



Minor skin excisions in general practice in North Queensland

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OBJECTIVE

To describe the demographics of patients presenting with skin cancer to general practitioners in rural North Queensland, the sites from which skin cancers are removed, and their histology.

METHODS

Data was recorded from 1247 consecutive patients who attended for minor skin lesion excisions.

RESULTS

Close to half (46.7%) of lesions excised were skin cancers. We excised more squamous cell carcinomas than basal cell carcinomas (0.74:1). Our number needed to treat (benign or dysplastic naevi excised per melanoma) was 8.4. Mean age for excision of melanoma, basal cell carcinoma and squamous cell carcinoma was 55, 60.9 and 63.8 years respectively. Relative tumour density was greatest in the face, scalp and neck region for all skin cancers.

DISCUSSION

In this sample of Mackay GPs, there was a very high yield of skin cancers from all excisions. We could consider lowering our threshold for excision of pigmented lesions.

Skin cancer is an extremely important health issue in Australia. Nonmelanocytic skin cancer (NMSC), combining basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), is by far the most common cancer in Australia, with an incidence of more than four times that of all other registrable cancers combined.¹ Cutaneous melanoma is the fifth most common cancer in Australia, with the estimated risk of developing a melanoma before 75 years of age being one in 26 for Australian men and one in 36 for Australian women.¹ Queensland has the world's highest recorded incidence of all types of skin cancer,^{2,3} with incidence rates being even higher in tropical North Queensland.⁴

In North Queensland, the majority of suspicious skin lesions are managed by general practitioners,⁵ particularly in rural centres such as Mackay where there is no resident dermatologist. It was recently estimated that in Australia, 54% of patients with BCCs and 65% of patients with SCCs are managed in primary care settings,⁶ and it could be projected that these figures would be even higher for rural settings. Skin excisions are a large part of a typical Australian GP's workload, and this proportion is even

greater for Queensland GPs.⁷ Skin excisions are also very costly, with over 1 million skin excisions billed to Medicare annually⁸ at an estimated cost of \$264 million for NMSC in 2000–2001⁹ (9% of total cost for cancer).

The data for the present study was collected incidentally as part of a randomised controlled trial looking at wound management following minor excisions, which has been reported elsewhere.¹⁰ The purpose of examining the present data was to describe the histology of lesions that GPs remove during minor excisions in rural North Queensland, the sites that skin cancers are removed from and the demographics of patients presenting with skin cancer.

Methods

Sixteen GPs from four practices in the Mackay region, tropical North Queensland, Australia (latitude 21°S; inhabitants of Mackay region approximately 75 000) participated in the study. There are a total of 104 practising GPs in the Mackay region. Mackay currently does not have a resident dermatologist or plastic surgeon and has only one designated skin cancer clinic employing two part time doctors. The participating GPs were a self selected group who attended a monthly evidence based medicine

meeting. All GPs were vocationally recognised and the practices involved billed on a fee for service basis with mixed billing. One doctor had recently left general practice and worked at the designated skin cancer clinic. Data collection for the study took place from October 2004 to May 2005. Data was collected from consecutive patients presenting for minor skin excisions. This included all patients who had any skin lesion excised and repaired by direct sutures over the study period. Patients presenting for suturing of a laceration or incision and drainage of a sebaceous cyst were excluded, as were those treated with shave or punch biopsies.

Practice nurses were responsible for collecting data. A body site map was used to define the excision site. Histology was recorded for all patients. At the end of the study, practice nurses were asked to re-examine computer records to fill in any missing data. The principal researcher visited participating GPs and practice nurses to provide training and to ensure that recording was standardised.

The data was collated and analysed using SPSS version.¹² Standard descriptive statistics were applied. Chi-square tests were used for bivariate comparisons between gender and body site and one way analysis of variance with Scheffe adjusted posthoc tests were used for the comparison of age in different histological subtypes. Relative tumour density (RTD) for different body sites was calculated according to Pearl and Scott.¹¹ We defined our number needed to treat (NNT) as the number of benign or dysplastic naevi that were excised per melanoma.

