Skin procedures in general practice

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Background
Most skin cancers diagnosed in Australia, including melanomas, are identified and managed in a primary care setting. Most skin cancers have the diagnosis confirmed by histopathology, and surgical excision is the most common form of treatment. Therefore, it is important that all primary care doctors in Australia are competent and confident in the diagnostic sampling and surgical management of skin cancers.

Objective
This article considers the process of performing biopsies and excisions from the skin to diagnose or treat skin cancers.

Discussion
Primary care is the appropriate setting for the management of most skin cancers in Australia. Small simple lesions can be sampled for diagnosis and excised as definitive treatment of the tumour. This can be simpler, cheaper and more efficient for the patient compared to the hospital setting, allows the resources of speciality care to be used for more difficult scenarios and be quite a satisfying part of providing primary care.

MOST SKIN CANCERS diagnosed in Australia, including melanomas, are identified and managed in a primary care setting.[1] Keratinocyte cancers (mainly basal cell carcinomas and squamous cell carcinomas) are estimated to have an incidence of over 1% per year, with a lifetime risk of 69%.[2] Procedures performed under local anaesthesia are a common and appropriate part of the general practice skill set. Providing these services minimises problems of continuity of care, and it is convenient for patients to receive treatment in a timely manner and close to home.

Biopsy of the skin

The two most common techniques for sampling a suspicious lesion are punch biopsy and shave biopsy. Curettage of the skin can also be used as a diagnostic technique in specific circumstances. The process of performing a biopsy is presented in an article by Stevenson and Rodins published in this Journal in 2018.[3]

Which type of biopsy should I take?

The decision between punch biopsy and shave biopsy is highly influenced by the suspected clinical diagnosis. Pigmentation of a lesion raises the possibility of melanoma. For the less experienced clinician, an excisional biopsy of the entire lesion is the preferred method of diagnostic sample. Only with more experience should other methods of sampling be considered. One of the worst outcomes for a patient is a missed diagnosis of melanoma due to poor sampling technique.

The thickness and induration of the lesion are a guide for non-pigmented lesions. A shave sample is usually appropriate for a pink macule or scaly non-indurated patch, while a nodule or indurated plaque is usually more suited to a punch biopsy. The histopathologist might only see the relevant diagnostic pathological features of a nodule in the deeper parts of the punch biopsy specimen, and these might be missed in a more superficial sample. Either technique is suitable for a flat lesion as long as a large enough sample is taken.

The question of 'What am I trying to exclude?' should influence the type of biopsy performed. Sampling the correct tissue to exclude the more dangerous diagnosis will lead to safer clinical outcomes.

Punch biopsy

Many clinicians are concerned about the scar they might create. A punch biopsy defect of 8 mm or less will contract over time, so the final scar is 20–30% smaller than the initial defect created.[4] Good suturing technique impacts the final appearance of the scar, where too much tension from the suture can cause necrosis.

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Giving the pathologist adequate tissue to make the correct diagnosis is important. A poor small sample will cause more potential harm to the patient due to incorrect diagnosis. For this reason, the use of a 2-mm punch biopsy should be discouraged. A 3-mm or larger punch biopsy, including on areas like the nose or ear, will improve diagnostic accuracy, and the defect can be closed with one to two sutures. For areas of thin skin, pinching the skin to elevate the centre can prevent the punch biopsy from penetrating too deep. For thicker skin, stretching the skin in two directions away from the natural lines of tension allows the final defect to be oval in shape. The final small scar from the biopsy will then follow the natural lines of tension and improve the cosmetic outcome further. A demonstration of performing a punch biopsy can be viewed on YouTube.[5]

Shave biopsy

Many lesions identified during skin checks are small, flat macules, with or without scale. Most of these lesions can be accurately sampled with a shave technique. As described previously,[3] 0.5 mL of local anaesthesia is adequate for these samples. Pinpoint bleeding from a shave sample can usually be controlled with an astringent agent (aluminium chloride, ferrous sulphate) and an alginate dressing.[6] A hyfrecator used at low power settings (6–8 W) can also be used to achieve haemostasis but has a slightly higher risk of causing mild scarring. A shave sample should not pierce the underlying fat layer. A demonstration of performing a shave biopsy can be viewed on YouTube.[7]

