The management of benign skin lesions

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Benign skin lesions are often encountered in day-to-day general practice. The majority of lesions do not require treatment; however, occasionally patients will request the removal of lesions which are symptomatic or unsightly. It is important to make the correct diagnosis to avoid the inappropriate treatment of malignant lesions. Making the diagnosis of a benign skin lesion is often based on the history and then recognising the clinical appearance, but taking a biopsy is sometimes necessary in situations when uncertainty arises. It is also important to be aware that occasionally malignant lesions can appear within, or adjacent to, some benign lesions, and malignant lesions can mimic some benign lesions, i.e. keratoacanthomas.

This article will attempt to highlight the common lesions seen in general practice and review the current treatment modalities used in treating these lesions.

Common types of benign skin lesions

Seborrhoeic keratosis

Seborrhoeic keratoses are the most common benign skin lesions seen in general practice. They usually appear in the late 20–30s and are more common in paler skin types. It is thought that hereditary factors play an important role in the development of seborrhoeic keratosis. The underlying mechanism is a localised response to epidermal growth factors in predisposed individuals. Profuse eruption of seborrhoeic keratosis can also follow inflammatory dermatoses or the development of an internal malignancy, which is known as the sign of Lesser-Trelat.

Seborrhoeic keratoses vary widely in shape and colour. Seborrhoeic keratoses that have undergone recent clinical change should be considered for biopsy and histological examination, as they can be associated with other lesions including premalignant lesions, malignancies, and melanocytic lesions. Early flat seborrhoeic keratosis on the face may be difficult to distinguish between pigmented actinic keratosis and lentigo maligna. An incisional biopsy is useful when doubt about the diagnosis arises.

Cryotherapy is effective, especially if multiple small seborrhoeic keratoses are to be treated. Cryotherapy is also useful for flat seborrhoeic keratoses but if lesions are large or exophytic recurrence can occur. Shave excision or a sharp curettage are effective treatment methods with very little, if any, cautery or diathermy needed. Post removal chemical cautery with 20% aluminium hexachloride is useful and reduces chances of scarring compared to standard cautery.

Skin tags (acrochordons, cutaneous papilloma)

Skin tags are loose, often pedunculated, fibrous tissue and often occur in flexural areas such as around the base of the neck, the axilla and the inguinal areas. These are common lesions and can range in size from a few millimetres to over a centimetre in diameter and often seen associated with seborrhoeic keratoses. They occur more frequently in females, and are associated with obesity and with increasing age.

Skin tags are usually asymptomatic and treatment is often for cosmetic reasons. They may become symptomatic if traumatised by clothing straps and necklaces at which point patients often request removal.

Simple removal of skin tags can be achieved with scissor excision or by using electrocautery to the base of the lesion. Local anaesthesia may not be necessary for small lesions treated with scissor excision. Cryotherapy is also an effective treatment. Using a pair of forceps dipped in liquid nitrogen and then applied to the base is a simple technique. Patients should be informed that despite adequate treatment new skin tags are likely to occur.

Warts

Warts are common and affect approximately 20% of school age children. Most are common warts, usually on the backs of the hands and fingers, and are often asymptomatic. Plantar warts occur on the soles and palms and are often more symptomatic. They can be confused with callosities and corns.

Always discuss the need for treating warts in children. Treating warts is often difficult and challenging and many office procedures are painful and may not be appropriate in children. With the exception of imiquimod the majority of treatments are aimed at destroying infected tissue and thus have no effect on virus rep-

lication. This should be emphasised with the patient. If warts are causing pain and discomfort or are located on cosmetically important sites e.g. lips, treatment may be appropriate. Topical salicylic acid therapy has the advantage of being easy to use. Studies show no additional benefit from other invasive treatments over topical keratolytics.[1] Commercial preparations of salicylic acids in New Zealand vary from 17–27%, but prescriptions can be made for higher strengths. Cure rates ranging from 40–80% can be achieved with daily application for up to three months. Paring of the wart down and covering with a waterproof dressing or tape will increase the cure rate.