Results

Participating GPs were younger (median age 44 years) and more predominantly women (64%) than average for Australian GPs (median age category 45–54 years; 32% women).¹¹ Data was collected from 1247 consecutive patients who attended for minor skin excisions to the participating doctors between October 2004 and May 2005. Histology was not recorded in 26 cases.

Histology

Squamous cell carcinoma was the most frequently excised lesion, accounting for 25.9% of excisions, and all skin cancers (SCC, BCC

or melanoma) together accounted for 46.7% of excisions. This number increased to 68.9% if solar keratoses were included (*Table 1*). The NNT (naevi excised per melanoma) was 8.4 to 1.

Demographics of patients presenting for excisions

The majority (84.3%) of skin excisions took place in the over 40 years age category, with the mean age 56.9 years (SD +/- 16.3). Slightly more (53.2%) of skin excisions took place in men (*Table 2*). Mean age was significantly different between melanoma, BCC and SCC patients (overall $p=0.006$). Posthoc comparisons showed that melanoma patients were significantly younger than patients with SCC ($p=0.007$).

One BCC was removed from the chest of a 24 year old man; one SCC was removed from the leg of a 24 year old woman; and another SCC from the chest of a 29 year old man. The majority of SCCs were excised from patients 70–89 years of age, and the majority of BCCs were excised from patients 60–79 years of age. Eight (40.0%) melanomas were excised from patients who were younger than 50 years.

Body site distribution of skin cancer

The body site distribution and relative tumour density of skin cancers is shown in *Table 3*. There was little difference in site distributions between men and women ($p=0.7013$ for BCC, $p=0.8415$ for SCC; sample size too small for melanoma).

Discussion

There are several limitations to analysing and generalising our findings. It is known that the age and gender of GPs strongly influences the age and gender of patients who consult them,¹² thus creating potential selection bias. The participating GPs were not representative of Mackay GPs, and patients attending general practice are not representative of the general population.¹² Excisions from the facial region were probably under-recorded in our study, which may have influenced the body site distribution. As there were only 20 melanomas excised in our study the interpretation of NNT is also limited. We did not record our punch or shave biopsy results.

Table 1. Histology of 1247 minor skin excisions recorded

Histology	N	%
Cutaneous melanoma	20	1.6
Basal cell carcinoma	234	19.2
Squamous cell carcinoma	316	25.9
Benign naevus	145	11.9
Dysplastic naevus	23	1.9
Seborrhoeic keratosis	24	2.0
Solar keratosis	271	22.2
Basal cell papilloma	41	3.4
Re-excision	16	1.3
Other*	131	10.7
Missing	26	
Total	1247	100.0

* Other included: cyst (20), sebaceous cyst (11)**, keratosis unspecified (16), lentigo (11), scar tissue/keloid (6), cutaneous tag (6), verruca vulgaris (5), dermatofibroma (8), lipoma (5), keratoacanthoma (9), haemangioma (12), lichen planus (3), dermatitis (4) granuloma annulare (2), pore of winer (1), fibroxanthoma(1), pyogenic granuloma (2), foreign body(1), neurofibroma (2), xanthogranuloma (1), sebaceous hyperplasia (1), psoriasis (1) and sebaceous hyperplasia (3)

** Although incision and drainage of sebaceous cyst was excluded, sebaceous cyst was an incidental finding on pathology report in these 11 patients

Table 2. Age and sex distribution of sample of 1247 patients presenting for skin excisions

	Melanoma (n=20)	BCC (n=234)	SCC (n=316)	All excisions (n=1247)
Mean age (years) (+/- SD)	55 (+/- 15.0)	60.9 (+/- 15.0)	63.8 (+/- 12.5)	56.9 (+/- 16.3)
Age range (years)	27–79	24–98	24–94	5–98
Male-female ratio	0.82:1	1.44:1	1.56:1	1.14:1

