Multiple superficial basal cell carcinomata

Topical imiquimod versus curette and cryotherapy

Anthony J Dixon, MBBS, DipRACOG, FACRRM, is a dermasurgeon and Director, Skincanceronly, Geelong, Victoria.
anthony@skincanceronly.com

BACKGROUND
Superficial basal cell carcinoma can be successfully managed by means other than surgical excision. Nonexcisional approaches include topical imiquimod, and curette and cryotherapy (C&C).

OBJECTIVE
This article discusses the management of an insulin dependent diabetic man aged 52 years presenting with 17 torso basal cell carcinomas (BCCs); mostly superficial BCCs (SBCCs).

DISCUSSION
Half were treated with topical imiquimod. The remaining lesions were treated with curette and cryotherapy. All lesions resolved with proven histologic clearance. The patient considered C&C caused him less discomfort and disruption. He developed a late secondary infection in some sites treated with imiquimod. At 12 months there was no evidence of recurrence though new nodular BCCs and SBCCs had developed elsewhere on his upper torso. He has elected to have future SBCCs managed with C&C. While excisional surgery remains the benchmark management for nonmelanoma skin cancer, topical imiquimod and C&C are important options for treating SBCCs.

Case history

PF, aged 52 years, is an airline engineer and an insulin dependent diabetic. He presents with a large ulcerating nodular basal cell carcinoma (BCC) on his right leg. A wound infection followed its excision. Examination of his skin elsewhere revealed 17 further BCCs located on his pectoral, trunk and arm regions. He was keen to explore nonexcision treatment for these BCCs.

Treatment options for BCC

Topical imiquimod

In the largest trial of topical imiquimod for superficial basal cell carcinomas (SBCCs), Geisse[1] demonstrated 82% histologic clearance rate when applied five times per week. This is in keeping with earlier studies.[2,3] Imiquimod also has a role in treating large and long standing SBCCs.[4] Limited experience managing nodular BCCs with imiquimod has failed to demonstrate satisfactory clearance rates.[3]

Side effects are not uncommon and include erythema, scabbing, oedema, induration, itching, pain, erosion, and secondary infection. Pain varies with frequency of application.[1–3]

Following imiquimod treatment the skin can have an erythematous and slightly thickened appearance. Unfortunately, SBCCs can have a similar appearance. Superficial BCCs on the torso are often misdiagnosed as an inflammatory skin condition; malignancy considered only after the 'rash' fails to respond to topical corticosteroid and/or antifungal management.

Curette with cryotherapy

Curette with cryotherapy (C&C) is an established approach to managing SBCCs.[5] Kokoszka[6] undertook a meta-analysis of treatment of BCCs with cryotherapy showing cure rates of around 90%. Most studies excluded difficult BCCs such as recurrent and morpheaform tumours. Many authors recommend curettage before cryotherapy as it defines and debulks the tumour. I favour this approach using a blunt curette, cleaving the BCC in one direction before a second curettage cleaving perpendicular to the first. A blunt dermal curette is cheap, able to be sterilised and reused.

Bleeding may be a problem following curettage. Spot monopolar electrocautery is my preferred approach to this predicament. Haemostatic dressings can also be used.

Table 1. Summary of managing SBCC with surgery versus imiquimod versus C&C

	Surgical excision	Topical imiquimod 5%	Curette and cryotherapy
Recurrence rate	5% or lower with experience	Around 20%	Around 10%
Pain	Not often a problem. Oral paracetamol for a few days meets needs of most	Varies with frequency of application and can continue for 6 week duration of treatment	Typically uncomfortable for a week or so
Cost to patient	Gap payment above Medicare for surgery item numbers	Expensive script. Many scripts may be needed to treat multiple/ large SBCCs	Gap payment for curette item numbers
Scarring	Generally least, though wound spread, hypertrophy and keloid can be issues on the upper torso	Usually noticeable post-treatment, but keloid and wound spread not considered issues	Hypopigmentation or discolouration may occur
Experience required by treating doctor	Large wounds on the upper torso may need deep sutures and/or flap repairs to ensure satisfactory outcomes including acceptable wound spread incidence	Skills recognising the erythema and induration associated with treatment are required, enabling suitable counselling to patients. A treatment 'break' often helps distressed patients	The physician needs to learn the feel of using a skin curette, identifying the different character of scraping friable SBCC tissue versus normal underlying dermis
Histology	Mandatory	Strongly recommended in all cases. Clinical diagnosis is insufficient	Always send any curetted tissue for histologic confirmation
Bleeding	Haemostasis required at time of surgery. Postoperative bleeds can occur	Not an issue	Control spot bleeds with diathermy or haemostatic dressings
Keloid prone patient	Avoid surgery, especially on torso	Recommended (imiquimod is being used by some to treat keloid)	Less keloid risk than excision
Healing time	Predictable	Six weeks plus, due to effects of imiquimod locally	Predictable and prompt
Patient involvement in own treatment	Usually minimal	Involved with ointment application and wound care	Usually minimal
Nodular BCCS	Treatment of choice	Contraindicated Recurrence rates unacceptable	Not recommended for difficult BCCs such as morpheaform, ulcerating and sclerosing BCCs
Recurrent BCCs	Excision required. Referral for Mohs micrographic surgery should be considered	Contraindicated based on evidence to date	Contraindicated based on evidence to date
Face and ears	Treatment of choice. Scars on face generally less noticeable than on torso	Avoid. Very little data. Not endorsed for face	Avoid as pigmentation changes can be more noticeable than surgical wounds
Anticoagulants	Increased bleeding risk. Extra care with haemostasis. Ceasing warfarin/ aspirin in advance is no longer common in cutaneous oncology	Must be considered given the absence of bleeding issues	Haemorrhagic blistering can occur. More care needed with spot diathermy
Dark skinned patients	Caution. Keloid formation or poor scarring can be accentuated	Must be considered given minimal keloid and hypopigmentation concerns	Avoid. Hypopigmentation can be striking and distressing to patient
Very large SBCC	Surgery could be major with large scarring	Can be used on even large SBCCs	Very useful technique, even on flexural regions