A number of treatment sessions are often needed when using cryotherapy to treat warts. Approximately 70% of common warts are cleared with three treatment sessions spaced four weeks apart. Common warts need only one freeze thaw cycle but plantar and palmar warts should be treated with two freeze thaw cycles after paring.[2]

Imiquimod (Aldara™), which was initially used for treating genital warts, may have some benefit in more common warts. Non-controlled studies have shown 80–90% cure rates with 5% imiquimod cream.

Callosities/corns

Calluses are hyperkeratotic areas of skin caused by repeated trauma and pressure and are often found on the soles of the feet. Corns are usually found over bony prominences. Deformities of the feet and ill-fitting footwear are contributing factors.

Callosities can also be found on other sites, such as the hands and knees, and are often occupation related.

Treatment is based around correcting footwear and padding around bony prominences. Simple paring using a scalpel treats the majority of calluses. Use of salicylic acid in concentrations of 10–20% in white soft paraffin can be effective in softening skin and as a keratolytic. Referral for surgery correction may be necessary for bony deformities.

Actinic keratosis

Actinic or solar keratoses are hyperkeratotic skin lesions occurring on sun-exposed skin. They are included here as benign skin lesions but some may argue that they are premalignant lesions as there is a low risk of progression to squamous carcinoma. Thin and superficial lesions can be treated effectively with cryotherapy. Numerous lesions and diffuse actinic damage can be treated with 5-fluoruracil cream applied once or twice daily. Less frequent applications, such as once daily, have the advantage of better patient acceptability with reasonable clearance rates. Imiquimod cream, a novel immune response modifier, used twice weekly can also be used effectively to treat actinic keratosis. Complete clearance rates of around 50% and partial clearance rates of 80–90% can be achieved with 12–16 weeks of treatment.[3] Both 5-fluorouracil and imiquimod can produce an inflammatory facial reaction that is associated with the destruction of actinic keratosis.

Keratoacanthomas

Keratoacanthomas are uncommon skin tumours that usually occur as rapidly growing single nodules on sun exposed skin such as the face and limbs.

The history is usually of a rapidly growing nodule arising over a few weeks and clinically they have a central keratinous plug. If left, the natural history is for keratoacanthomas to involute over weeks to months. However, surgical excision is recommended for keratoacanthomas as it is often difficult to clinically distinguish them from squamous cell carcinomas and therefore tissue should be obtained for histological diagnosis.

Dermatofibromas

Dermatofibromas are common dermal nodules, usually found on the limbs, which occasionally may become itchy or tender. They are usually a result of a dermal fibrous reaction to minor skin trauma such as: an insect bite, ruptured cyst or folliculitis. They may

Figure 1. A dermatofibroma squeezed between fingers and showing characteristic dimpling.

Figure 2. A typical pyogenic granuloma presenting as a friable exophytic nodule.

be mistaken for a malignancy. Dimpling of the lesion by pinching the lesion between your fingers is a useful diagnostic sign, although dimpling can occur in other lesions (Figure1). If removal is indicated for cosmetic reasons or for symptomatic lesions then surgical excision is recommended. Cryotherapy may also be used to improve the cosmetic appearance, but it is unlikely to completely remove the lesion.

Pyogenic granulomas

Pyogenic granulomas are vascular lesions, usually arising as nodules with a smooth surface, and often presenting with bleeding (Figure 2). They are more common in children and in pregnancy, with frequent sites being on the fingers and lips. Treatment is either with surgical excision or curettage and cautery. Cryotherapy can also be used.[4] The specimens should always be sent for histological analysis as they can mimic more serious pathology such as amelanotic malignant melanoma.

Epidermoid cysts

Often incorrectly called sebaceous cysts these common lesions occur more often in young people and can been associated with severe acne. They consist of an enclosure of epithelium forming a walled nodule containing lipid and keratin which communicates with the skin surface through a central keratin plug. They often remain small for years enlarging slowly but can become symptomatic when they rupture. Secondary infection can occur but inflammation is more often a result of cyst rupture.

