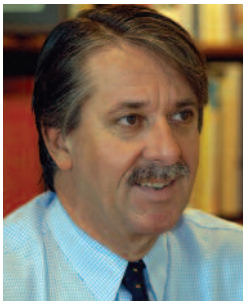
Benign skin tumours
a guide to assessment and treatment

Every person has a benign skin tumour of one sort or another. People are prone to worry about such lesions and will seek reassurance from their GPs about the nature of them. Most benign skin tumours do not need to be biopsied or treated.



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More than 50 benign skin tumours are classified in the *World Health Organization Classification of Tumours*.[1] These fall into the following six major categories:

- keratinocytic tumours
- melanocytic tumours
- appendage tumours
- haematolymphoid tumours
- soft tissue tumours
- neural tumours.

A comprehensive discussion of these tumours is beyond the scope of this article, which instead focuses on those lesions seen most often in practice and whose differential diagnosis includes malignancy (Table). These 'impostors' can cause significant anxiety to the clinician and skin biopsy or referral of the patient may be undertaken unnecessarily. A few other common nodular skin lesions that are not neoplasms are also described.

Keratinocytic tumours

Seborrhoeic keratosis

Seborrhoeic keratosis is a benign tumour of the epidermis, present in most older people and very common in Caucasians. The lesions vary widely in clinical appearance, having many different colours and hues, but most are warty. They may be large (greater than 2 cm in diameter) or small, and they may have features suggestive of melanoma or squamous cell carcinoma if they have been irritated and inflamed (Figure 1).

Seborrhoeic keratoses may occur at any body site except the palms and soles and are most common on the back. In women they are common between the breasts and in the submammary

IN SUMMARY

- **Benign skin lesions mimicking malignant tumours can cause significant anxiety to both patients and clinicians.**
- **Many benign skin tumours do not need to be biopsied or treated.**
- **Major predictive factors for melanoma include lesion asymmetry and colour variation within a lesion. The finding of a 'blue-grey veil' under examination with a dermatoscope or episcope is strongly suggestive of melanoma.**
- **The recommended standard of care for a suspicious pigmented lesion is an excisional biopsy; partial biopsy samples are often unrepresentative of the lesion as a whole.**
- **Superficial benign lesions can be treated with superficially destructive treatments; deeper lesions need surgical excision.**

Table. Lesions mimicking malignant tumours

Pigmented lesions mimicking melanoma

Naevi
Simple lentigines
Naevoid lentigines
Melanotic macules
Seborrhoeic keratoses
Fibrous histiocytomas
Cherry angiomas (thrombosed)
Venous lakes

Lesions mimicking squamous cell carcinoma

Irritated seborrhoeic keratoses
Pyogenic granulomas
Chondrodermatitis nodularis helicis

Lesions mimicking basal cell carcinoma

Intradermal naevi
Lichenoid keratoses
Sebaceous hyperplasia
Hydrocystomas

fold. Multiple lesions are usually present.

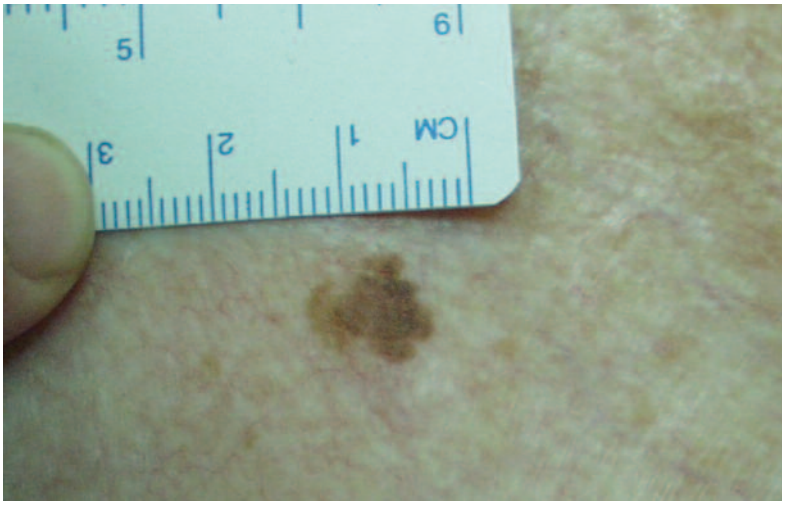
Although the exact cause of seborrhoeic keratoses is unknown, clonal proliferation of epidermal cells is thought to be involved in genetically predisposed individuals.