Cautery should be minimal as it is associated with more scar risk than curette and/or cryotherapy. I no longer treat nonmelanoma skin cancer (NMSC) with curette and broad based cautery in view of these scar risks.

Reported complications of C&C include ulceration, hypopigmentation, blistering, scarring, oedema, pain, secondary infection and recurrence.

Surgery

Excisional surgery generally produces less pain, quicker healing and more aesthetic scars than less invasive alternatives. Most authors only recommend nonexcisional approaches for managing simpler BCCs. Indeed, SBCC is the only skin cancer for which imiquimod treatment is approved in Australia. National Health and Medical Research Council guidelines[7] regard surgical excision as the 'gold standard' for management of NMSC against which nonsurgical treatments should be judged.

Nonsurgical approaches to managing SBCCs are reserved for when surgery is considered inappropriate. Excision is often more convenient for patients with fewer visits to the doctor and less self management of the wound.

Management of patient

Every lesion on PF's body suggestive of NMSC was numbered and punch biopsied (*Figure 1, 2*). Nineteen biopsies revealed 17 BCCs, mostly SBCCs. Lesions eight and 10 were actinic keratoses and treated with cryotherapy, BCCs one through seven and nine were treated with C&C. This included all back lesions given the logistics of accurately applying cream to these sites, BCCs 11 to 19 were treated with imiquimod.

Lesions selected for C&C were curetted until no apparent tumour remained. The base and 4 mm of surrounding skin was then treated with a 15 second freeze/120 second thaw/10 second freeze liquid nitrogen cryospray. Moist occlusive dressings were then applied to each site. PF was instructed to carefully apply imiquimod 5% w/w cream accurately and very sparingly, 4 days per week for 6 weeks to the sites selected for imiquimod therapy. Following Geisse's[1] study, five applications per week for 6 weeks is now the generally recommended regimen.

At 2 weeks, PF commented that the imiquimod sites were very itchy, especially his left shoulder (*Figure 3*). Discomfort was most marked an hour after application. Pruritus subsided 24 hours following application. Some sites treated with C&C bled for up to 2 days following treatment; sites were all uncomfortable for 3–4 days.

Three weeks later PF complained of increased imiquimod site pain, swelling, lethargy, fever and generally feeling poorly. He had impetigo with tender left axillary lymphadenopathy. Oral dicloxacillin resolved his skin infection. At this stage (week 5), all his C&C treated sites were healed (*Figure 4*) and he commented that he had been 'no longer aware' of these sites since week 2.

Results

At 6 weeks, each site was biopsied confirming no evidence of residual BCC at any site. At 10 weeks all sites felt the same to PF and looked clinically indistinguishable (*Figure 5*). PF considered that the problems he experienced with imiquimod treatment would ensure he chose C&C to manage future SBCCs. Note that despite *Figure 2* demonstrating BCCs and *Figure 5* demonstrating resolved BCCs, both present as similar erythematous macular regions on his torso. This further highlights the difficulties that can be experienced in diagnosing SBCCs.

At 6 months follow up, PF had developed two new SBCCs. One had developed in the right pectoral region where similar lesions had been treated with C&C (*Figure 6*). The other SBCC had developed in the left (imiquimod) pectoral region. Both were treated with C&C.

At 12 month follow up, two new nodular BCCs had developed, again one on each shoulder. Both were surgically excised (*Figure 7*). Follow up to 12 months therefore demonstrated an equal propensity to develop BCCs in the regions treated with each modality. These new BCCs were at new sites on his torso. They were not recurrences of previously treated lesions.