Surgical excision

Excellent surgical results depend as much on planning and suitable facilities as they do on the skills of the surgeon. The patient should be well informed about what to expect during the procedure, and ongoing communication during the surgery will further relieve the patient's anxieties or concerns.[8] The patient should be able to lie comfortably, while the doctor requires easy access to the surgical site. The patient should be positioned so that the lesion is uppermost and the planned surgical field is as horizontal as practical. A pillow or rolled towel can help prop the patient in place. Good lighting and visibility are essential to achieve optimal surgical results. An overhead surgical light or a light source attached to the surgeon's head can be effective.

It is usual to continue any anticoagulant therapies the patient is taking. Many studies have shown limited differences in bleeding rates during surgery, but the risk of an adverse cardiovascular event can be increased.[9] If bleeding is of significant concern, then the patient is better managed in a hospital environment rather than a primary care setting. Prophylactic antibiotics should not be routinely prescribed before skin cancer surgery but should be considered for higher risk patients or specific body locations.[10] A discussion about postoperative activities should occur before the day of surgery so appropriate planning for the aftercare period can be made by the patient.

The first step of the procedure is to clean the skin around the lesion with an Alcowipe (alcohol impregnated cloth wipe). As well as the cleaning effect of the alcohol and removal of any make-up or dirt, lesions such as basal cell carcinomas tend to flush when rubbed. The clinical margins become more clearly defined. The alcohol evaporates rapidly and therefore does not interfere with the surgical markings.

A gentian violet surgical marking pen is used traditionally, but a fine point permanent marker is also effective and less likely to run when later washing the surgical field.[11] Studies have shown that use of a fine point permanent marker does not increase the rate of skin infections.[12] The clinical lesion is then marked under magnification, checking the edges with a dermatoscope to help identify areas of tumour that are not clearly seen at first inspection.[13]

Having defined the lesion, a clinical margin is then added. The size of the clinical margin is determined by the lesion type; then the complete removal is confirmed by histopathological examination. For most benign lesions, or when removing a pigmented lesion for a histological diagnosis (excisional biopsy), a 2-mm margin is adequate. This might be the width of the pen marking when defining the lesion.[14]

For a basal cell carcinoma, the Australian keratinocyte guidelines suggest a lateral clinical margin of 4 mm, although one study mentioned in the guidelines identified no significant difference in incomplete removal rates of the basal cell carcinoma whether a 2-, 3-, 4- or 5-mm clinical margin was taken.[15] Some lesions are small and well circumscribed, so a narrower margin might be more than adequate for complete removal of the basal cell carcinoma. Other lesions, such as those of the sclerotic or morphoeic subtype, might have poorly defined margins, and a wider margin might be required. When it is difficult to define the clinical edge of the lesion, a referral to a Mohs surgeon should be considered.[16]

Despite careful planning, some lesions will be reported as incompletely excised. It is extremely uncommon for a basal cell carcinoma to metastasise, so while there might be some degree of embarrassment for the surgeon, no harm will come to the patient if a further procedure is required to completely excise the lesion. Although not formally calculated, most published studies suggest that incomplete margins of less than 5% of surgical cases (1:20 cases) is acceptable.[17]

In contrast to basal cell carcinomas, the suggested clinical margin for squamous cell carcinomas is between 4 and 6 mm.[15] The potential consequences of incomplete removal might be more significant. Squamous cell carcinomas are often in areas of sun-damaged skin with surrounding solar keratoses. The edge can be more difficult to define both clinically and histologically. For a small well-defined and well-differentiated lesion, a narrow margin might be adequate, but squamous cell carcinomas that are larger, poorly defined or poorly differentiated require wider surgical margins and definite histological clearance. It is important to consider lymph node involvement in these cases, and it might be that the patient should not be managed in a primary care setting. Over 500 deaths are recorded in Australia each year from non-melanoma skin cancers.[18]