Destructive methods of removal are usually used to treat these lesions, if requested by patients. Smaller lesions respond to liquid nitrogen cryo - therapy, but thicker and larger lesions are best removed under local anaesthesia by light cautery and then wiping off the lesion with gauze or by gentle curettage. Healing occurs by granulation, which takes two to three weeks depending on the size and site of the lesion.

Clinical variants of seborrhoeic keratosis

Stucco keratosis

Stucco keratosis is thought to be a variant of seborrhoeic keratosis and looks similar histologically. The papules are small, white and rough and often found on the shins, ankles and tops of the feet (Figure 2).



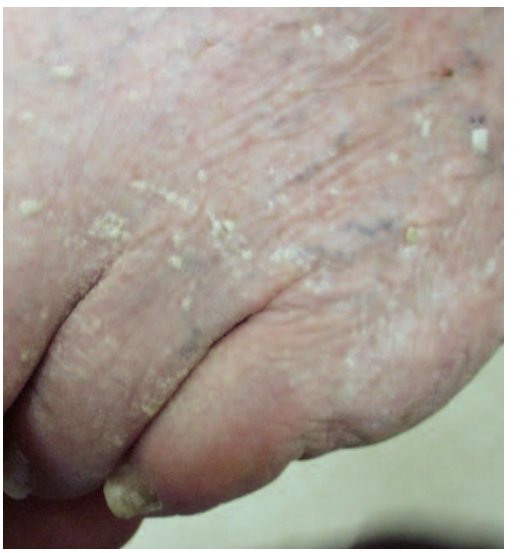


Figure 1 (above). Seborrhoeic keratoses may have features suggestive of melanoma.

Figure 2 (left). Stucco keratoses.

Often stucco keratoses drop off spontaneously, but they can also be removed with the use of strong urea or lactic acid creams marketed as heel balms, followed by vigorous rubbing with a loofah. Regrowth is expected. Cryotherapy is also effective at removing these papules.

Dermatosis papulosis nigra

Dermatosis papulosis nigra is quite common in Asians and can occur in numerous unrelated racial groups (including Australian aboriginals, Polynesians and Africans), the common factor being a darker skin type (skin type 4 or 5).

The papules, most often found on the sides of the neck and face, are about 1 to 3 mm in diameter.

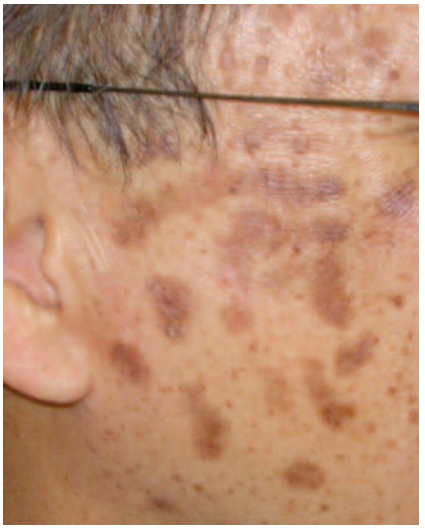


Figure 3. Post-cryotherapy hyperpigmentation in a Chinese man after treatment of dermatosis papulosis nigra.

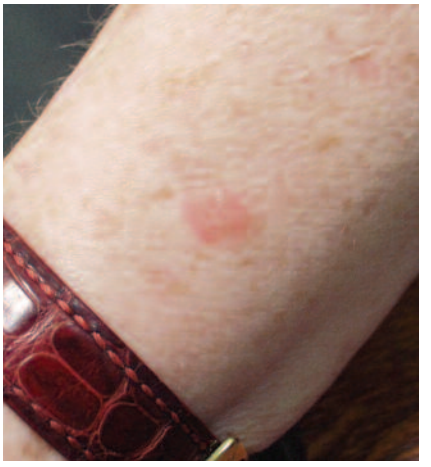


Figure 4. Lichenoid keratosis.

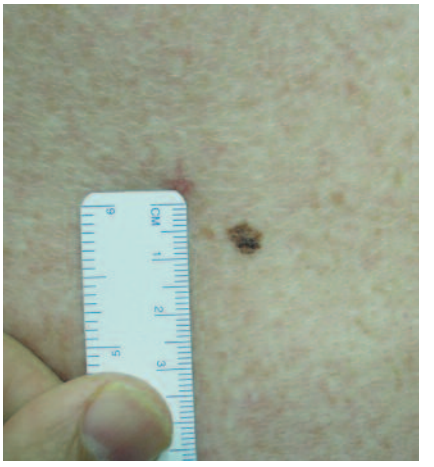


Figure 5. Junctional naevus.