Satisfactory treatment usually involves excision of the entire cyst. Cysts that have been frequently inflamed, such as those that follow acne, can be more difficult to remove because of tethering. One simple technique involves cutting a small ellipse around the communicating core and using blunt dissection to remove the whole cyst intact. Incising the cyst and draining the contents may provide some relief but leaving the cyst wall behind frequently leads to recurrence.

Trichilemmal cysts

Trichilemmal or pilar cysts are often encountered on the scalp and usually form a smooth nodule. They differ from the more common epidermoid cyst in the way the lining cells mature and clinically they have a thicker wall, which is composed of stratified squamous epithelium. Typical pilar cysts can easily be shelled out from the dermis but larger, multiple lobular proliferate cysts will need complete excision.

Cherry angiomas

These small, acquired haemangiomas are frequently seen in adults and rarely require removal or treatment. If treatment is requested for cosmetic reasons electrodessication and laser therapy can be used.

Treatment methods for benign skin lesions

Cryotherapy

Cryotherapy is the most commonly used modality for treating benign skin lesions.[5] It has the advantages of being easy to use, relatively inexpensive and has good patient acceptability. Its disadvantages include pain, post treatment oedema and blistering, and hypopigmentation. With cryosurgery no tissue is obtained for histological analysis so it is important that the correct diagnosis is made before treatment is instigated.

Liquid nitrogen is the most commonly used cryogen and has superseded carbon dioxide snow. Liquid nitrogen is applied to skin lesions using either a cryospray, cotton-tipped applicators or less commonly a cryoprobe. Cotton tipped applicators are adequate for a few superficial or flat lesions but the cryospray is better at achieving consistent freezing temperatures and is easier to use when treating multiple lesions. When using a cotton-tip applicator the amount and looseness of the cotton ball is important. Standard cotton buds or Q-tips are inadequate and an additional cotton wool should be loosely wound around the stick. Using different amounts of cotton wool on a stick can give a range of applicator sizes.

Damage to cryotherapy treated tissue occurs because of intracellular ice formation. Obtaining the correct temperature reached within the lesion is important factor in causing lesion destruction. Usually up to 30 sec will achieve a skin temperature of -40 to -50°C.

A commonly used method of treating lesions is to use the timed freeze thaw cycle technique.[6] This enables better control of the delivery of cryogen and is a more standardised treatment method. It involves the use of the cryospray 1cm above the lesion and freezing the lesion until an ice ball is formed within the lesion and the desired margin. Then using pulses of spray the ice ball is maintained for the desired time. This is usually 5–30 sec after the initial ice ball formation with the time varying according to the lesion needing treatment (Table 1).

Thick keratin often acts as an insulator and prevents the attainment of the desired temperatures at the base of the lesion. Paring down of thick keratin will increase the probability of the lesion clearing. Pain and oedema are common and patients should be warned of this. Some skin sites should be avoided such as those over tendons and major nerves.

Curettage

Curettage is useful if the lesion being removed is more friable than the surrounding normal skin, e.g. pyogenic granuloma. Either a ring shaped curette (often disposable) or a spoon

Table 1. Recommended cryotherapy times for common benign lesions

Type of lesion	Freeze time[1]	Freeze thaw cycles[2]
Wart – Common	10 sec	1
Wart – Plantar	10–20 sec	2
Seborrhoeic keratosis	10 sec	1
Dermatofibroma	20 sec	1
Skin tags	5 sec	1
Actinic keratosis	5–10 sec	1
Pyogenic granuloma	10 sec	1
Solar lentigo	5 sec	1
Superficial basal cell carcinoma[3]	30 sec	2

1 Freeze time: Time needed to ensure adequate freezing after ice ball has formed
2 Freeze thaw cycle: a cycle of freezing for the appropriate time and then thawing
3 Included for comparison

shaped curette is used to scrape off the lesion until a smooth surface is revealed (Figure 3). The underlying normal dermis tends to have a rasping feel and usually signals that the required level has been reached. Bleeding is stopped using cautery or electrodessication.

