO statements about chondrodermatitis nodularis chronica helicis, and hypertrophic and keloid scarring are correct?

a) Chondrodermatitis nodularis chronica helicis, characterised by a painful nodule on the helix of the ear, is postulated to be due to relatively poor circulation to the cartilage resulting from pressure necrosis during sleep
b) Sleeping on the opposite side, pillows and intralesional steroids may all lead to resolution of chondrodermatitis nodularis chronica helicis
c) Keloid scars tend to be more common on the lower limbs of older patients with non-pigmented skin, and restricted to the site of the original skin insult
d) Standard treatment of hypertrophic and keloid scars is surgical excision

10. Which TWO statements about melanocytic naevi (moles) are correct?

a) Though the risk of a benign mole transforming into a melanoma is low, large numbers of moles are markers of an increased risk for the development of melamona elsewhere in the skin
b) Congenital naevi are always visible at birth and never develop into melanomas
c) Histological dysplasia is always present in dysplastic naevi and is required for diagnosis
d) If cosmetic removal of benign-looking acquired naevi is requested, it is important to choose an excisional method that not only gives cosmetically satisfactory results, but also yields a specimen to send for histopathology

CPD QUIZ UPDATE

The RACGP requires that a brief GP evaluation form be completed with every quiz to obtain category 2 CPD or PDP points for the 2011-13 triennium. You can complete this online along with the quiz at **www.australiandoctor.com.au.** Because this is a requirement, we are no longer able to accept the quiz by post or fax. However, we have included the quiz questions here for those who like to prepare the answers before completing the quiz online.

Australian Doctor Education

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NEXT WEEK Iron deficiency is the most common cause of anaemia in the world, affecting more than two billion people. The next How to Treat looks at the symptoms, causes and treatment of this condition. The author is **Dr Anastazia Keegan**, haematology advanced trainee at Royal Prince Alfred Hospital, Camperdown, and Concord Hospital, Concord, and **Dr Judith Trotman**, senior staff specialist, haematology, Concord Hospital and senior lecturer, University of Sydney, NSW.