They are symptomless but can be a cosmetic nuisance.

Dermatosis papulosis nigra can be removed by cryotherapy with the forceps grip method or by treatment with trichloroacetic acid or with light hyfrecation on low power without the need for local anaesthetic.

In the first method, a pair of heavy, untoothed forceps (McIndoe or similar) is immersed for a few seconds in liquid nitrogen that has been decanted into a polystyrene cup. The forceps are then used to grasp the lesion for about 5 seconds until the lesion freezes to form an ice ball. Each lesion is treated separately.

In the second method, 70% trichloroacetic acid is carefully painted onto the lesions using a sharpened orange or satay stick. The lesions become necrotic and drop off after a few days.

Post-treatment hyperpigmentation is common (Figure 3). Before treating multiple lesions it is best to treat one or two lesions first on a trial basis and review the patient six weeks later to assess the results.

Lichenoid keratosis

Lichenoid keratosis (or lichen planus-like keratosis) is a benign lesion of the skin thought to evolve from an inflammatory reaction to a solar lentigo or a plane seborrhoeic keratosis. The lesion may erupt suddenly in sun-exposed skin and be itchy, raised and inflamed (Figure 4). Usually the lesion is solitary and may be mistaken for basal cell carcinoma, squamous cell carcinoma or actinic keratosis.

Lichenoid keratoses may settle spontaneously or respond to several weeks' treatment with a topical corticosteroid. The lesions are often treated with cryotherapy, which is effective. It is common for these lesions to be excised because of their resemblance to basal cell carcinomas or early squamous cell carcinomas, but their histological features exclude malignancy.

Melanocytic lesions

Melanocytic naevus

Naevi are collections of naevus cells (naevomelanocytes) that clinically fall into three main categories:

- junctional naevi, which are flat and pigmented and located in the epidermis (Figure 5)
- intradermal naevi, which are raised but with little or no pigment and found in the dermis
- compound naevi, which are raised and pigmented and located in both the dermis and the epidermis.

Naevi can resemble malignant melanoma. Because of publicity and public concerns about malignant melanoma, it is common for patients to request a full skin examination and to ask particularly that their pigmented naevi be checked to exclude malignancy.

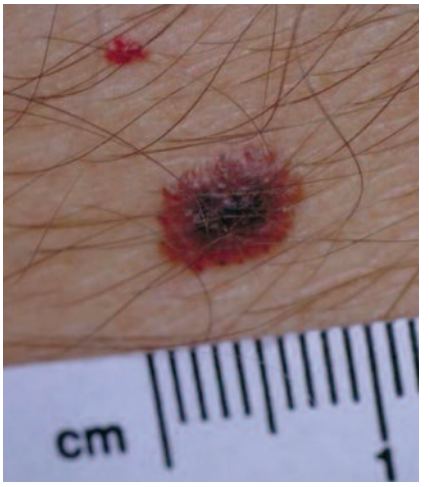
Compound naevus

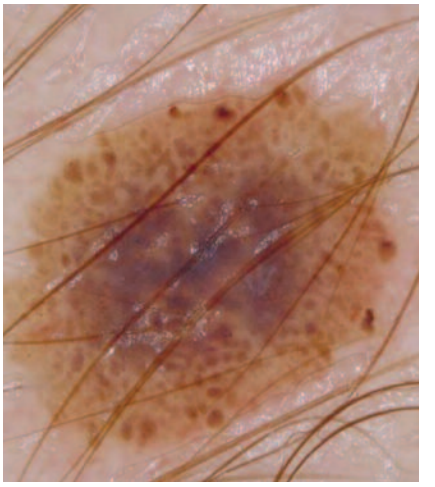
Compound naevi are very common, and the most frequent type of naevus found on the trunk, head, neck and extremities. They are pigmented and slightly raised (Figures 6a and b), and may be congenital or acquired.

Dysplastic naevus

A dysplastic naevus is a type of compound naevus (Figure 7). Large and irregular, these benign lesions are important as markers of melanoma-prone patients rather than as melanoma precursors themselves. The finding of more than five dysplastic naevi is one factor indicating that a patient is melanoma prone. It is possible that these lesions carry the same risk as any compound naevus of developing into melanoma.[2]

Dysplastic naevi do not need to be excised or biopsied. Unfortunately, however, their appearance can sometimes mimic that of melanoma. For a suspicious lesion, an excisional biopsy rather





Figures 6a and b. a (left). Compound naevus. b (right). Same lesion viewed on dermoscopy.

