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# Surgical excision margins for melanoma in situ



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## KEYWORDS

Melanoma in situ;  
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**Summary** *Introduction:* Melanoma in situ (MIS) is a non-invasive lesion accounting for up to 27% of all melanomas by Coory et al. (2006).<sup>1</sup> MIS may be a precursor to invasive disease. The Lentigo Maligna (LM) subgroup of MIS carries up to a 4.7% lifetime risk of developing an invasive component by Agarwal-Antal et al. (2002).<sup>2</sup> Surgical excision is recommended however other modalities of treatments are possible. In this study we aim to assess whether histological margins following excision of in situ melanoma has any bearing on recurrence or progression to malignancy.

*Method:* We retrospectively reviewed data accumulated on all melanomas referred to the hospital between the dates of February 2001 to February 2009. We identified all patients with melanoma in situ and for these patients recorded age, sex, anatomical site of lesion, histological type, histological excision margin, recurrence after excision and transformation to malignant melanoma.

*Results:* A total of 2121 patients were identified having been diagnosed and treated for melanoma of which 192 cases were identified with melanoma in situ representing 9.1% of all melanomas treated. 38% of all the lesions were of the LM subgroup. We noted a higher incomplete excision rate in this subgroup ( $p < 0.01$ ) compared to the non-LM subgroup. We only noted two recurrences following complete excision (1.1%) and one recurrence in lesions completely excised with histological margins less than 2 mm (1.4%). Both of the lesions that recurred following complete excision were LM lesions. Recurrence following complete excision of LM was 2.9%.

*Conclusion:* Our data suggests that MIS lesions that were not LM and adequately excised even with narrow margins are unlikely to recur therefore reducing the need for wider excision. LM however poses a more challenging clinical problem not only with the higher inadequate primary excision and higher recurrence rates following excision but also the fact that it occurs in much older patients who may be less able to tolerate more extensive surgery. In keeping with the literature we would suggest treating LM lesions more aggressively if possible.

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## Introduction

Melanoma in situ (MIS) is a non-invasive lesion accounting for up to 27% of all melanomas.<sup>1</sup> A melanoma in situ may be a precursor to invasive disease. Lentigo maligna (LM) is a sub group of melanoma in situ occurring most commonly in sun damaged skin and is rarely seen in young patients. LM is estimated to carry a 4.7% lifetime risk of developing an invasive component.<sup>2</sup> Surgical excision is recommended with guidance offered on the surgical margin of excision. However other modalities of treatments are possible. In this study we aim to assess whether histological margins following excision of in situ melanoma has any bearing on recurrence or progression to malignancy.

## Method

We retrospectively reviewed data accumulated on all melanomas referred to the hospital between the dates of February 2001 to February 2009, regardless of which speciality they were treated by. We identified all patients with MIS and for these patients recorded age, sex, and anatomical site of lesion, histological type, histological excision margin, recurrence after excision and transformation to malignant melanoma. Statistical analyses were performed using the Fishers exact test.

## Results

A total of 2121 patents were identified having been diagnosed and treated for melanoma of which 192 cases were identified with melanoma in situ representing 9.1% of all melanomas treated. There was a slightly higher incidence in female of 53%–47% in males. The average age of patients was 59.1 years.

### Anatomical sites affected

In our study the most commonly affected area was the head and neck region with lesions in this area accounting for 83 out of the 192 lesions treated (43.2%). When sub-categorizing the affected anatomical sites within the head and neck region, the cheek was by far the most commonly affected site. The trunk and lower limbs were the second most commonly affected areas (22% each). The anatomical distributions of lesions between the sexes varied with men having a greater proportion of lesions affecting the head and neck area whilst women were nearly equally affected in the head and neck and lower limb regions. This is undoubtedly related to sun exposure linked to differences in attire between the sexes.

### Lentigo maligna (LM)

Within our series 75 of the cases of MIS were sub classified as LM accounting for 38% of all the MIS. All but 1 of the LM lesions were in sun-exposed areas either in the head and neck region (92%) and the remaining 8% either on the forearm or below knee area. The one lesion occurring in a non-sun exposed area was a lesion on the abdomen. The average age of patients with LM lesions was higher than that of non-LM 71.1 as apposed to 52.2 for non-LM which was statistically significant ( $p < 0.01$ ).

### Treatment: type and location of biopsy

All patients had an initial biopsy, whether this was excision biopsy (94.3%), incision biopsy (1.5%) or punch biopsy (4.2%). The initial treatment occurred in both primary and secondary care settings with 11.5% of patients having their initial biopsy in primary care and the remaining 88.5% being performed in secondary care.

### Incomplete excisions

All of the incision and punch biopsy patients proceeded to have formal excision. Of those patients who had an excision biopsy as their initial treatment or formal excision following on from incision or punch biopsy there were 29 incomplete excisions, resulting in an incomplete excision rate of 15.1% (29/192).

22 of the 29 incompletely excised lesions were LM, 17 of which were on the cheek. In a sub analysis of incomplete excision rates for LM there was an incomplete excision rate of 29.3% (22/75). Incomplete excision rate after primary excision was noted to be higher within the LM subgroup ( $p < 0.01$  with a fisher's exact test)(Table 1).

Of the 29 incomplete excisions 27 patients went on to have a wider excision and of these 5 were still incompletely excised. This resulted in a total of 7 patients who were left with incompletely excised lesions which were then monitored. The mean age of this group of patients was 78 (range 60–87). Two of these incompletely excised lesions recurred with one being widely excised again with clearance and the other treated with topical medication.

### Histological excision margins

Analysis of the 163 patients who had complete excisions as their first formal excision (including those proceeding from incision and punch biopsy) showed the average primary excision margin was 1.51 mm. Of these patients 97(58%) underwent wider excision, which reflected a change in practice in keeping with the 2006 Melanoma guidelines,<sup>22</sup> which recommended excision margins of 2–5 mm for MIS.

**Table 1** Histological subtype distribution and incomplete excision rate.

	No.	Age	<i>P</i> value	Complete excision	Incomplete excision at primary excision	Incomplete excision rate	<i>P</i> value
LM	75	71.1	<0.01	53	22	29.3%	<0.01
Non-LM	117	51.2		110	7	5.9%	

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