

Thinner melanomas detected by digital monitoring

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Abstract. Although survival from melanoma is strongly associated with depth of invasion, there is no agreement as to the role of screening for melanoma. We compared the characteristics of 100 melanomas diagnosed through a self-referred whole-body photography and sequential digital dermoscopy imaging service to those diagnosed through traditional methods as represented by data held by the New Zealand Cancer Registry (NZCR). There were 52 invasive and 48 in-situ melanomas; 90% were superficial spreading type, 6% were lentigo-maligna type and 4% were nodular on histology. Forty-eight were diagnosed on the first visit and the rest by serial digital dermoscopy. Thirty-five percent of patients reported having had a previous primary melanoma. In 60%, the patients had been concerned by the lesion, the rest (40%) were detected solely by screening.

Compared to the NZCR, patients diagnosed by whole-body photography and sequential digital dermoscopy screening had thinner melanomas: 69% were less than 0.75 mm Breslow thickness compared to 52% of NZCR melanomas; only 1.9% were thicker than 3 mm compared to 10.8% of NZCR melanomas.

Screening with whole-body photography with sequential digital dermoscopy detects melanoma at an earlier stage than traditional diagnostic methods.

Introduction

Even though survival from melanoma is strongly associated with depth of invasion, there is no agreement as to the role of screening for melanoma. Neither the Cancer Society of New Zealand (2006), nor the Cancer Council Australia (2007), currently recommend routine skin screening for average risk individuals. This is similar to the advice of the US Preventive Services Taskforce (2001). Despite this, there is increasing evidence that melanomas detected during a screening examination are thinner than melanomas not so detected (Koh et al 2006, Geller et al 2003).

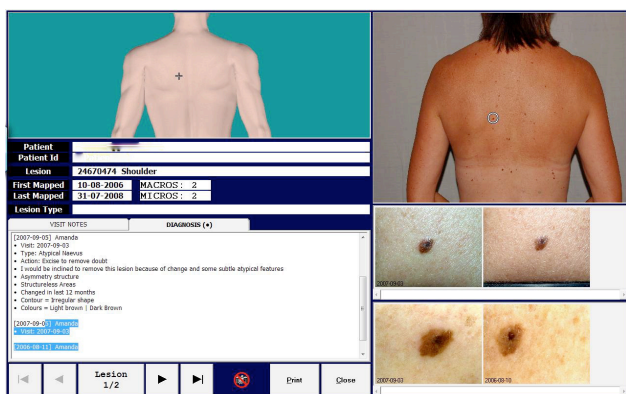


Figure 1. MoleMap diagnosis screen showing sequential dermoscopic images of a thin invasive melanoma.

Skin screening often refers to a visual examination of the whole body; however, it may also be undertaken using whole body photography and digital dermoscopy (Figure 1).

Material and Methods

The database of a proprietary whole body photography and sequential digital dermoscopy screening systems for melanoma (MoleMap NZ, Unit L/383 Khyber Pass Road, Newmarket, Auckland, New Zealand), was queried for patients who had histologically confirmed melanoma, or melanoma-in-situ. Demographic and histological details were obtained and compared to similar data of melanoma patients detected by standard methods as reported to the New Zealand Cancer Registry during a ten-year period (Richardson et al 2008).

Results

There were 52 invasive and 48 in-situ melanomas; 90% were superficial spreading type, 6% were lentigo-maligna type and 4% were nodular on histology. Forty-eight of the melanomas were diagnosed at the first photographic screening and the rest by serial digital imaging. Thirty-five percent of patients reported having had a previous primary melanoma. Sixty percent of the lesions eventually diagnosed as a melanoma had been a concern to the patient, the rest (40%) were detected solely by screening.

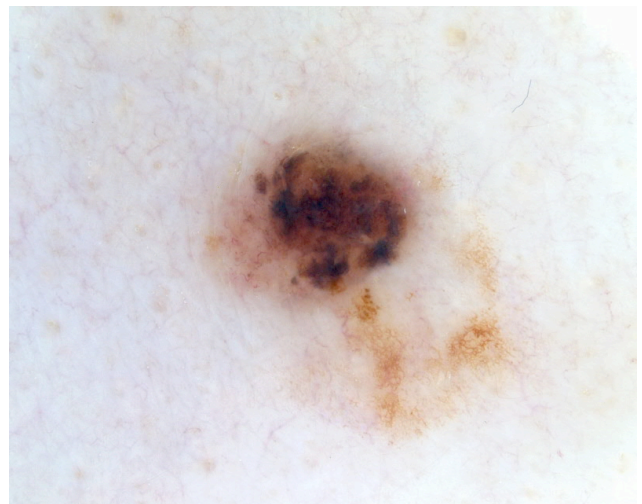


Figure 2. Dermoscopy image of an invasive melanoma.

Compared to the NZCR, patients diagnosed by self-referred photographic screening, were younger (age 51 years versus 59) and more likely to be female (54% versus 50%).

Sixty-nine percent of invasive melanomas detected by digital screening had Breslow thickness <0.75mm compared to 52% of NZCR (Table 1). Only one invasive melanoma (1.9%) in the self-referred photographic screening group was thicker than 3 mm (11% NZCR). The

average Breslow thickness in an invasive melanoma diagnosed on the first screening visit was 0.87 mm (range 0.30-3.35 mm) but was 0.67 mm (0.22-1.60 mm) when detected by serial monitoring.

Thickness (mm)	Digital Dermoscopic Screening	NZCR Registrations
0 - 0.75	36 (69.2%)	8,289 (52.3%)
0.76 - 1.49	11 (21.2%)	3,411 (21.5%)
1.5 - 3.0	4 (7.7%)	2,432 (15.4%)
>3.0	1 (1.9%)	1,707 (10.8%)
Total	52 (100.0%)	15,839 (100.0%)

Table 1. Breslow thickness of melanoma (number of cases and (%)).

Discussion

This study shows that screening by whole body photography and sequential digital dermoscopy may detect melanoma at an earlier stage than traditional diagnostic methods, as determined by historical controls from the New Zealand Cancer Registry. These results are similar to a number of screening studies. For example, over 90% of melanomas detected clinically during the American Academy of Dermatology national screening program, were in-situ or less than 1.5mm in thickness. This was significantly more than that found in their population-based register (Koh et al 2006, Geller et al 2003), and this was without widespread use of digital dermoscopy.

Clinical Practice Guidelines in Australia and New Zealand for the Management of Melanoma (2008) do not support population screening for melanoma. However, de-facto screening is taking place in 'at risk' patients by general practitioners, dermatologists and other specialists (Youl et al 2006).

Summary

As survival from melanoma is strongly associated with depth of invasion, we welcome whole body photography and sequential digital dermoscopy screening programmes such as MoleMap. More research is needed to investigate how to encourage patients with thicker melanomas to attend for screening, especially older men.

References

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