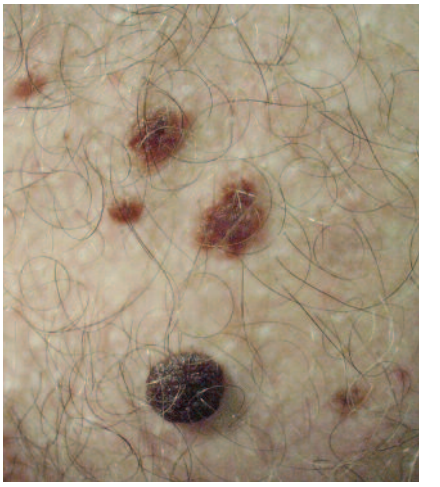


Figure 7. Dysplastic naevi.

than a punch biopsy is recommended. If a small punch biopsy is taken from the lesion, the histopathologist is likely to note architectural disruption and suggest excision of the whole lesion to determine whether a melanoma is adjacent to the biopsy site. In other words, a punch biopsy sample may not be representative of the complete lesion.[3,4]

Blue naevus

A blue naevus is a benign, mostly dermal melanocytic naevus (Figures 8a and b) comprising clumps of melanocytes that are usually separated by thickened collagen bundles. The lesion tends to be less than 1 cm in diameter, dome-shaped and a uniform, slate blue/grey colour (the blue colour being caused by the Tyndall effect – i.e. the scattering of light by the melanin deep in the dermis). Blue naevi are most common on the forearm, hands, lower limbs, scalp and buttocks and may appear in individuals older than 20 years; most other types of naevi have appeared by the time people reach their late teens.

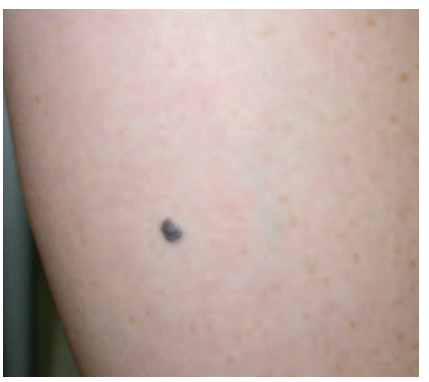
Halo naevus

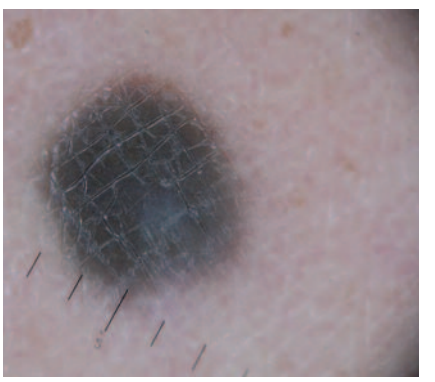
A halo naevus is caused by an immunological reaction to naevus cells. Lymphocytes destroy pigment at the border of the naevus, resulting in a hypopigmented halo (Figure 9). Very exceptionally, halos can appear around melanomas, but the pigmented lesion itself in this situation has the characteristics of a melanoma. Most halo naevi are very regular in shape and pose no risk.

Spitz naevus

Also termed a benign juvenile melanoma, a spitz naevus is a proliferation of large spindle and oval melanocytes, which is most often seen in children and teenagers (Figure 10). The lesion is usually pink but may be pigmented. Spitz naevi tend to regress spontaneously. Incisional biopsies of spitz naevi may present the histopathologist with difficulties as the lesions can display histological features suggestive of melanoma.

Lentigo





Figures 8a and b. a (left). Blue naevus. b (right). Same lesion viewed on dermoscopy. The scale shown is in millimetres.

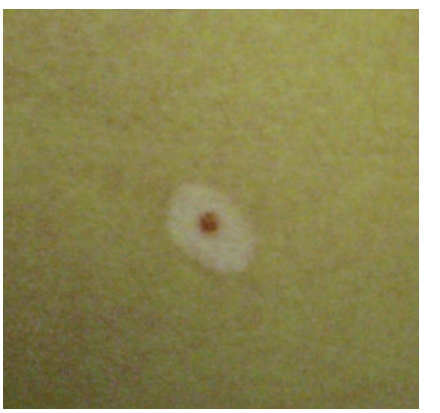


Figure 9. Halo naevus.

A lentigo is a circumscribed pigmented spot consisting of large numbers of epidermal melanocytes.

