Australasian Journal of Dermatology

Australasian Journal of Dermatology (2017) ••, ••–•• doi: 10.1111/ajd.12720

ORIGINAL RESEARCH

The management of dysplastic naevi: a survey of Australian dermatologists

Nerilee Wall,[1] Brian De'Ambrosis[1,2,3] and Jim Muir[2,4]

[1]Dermatology Department, Princess Alexandra Hospital, [2]South East Dermatology, [3]School of Medicine, University of Queensland, and [4]Department of Dermatology, Mater Hospital, Brisbane, Queensland, Australia

ABSTRACT

Background/Objectives: The management of dysplastic naevi based on histopathological grading is a contentious issue. Comprehensive management guidelines are lacking and the approach taken varies between clinicians. The authors sought to understand how Australian dermatologists approach the management of biopsy-proven dysplastic naevi, and the impact of grading of dysplasia upon this management.

Methods: In total, 547 Fellows of the Australasian College of Dermatologists were surveyed and 218 responses were collected (40% response rate).

Results: Although all dermatologists surveyed would re-excise an incompletely removed severely dysplastic naevus, opinion was divided over whether to treat such a lesion as an *in situ* melanoma or a dysplastic naevus, with 55% of respondents using a 5-mm margin and the remainder opting for narrow margin re-excision. When the same lesion was reported to be clear of margins by 1 mm after biopsy and the clinical suspicion for melanoma was high, 44% would re-excise with a 5-mm margin.

Conclusions: The approach of Australian dermatologists to the management of dysplastic naevi varies between clinicians, reflecting the problems raised by the validity of histopathological grading.

Key words: Australian, biopsy, dysplastic naevi, excision, margin, melanoma, severely dysplastic naevi, survey.

WHAT THIS RESEARCH ADDS

- Australian dermatologists vary in their approach to the management of dysplastic naevi.

INTRODUCTION

Controversy and conjecture surround the entity of the dysplastic naevus. Ever since it first was identified in the 1970s[1] much has been published in the literature on its merits as a diagnostic entity, the validity of histopathological diagnosis and its management.[2–4] Despite the conjecture, the entity of the dysplastic naevus is largely accepted into clinical practice.[3]

There has been much debate in recent years over the management of mildly and moderately dysplastic naevi.[5–8] Notably in 2015, Kim and colleagues[5] published the Pigmented Lesion Subcommittee Consensus Statement, which made recommendations on the management of selected mildly and moderately dysplastic naevi based on the current evidence. The optimal management of severely dysplastic naevi remains to be determined.

Some authors have suggested that severely dysplastic naevi should be re-excised due to the risk of a histopathological under-diagnosis or the progression to melanoma of residual lesion.[5] However, the exact recommendation as to whether these lesions should be re-excised, and if so, with what surgical margin, has remained unspecific.

The authors sought to understand how Australian dermatologists approach the management of biopsy-proven dysplastic naevi, and the impact of grading dysplasia upon their management.

MATERIALS AND METHODS

A five-question, multiple-choice survey was distributed via e-mail to all Fellows of the Australasian College of Dermatologists in September 2015. A follow-up email was sent in October 2015 to maximise the response rate. The survey featured questions (see Table 1) on the management of

Correspondence: Nerilee Wall, Dermatology Department, Princess Alexandra Hospital, Brisbane, QLD 4102, Australia. Email: nerilee.wall@health.qld.gov.au

Nerilee Wall, MBBS. Brian De'Ambrosis, FACD. Jim Muir, FACD.

Conflicts of interest: none.

Submitted 25 February 2017; accepted 31 July 2017.

mildly, moderately and severely dysplastic naevi. Respondents were asked to consider a clinical scenario where they biopsied a lesion they suspected was a dysplastic naevus and wished to exclude the diagnosis of melanoma.

RESULTS

Of the 547 Fellows of the Australasian College of Dermatologists 218 responses were collected (40% response rate). The variation of management approaches used is evident in the data collected. Of all respondents, 49% would choose to re-excise a mildly dysplastic naevus involving the margin, while 41% would not. When the lesion was graded as moderately dysplastic 81% of respondents would now choose to re-excise it. When the lesion was graded as severely dysplastic and involving margins 62% would choose re-excision with the aim of complete removal, and 37% would re-excise it utilizing a 5-mm clinical margin. Once the issue of a high clinical suspicion for melanoma was introduced 55% would choose to re-excise with a 5-mm clinical margin. Interestingly, once the lesion had been reported as clear of margins by 1-mm the rate of respondents now wishing to re-excise with a 5-mm margin dropped to 44%.