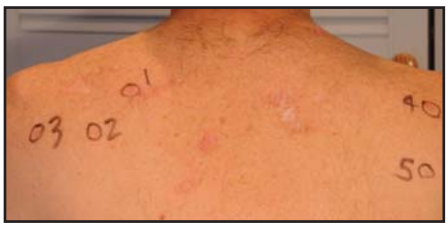

Figure 1. Upper back with multiple SBCCs numbered – note previous scars from previously excised skin tumours

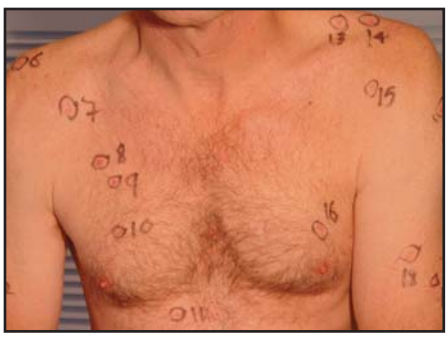

Figure 2. Chest and arms. All but lesions numbered 8 and 10 are BCCs

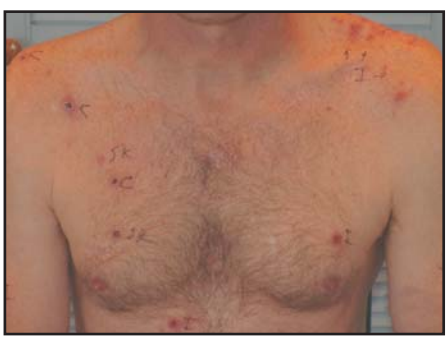

Figure 3. Two weeks into treatment. Note scabs on C&C sites and erythema at imiquimod sites

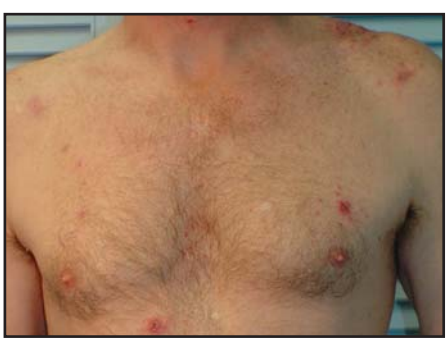

Figure 4. After 5 weeks. C&C sites healed. Secondary impetigo affects some imiquimod sites

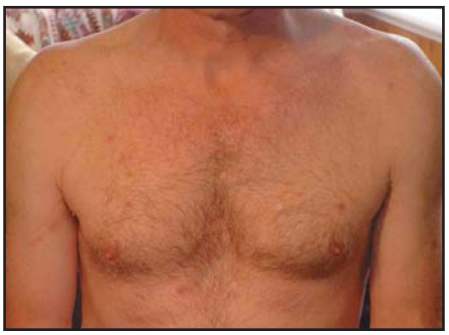

Figure 5. Ten weeks following clearance biopsies

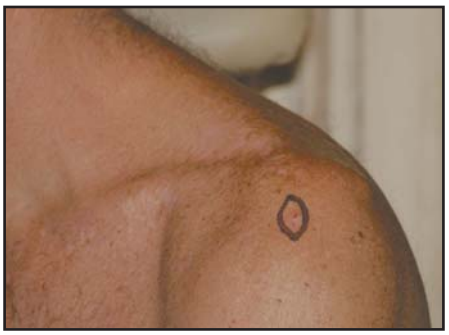

Figure 6. Left shoulder. One of two new nodular BCCs that developed 6 months post imiquimod/C&C treatment. The other nodular BCC developed on the right shoulder

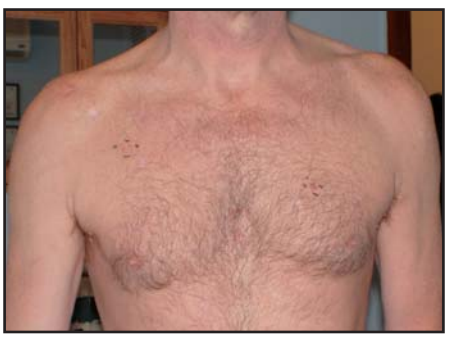

Figure 7. At 12 months, two further superficial BCCs had appeared on the left and right pectoral regions

Discussion

Each of PF's 17 truncal, pectoral and arm BCCs were successfully treated with either C&C or topical imiquimod. Following treatment, all sites settled and the final cosmetic results were indistinguishable. Neither treatment prevented new BCCs developing in nearby sites. Recurrence remains a possibility. Given the extent of his BCC disease to date, further tumours are very likely. Given the data to date, PF was fortunate to have histologic clearance of all tumours.

PF will choose C&C to manage future SBCCs. In my experience, many patients find the lengthy 6 week discomfort that can be associated with imiquimod treatment to be tiresome. Other patients are much happier applying a cream than having their skin 'scraped and frozen'. Many find imiquimod treatment to be very effective without the adverse effects noticed by PF. A summary of further differences between imiquimod, excision and C&C is outlined in *Table 1*.

In special circumstances, these less invasive treatments may have a more prominent role, eg. young people, high keloid prone patients, diabetic patients, those with numerous tumours, immunosuppressed patients, those on warfarin, or those with a pacemaker. In these circumstances, the clinician may seek to avoid excisional surgery.

Conclusion

Excisional surgery remains the benchmark by which all skin cancer management must be compared. Both C&C and topical imiquimod treatment are effective means of managing superficial BCCs and should be considered in patients with multiple superficial BCCs. Clearances rates with imiquimod are around 80% versus 90% with C&C.

Conflict of interest: none declared.

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Correspondence
Email: afp@racgp.org.au