Simple lentigo

A simple lentigo, also known as a lentiginous melanocytic naevus, has increased numbers of melanocytes along the basal layer with formations of small junctional nests. These lesions are generally regular pigmented macules. Most remain unchanged over time. They have no potential for malignant transformation, although clinically they may mimic an early superficial spreading melanoma.

Solar lentigo

A solar lentigo is a flat, pigmented lesion found especially on the back of the hand, forearms and the face. These lesions are more common in the sun-damaged skin of the middle aged or elderly. They are hyperpigmented but are not a proliferation of melanocytes nor premalignant.

On the face the solar lentigo can mimic lentigo maligna, so when there is pigment irregularity in a lesion, a pretreatment biopsy may be prudent.

Solar lentigines are best removed in one treatment using a Q-switched pigment laser, although cryotherapy can be useful as long as post-treatment hypopigmentation does not ensue. These lesions can also be removed by several treatments with intense pulsed light.

Melanotic macule

A melanotic macule is a type of lentigo. Common in sun-damaged skin and fair-skinned people, especially on the vermilion border of the lower lip (Figure 11), melanocytic macules tend to be brown/black in colour and have irregular borders. They have no premalignant potential.

Patients at risk of melanoma

Major risk factors for the development of melanoma include the presence of numerous naevi, more than five dysplastic or large atypical naevi, and a family or past personal history of melanoma.[5] Naevi numbers increase in proportion to sun exposure during childhood.

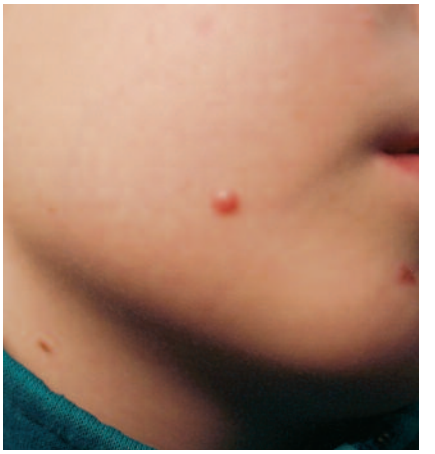


Figure 10. Spitz naevus.

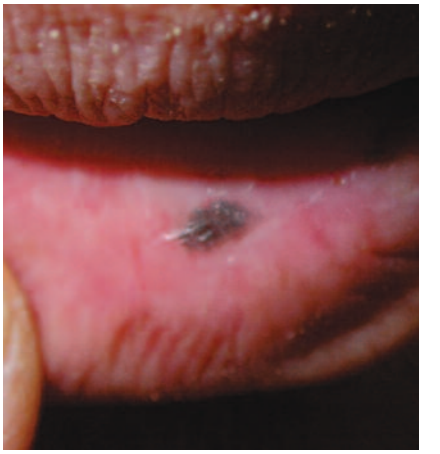


Figure 11. Labial melanotic macule.

It is possible that about 5% of the population fall into the risk categories mentioned above. When patients at risk are targeted for screening, about one melanoma is detected for every 100 patients screened.[5] This compares with the finding in community-based screening programs of one melanoma for every 2000 patients screened in the sunnier States and Territories of Australia, and even lower incidences elsewhere.

Biopsy of melanocytic lesions

The recommended standard of care for suspicious melanocytic lesions is a 2 mm excisional biopsy. If the diagnosis is strongly suspected, wider local excision should be undertaken in the first instance. An incisional biopsy is only recommended for large lesions when excision and direct closure cannot be achieved.

Shave or punch biopsies are rarely appropriate because the sample may not be fully representative of the lesion and can create diagnostic difficulty. Partial biopsies are a significant cause of litigation.[3] One study showed that when the partial biopsied lesion was a melanoma, the Breslow thickness was inaccurate in more than half of the samples.[4]

Appendage tumours

Syringoma

A syringoma is a small benign appendage tumour composed of sweat gland epithelium in a dense stroma. The multiple, small, skin coloured to pale papules, 1 to 3 mm in diameter, are found most often on the lower eyelids (Figure 12). Some forms are familial. Treatment is by destructive means: point electrodessication or ablative laser.

Hidrocystoma

A hidrocystoma is a cystic sweat gland proliferation. Most hidrocystomas are derived from apocrine glands and most are found on the lower eyelid. They may mimic a basal cell carcinoma, but since they are cystic and full of clear fluid they can be incised without the need for a local anaesthetic. Incision can be curative but it is best to deroof the cyst altogether and curette the base under local anaesthesia.