For histologically proven melanoma, there are clearer guidelines about the surgical margin to take. For an in-situ lesion, a 5-mm clinical margin is usually adequate, but a wider margin (5–10 mm) might be required to adequately clear a lentiginous lesion where the clinical margins can be difficult to interpret. For thin invasive melanoma, a 10-mm clinical margin is recommended.[19] In primary care, a lesion of more than 1-mm Breslow thickness would usually be referred to a speciality service for consideration of a sentinel node biopsy. Therefore, it is unusual

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for a definitive surgical excision with a clinical margin wider than 10 mm to be performed in the primary care environment.

Once the lesion has been defined and a clinical margin added, the next decision is the direction of closure. Langer's lines have previously been used as a guide for direction of closure, but more recently, BEST lines have been suggested as a way to decrease the tension on the wound.[20] These directions were calculated by measuring the tension across the wound once the lesion was excised. The length of an elliptical excision should be at least three times the width of the lesion. This minimises the elevation of the tips of the ellipse (dog ear) once the wound is closed. A better cosmetic result can be achieved with a longer scar that leaves the wound flat with the surrounding area compared to a shorter but elevated scar.

When excising a lesion, the blade should be inserted vertically and the incision made down to the underlying subcutaneous fat. Some lesions require deeper excision down to mid fat and others to the underlying fascia. Vertical walls allow the edges of the lesion to close horizontally. If the lesion is saucerised, then the edges will invert when closed, leaving a deeper groove for the scar and a poor cosmetic result. A demonstration of a surgical ellipse can be viewed on YouTube.[21]

Haemostasis is easily obtained with a hyfrecator, but continuous pressure with saline-soaked gauze will stop most bleeding vessels after two to three minutes. Larger vessels might require a suture with an absorbable material to stop bleeding. Absorbable sutures can also be used to relieve wound tension when closing the defect. Their use is encouraged for the closure of most wounds, as the tension relief improves the longer-term appearance of the scar.

When placing external nylon sutures, the needle should enter the skin vertically and then follow the curve of the needle. The typical needle used for skin cancer surgery is a 3/8 circle reverse cutting needle with a 45- or 70-cm thread. A larger needle diameter (arc) allows for deeper bites of the skin. When placing the needle to start suturing, the distance from the edge should be approximately the same as the depth of the wound.

Tape support across the wound after completion of suturing does not increase the immediate wound strength but does help distribute the tension away from the suture entry points. This can decrease the long-term suture marks created by small skin tears. The sutures and tape are then covered with a thin non-adherent pad and a final layer of a semi-occlusive film dressing. This dressing is best described to the patient as splashproof rather than waterproof. The patient should not be soaking the wound in a swimming pool or bath, but the dressing can usually tolerate some moisture from a shower. The patient should be advised to avoid moisture from sweating with exercise, as this will create a macerated wound.

On completing surgery, an instruction sheet should be provided, including information about when to return for removal of sutures and early potential complications. The instruction sheet can be used as a prompt to verbally highlight the issues that might be more relevant to the patient. The patient should be advised to return early if they are concerned about something. It is much easier to deal with an early complication than a more advanced one.

Conclusion

With a good routine and good facilities, removal of most skin cancers can be managed in a primary care setting. This approach is often more efficient and convenient for the patient than seeking speciality care and can be quite satisfying for the practitioner.

Key points

- The type of biopsy to take is highly influenced by the suspected clinical diagnosis, induration or erosion of the lesion, and consideration of what diagnosis needs to be excluded.
- Anticoagulant therapies are usually continued when a patient is having a minor skin procedure.
- A clinical margin of normal skin increases the likelihood of complete removal of the tumour.
- Excisional wound edges should be vertical, and the needle used for suturing should enter the skin perpendicular to the skin.
- Post-operative written instructions can be used to highlight for the patient the issues that are important to them.

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