Table 3. Body site distribution and relative tumour density (RTD) of skin cancers in sample of patients

Body site	Surface proportion	Melanoma (n=20)	RTD M	BCC (n=234)	RTD BCC	SCC (n=314)*	RTD SCC	Total (n=554)
Upper limb	0.19	3 (15%)	0.78	59 (25%)	1.32	120 (38%)	2.0	182
Lower limb	0.4	7 (35%)	0.85	24 (10%)	0.12	95 (30%)	0.75	126
Trunk	0.32	6 (30%)	0.93	57 (24%)	0.76	29 (9%)	0.28	92
Face, scalp, neck	0.089	4 (20%)	2.25	94 (40%)	4.5	70 (22%)	2.5	168

*Body sites were not recorded for two SCCs

Histology

Of 374 000 Australians treated for skin cancer in 2002, it was estimated that 68% were for BCCs and 32% for SCCs.⁶ An earlier study describing excisions in an Australian general practice reflected this ratio of BCCs to SCCs.¹³ In our study there was a very high yield from all excisions, with 46.7% of all lesions excised being skin cancers, however, more SCCs than BCCs were excised. Our ratio of BCC:SCC was 42.5:52.5% or 0.74:1. However, we did not distinguish between invasive SCC and SCC in situ, both diagnoses having been included in the definition of SCC. This may have elevated our ratio in favour of SCCs.

Another possible explanation of this finding could be that more early BCCs are being treated with cryotherapy or imiquimod by Mackay GPs and hence have either no histopathologic confirmation, or are histologically diagnosed by punch or shave biopsy, the results of which were excluded from our study.

The NNT (the number of benign or dysplastic naevi that were excised per melanoma) of 8.4 was much lower than recent data derived from analysis of billing data from skin cancer clinics (NNT 28.6).¹⁴ In this study, nonpigmented benign lesions were included in the denominator, elevating their NNT. It is difficult to make comparisons in NNT as there appear to be several different definitions. However, in other studies the NNT was found to be between 11 and 29.9 for Australian GPs when based on melanomas and naevi only (as for our

figures) and up to 36 when seborrhoeic keratoses were included.^{15–18} Although we could consider lowering our threshold for excising pigmented lesions, the decision to excise is a complex issue which is influenced by factors such as patient concerns about malignancy, medicolegal concerns about missing melanoma, and likelihood from epidemiological data that a pigmented lesion may be a melanoma.¹⁸

Body site distribution

Although only 22% of SCCs were excised from the face, scalp and neck, and the most common site for excision was from the upper limb (38%), when we calculated the RTD (which takes into account the surface proportion occupied by body sites experiencing different amounts of ultraviolet radiation), face, scalp and neck was the most dominant area. Likewise, although melanomas were more commonly excised from the lower limb, when RTD was calculated, face, scalp and neck was the most dominant area. The largest proportion of BCCs was excised from the head and neck, which was also reflected in the RTD. These findings are consistent with previous studies.^{11,19–21}

Age of patients

The number of SCCs excised appeared to increase steadily with patient age, while the majority of BCCs were excised in the sixth decade; the most common decade for melanomas was 40–49 years of age. This is in keeping with the theory that high

cumulative sun exposure is regarded as a risk factor for SCC,²² while intermittent sun exposure is a consistent risk factor for melanoma,²³ and both factors appear to contribute to the formation of BCCs.²⁴

In this sample of Mackay GPs, there was a very high yield from excisions with close to half (46.7%) of lesions excised being skin cancers. We excised more SCCs than BCCs (0.74:1). Our NNT (benign or dysplastic naevi excised per melanoma) is relatively low compared with other studies of Australian GPs and we could consider lowering our threshold for excision of pigmented lesions.

Conflict of interest: none declared.

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