Haematolymphoid tumours

Solitary mastocytoma

Solitary mastocytoma, which presents in young children, is part of the mastocytosis group of disorders. The nodules are pink to tanned in colour and urticate when

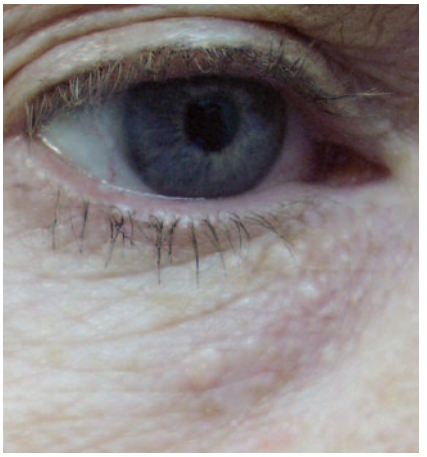


Figure 12. Syringomas.

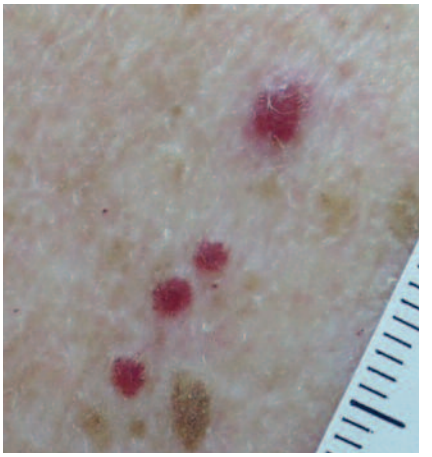


Figure 13. Cherry angiomas.

stroked (the mast cells release histamine and cause vasodilation in the lesion and adjacent to the lesion).

Juvenile xanthogranuloma

Juvenile xanthogranulomas are yellowish nodules that present in children and infants. They may be single or multiple and tend to regress spontaneously with age. They may present as small red/brown to yellowish papules 2 to 5 mm in diameter, or as a nodule form with large 1 to 2 cm domed yellowish shiny nodules and overlaying telangiectasia. They are more common in patients with neurofibromatosis. Sporadic cases are not associated with any metabolic disorder.

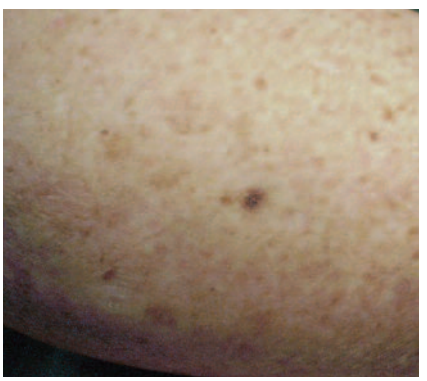
Soft tissue tumours

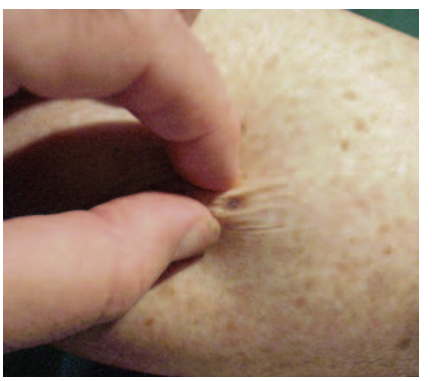
Cherry angioma

Also called Campbell de Morgan spots, cherry angiomas develop after puberty and increase in number and size with advancing age. They consist of a well-circumscribed aggregation of dilated capillaries and venules (Figure 13).

There are no particular systemic associations with cherry angiomas and the lesions are found almost universally in old age.

Treatment is not necessary, but if patients insist, the lesions can be treated by destructive means. Point electrodesiccation under local anaesthesia, vascular laser therapy and cryotherapy are all suitable methods.





Figures 14a and b. (a, left). Fibrous histiocytoma. (b, right). Dimpling when squeezed is a characteristic sign of these lesions.

Pyogenic granuloma

A pyogenic granuloma is a proliferation of blood vessels that in most cases is related to minor trauma to the skin. The lesion presents as a shiny red moist nodule that has a history of bleeding easily. It grows rapidly over several weeks but may regress spontaneously over a few months if left untreated. In adults the lesions must be distinguished from tumours such as squamous cell carcinoma and malignant melanoma.

Commonly used treatments are curettage and electrodesiccation of the feeding vessel at the base. Lesions may also be surgically excised. The curetted or excised tissue must be submitted for histological examination.

Recurrence can occur, even after surgical excision.