Curettage is useful in large single seborrhoeic keratosis, occasionally warts and pyogenic granulomas.

Curettage and electrocautery

Also called electrocauterisation and electrocautery, this is a useful adjunct if available.[7] Usually the majority of the lesion is removed by using either a curette or shave excision (Figure 4). The base of the wound is then cauterised with either electrocauterisation (electrofulguration) or cautery. Usually one cycle of curettage and cautery is all that is needed for benign lesions. It is very useful in the management of benign skin lesions and in some potentially malignant lesions, such as selective basal cell carcinomas. It is simple and inexpensive and has the advantage of providing tissue for histological diagnosis.

Caustics/styptic

Application of 20% aluminium chloride hexahydrate (Hydrosol™) to the base of a freshly curetted or shaved wound is a useful method for controlling bleeding and an alternative to electrocautery. Monsel's solution was previously used but because of its ferric base can lead to pigmented tattooing.

Excision

Excision offers the advantages of higher cure rates and providing good tissue for histological diagnosis but is more time consuming and not the most appropriate approach in certain situations. Excision is the best treatment of symptomatic dermatofibroma and epidermoid cysts. Narrow margins (1–2mm) are usually sufficient.

Laser therapy

Most GP practices will not have access to lasers to treat benign lesions. Ablative lasers particularly, the CO_2 and Erb:YAG laser, have advantages in some situations over more traditional therapies. When patients have numerous skin lesions such as seborrhoeic keratoses and skin tags it is simpler and speedier to use laser ablation.

Vascular lasers can be used to treat cherry haemangiomas and spider naevi.

Key Points

- An incisional biopsy is useful to distinguish early flat seborrhoeic keratosis on the face from malignant lesions.
- Topical keratolytics such as salicylic acid should be used as first line treatment for common warts, especially in children.
- All benign lesions removed by excision, curettage or shave should be sent for histological assessment.

Conclusion

Reassurance is all that is needed for patients with benign skin lesions but treatment may be requested by the patient if the lesion becomes irritated. Treatment of benign skin lesions may often seem trivial but the correct diagnosis, with or without a biopsy, is important so that the correct treatment option is selected. This will avoid inappropriate and inadequate treatment of malignant lesions. Cryotherapy is the commonest treatment method used in general practice but many other methods of removing lesions should be considered.

Figure 3. Curretage using a spooned shaped curette.

Figure 4. Shave excision using a sterilised disposable razor blade. A large scalpel blade could also be used.

Competing interests

None declared

References

1. Gibbs S, Harvey I, Sterling J, Stark R. Local treatments for cutaneous warts; systematic review. BMJ 2002; 325:461.
2. Berth-Jones J, Bourke J, Eglitis H, Harper C, Kirk P, Pavord S, et al. Value of a second freeze-thaw cycle in cryotherapy of common warts. Br J Dermatol 1994; 131:883-6.
3. Hadley G, Derry S, Moore RA. Imiquimod for actinic keratosis: systematic review and meta-analysis. J Invest Dermatol 2006; 126:1251-5
4. Ghodsi SZ, Raziei M, Taheri A, Karami M, Mansoori P, Farnaghi F. Comparison of cryotherapy and curettage for the treatment of pyogenic granuloma: a randomized trial. Br J Dermatol 2006; 154:671-5.
5. Thai KE, Sinclair RD. Cryosurgery of benign skin lesions. Australas J Dermatol 1999; 40:175-84.
6. Sinclair RD, Dawber RP. Cryosurgery of malignant and premalignant diseases of the skin: a simple approach. Australas J Dermatol 1995; 36:133-42.
7. Goldman G. The current status of curettage and electrodesiccation. Dermatol Clin 2002; 20:569-78.