Fibrous histiocytoma

Fibrous histiocytoma (dermatofibroma) is very common, presenting as pink to dark brown dermal nodules, often on the limbs. The nodules are composed of spindle shaped and round fibroblasts and macrophages. Patients often report these lesions after minor trauma, such as an insect bite, folliculitis or a scratch; however, the aetiology is not firmly established. Controversy exists about whether the lesions are neoplastic or inflammatory (the latter is favoured by many). The lesions can be tender, and some patients request their removal.

The pigmented lesion of a fibrous histiocytoma can be mistaken for a melanocytic naevus; however, it is firmer than a naevus and will dimple in two planes of palpation. This is a characteristic sign of the fibrous histiocytoma (Figures 14a and b).

Superficially destructive methods such as cryotherapy are ineffective in treating fibrous histiocytomas; excision and direct closure is the favoured method of removal.

Digital mucous cysts

Digital mucous cysts occur most often at

the proximal nail fold (Figure 15). They communicate with the underlying joint cavity in most cases and are similar to ganglion cysts. They may compress the proximal nail fold and cause longitudinal ridging of the nail.

Treatment can be difficult and the lesions can recur. Firm cryotherapy causes the patient a great deal of discomfort but may be useful. Regular pricking to release the viscous fluid within the cyst can set up an inflammatory reaction and cause the cyst to fibrose. Infiltration with triamcinolone (Kenacort) has been advocated; however, the definitive treatment is excision of the cyst by reflecting the proximal nail fold and dissecting the communication with the underlying joint space.

Keloid scars and hypertrophic scars

Keloid scars can occur spontaneously after no apparent injury or result from a trivial injury, such as a scratch or rupture of a tiny acne cyst; hypertrophic scars develop after an injury. Both scar types are disorders of fibroplasia, resulting in the formation of excessive fibrous tissue (Figure 16). Keloid scars can extend beyond the confines of the original wound whereas hypertrophic scars do not.

Treatment of these scars includes corticosteroid injections, silicon gel occlusion, vascular laser therapy, massage and pressure dressings.

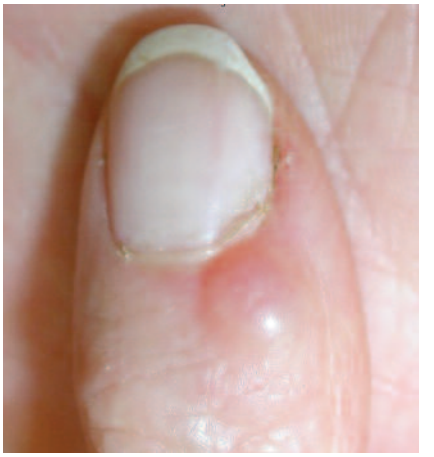


Figure 15. Digital mucous cyst.

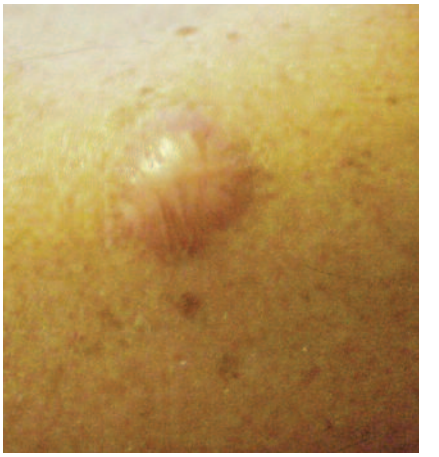


Figure 16. Keloid scar.

Neural tumours

Neural tumours of the skin are relatively uncommon. The palisaded, encapsulated neuroma is one example of a neural tumour. This presents as a firm to rubbery pink papule or nodule, 2 to 6 mm in diameter, often on the face of patients aged 40 to 60 years. There are no systemic associations with these tumours.

Lumps and bumps

Venous lake

Although not a tumour, a venous lake is often mistaken for a melanocytic tumour, especially if the lesion is thrombosed (Figure 17). Venous lakes are common on the lower lip. They are venous vascular spaces that blanch on pressure. They do not need to be treated, except on cosmetic grounds. Deep point-electrodesiccation under local anaesthetic or treatment with a vascular laser is curative.

Acne cysts

Acne cysts may occur without the typical comedones, papules and pustules of acne. Excision is seldom indicated as treatment of the underlying acne should be a priority. Injection of intralesional corticosteroids usually produces prompt remission.

Chondrodermatitis nodularis helicis

Chondrodermatitis nodularis helicis occurs on the ear helix or antihelix and is due to both ischaemia and pressure

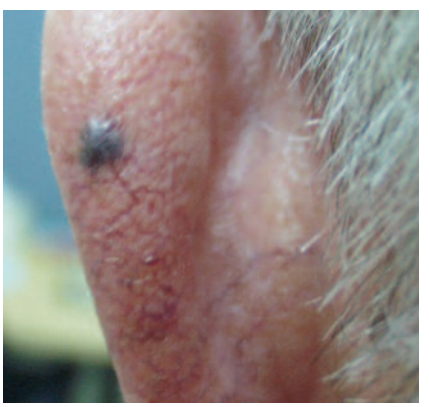


Figure 17. Venous lake mimicking melanoma.

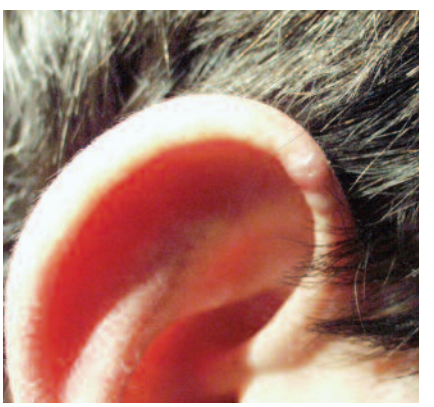


Figure 18. Chondrodermatitis nodularis helicis.

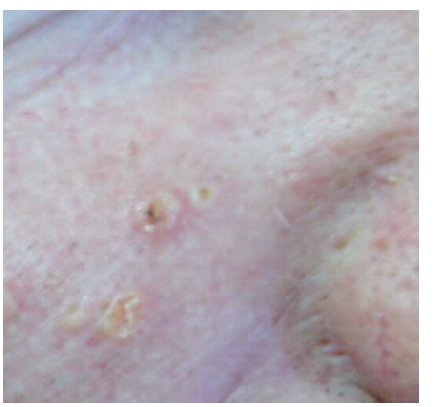


Figure 19. Nodules of sebaceous hyperplasia.

Benign skin tumours: practice points

- Never reassure a patient that a lesion is benign if you do not know what it is.
- Asymmetry and colour variation in a pigmented lesion are significant signs of malignancy.
- Any lesion that is thought to be malignant should be examined histopathologically.
- An excisional biopsy is recommended for all suspicious pigmented lesions.
- Partial biopsies (especially punch biopsies) of melanocytic lesions will often yield an unrepresentative sample of the lesion as a whole, potentially providing an incorrect diagnosis.
- Superficial lesions can be treated with superficially destructive treatments.
- Deeper lesions need surgical excision.
- Following the removal of a benign skin tumour, Asians and darker skinned patients can develop hyper- or hypopigmentation, resulting in a poor cosmetic result.

(Figure 18). It presents as a very painful nodule that prevents patients from sleeping; it occurs on the side that patients tend to rest their head on the pillow. The nodule is an underlying inflammation of cartilage with an overlying area of necrotic epidermis.

Treatment is aimed at relieving the pressure from the pillow – for example, cushioning the ear on the pillow with a soft dressing, using a very soft pillow, using a foam ring instead of a pillow, etc.

Specific treatments include cryotherapy, injection with intralesional corticosteroid and excision (including the underlying cartilage).

Sebaceous hyperplasia

Sebaceous hyperplasia manifests as yellow nodules 2 to 4 mm in diameter occurring on the face of older individuals with sun-damaged skin (Figure 19). The nodules have a central punctum and can appear lobulated under illuminated magnification. They can resemble a small nodular basal cell carcinoma. These nodules respond to cryotherapy or light electrodesiccation or gentle ablative laser therapy.

Examining patients to exclude melanoma

Patients should be examined in their underwear in good lighting. They can be questioned about the presence of pigmented lesions in those areas still covered at examination. The scalp should be examined in patients at high risk of melanoma. A dermatoscope or similar illuminated magnifier can be extremely useful in characterising subtle changes in irregular pigmented lesions.

Because cumulative sun damage is another important factor in the development of some forms of melanoma, the sun-damaged backs of middle aged and elderly men are common places to find melanoma.

Major predictive factors for melanoma include lesion asymmetry and colour variation within a lesion. The finding of a 'blue-grey veil' under examination with a dermatoscope or episcope is strongly suggestive of melanoma.

Conclusion

Patients often present to their GP with concerns about skin lesions. Many of these lesions will be benign, and most will not require treatment or biopsy. It is important, however, to consider malignancy in the differential diagnoses of some of these benign skin tumours. The box on this page lists some practice points to help in the assessment and treatment of these tumours. MT

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