DISCUSSION

The variation of management approaches seen in these Australian survey results is largely consistent with previously published surveys.[9–12] In common with their American and Canadian counterparts, most Australian dermatologists would choose to re-excise a moderately or severely dysplastic naevus with involved margins. Interestingly, the lack of consensus around the management of severely dysplastic naevi that are clear of margins is also evident in these previous surveys.[9–12] In contrast to previous data, however, Australian dermatologists are significantly more likely to re-excise a mildly dysplastic naevus involving margins than their American and Canadian counterparts. Thus, 49% of Australian clinicians choose this option in comparison with 5–12% in previous American and Canadian surveys[9–12] (Table 2).

Table 1 Summary of survey results

	Percentage of responses	Number of responses
Question 1		
The excisional biopsy confirms a mildly dysplastic naevus. This lesion is not clear of margins. Which of the following is your preferred management?		
No further management is necessary as the lesion is mildly dysplastic	40	89
I would excise the lesion to ensure the lesion is completely excised	49	106
I would only excise any clinically visible residual pigmentation	10	21
I would excise this lesion with a 5-mm clinical margin	1	2
Total responses		218
Question 2		
The excisional biopsy confirms a moderately dysplastic naevus. This lesion is not clear of margins. Which of the following is your preferred management?		
No further management is necessary	11	23
I would excise this lesion to ensure the lesion is completely excised	81	176
I would only excise any clinically visible residual pigmentation	5	10
I would excise this lesion with a 5-mm clinical margin	3	7
Total responses		216
Question 3		
The excisional biopsy confirms a severely dysplastic naevus. This lesion is not clear of margins. Which of the following your preferred management?		
No further management is necessary	0	1
I would excise this lesion to ensure the lesion is completely excised	62	134
I would only excise any clinically visible residual pigmentation	1	3
I would excise this lesion with a 5-mm clinical margin	36	79
Total responses		217
Question 4		
The excisional biopsy confirms a severely dysplastic naevus. Clinically you had been concerned the lesion was a melanoma. The lesion is not completely excised. Which of the following would be your preferred management?		
No further management is necessary	0	1
I would excise the lesion to ensure the lesion is completely excised	45	98
I would only excise any clinically visible residual pigmentation	0	0
I would excise this lesion with a 5-mm clinical margin	55	119
Total responses		218
Question 5		
The excisional biopsy confirms a severely dysplastic naevus. You had been concerned the lesion was a melanoma. It is clear of the margins by 1 mm. Which of the following is your preferred management?		
No further management is necessary	56	122
I would re-excise this lesion with a 5-mm clinical margin	44	95
Total responses		217

Table 2 Comparison of results with previously published surveys; percentage of respondents who would opt to excise the lesion in question

	Australian dermatologists 2015 (N = 218)	U.S. dermatologists 2015[10] (N = 703)	Canadian dermatologists 2015[12] (N = 179)	New England dermatologists 2014[11] (N = 213)	Chicago Dermatologic Society 2009[9] (N = 101)
Mildly dysplastic naevus involving margins	49	12	18.9	5	21
Moderately dysplastic naevus involving margins	81	67	30	61	81
Severely dysplastic naevus involving margins	98	98	86	100	95
Severely dysplastic naevus clear of margins	44	49	65	†	55

†Not surveyed.

Table 3 Studies reporting the incidence of melanoma following re-excision or observation of previously biopsied dysplastic naevi

Study	Dysplastic naevi (n) with involved margins observed or excised	Degree of dysplasia on biopsy	Incidence of melanoma
Kmetz *et al.* (2009)[25]	26 observed for a mean of 6.1 years	Not stated	0
Goodson *et al.* (2009)[26]	69 observed for 2 years	Mild 65, moderate 4	0
Hocker *et al.* (2013)[6]	115 observed for a mean of 17.4 years	Mild 66, moderate 42, severe 7	0
Reddy *et al.* (2013)[7]	127 re-excised	Mild 2, mild-moderate 9, moderate 52, moderate-severe 55, severe 9	2 melanoma *in situ*
Abello-Poblete *et al.* (2013)[8]	91 re-excised	Moderate 75, severe 16	0
Strazzula *et al.* (2014)[18]	495 re-excised	Mild 16, mild-moderate 137, moderate 342	0
Lozeau *et al.* (2016)[20]	623 re-excised	Not stated	10 melanoma *in situ* 3 invasive melanomas
Fleming *et al.* (2016)[19]	191 re-excised; 399 observed for a mean of 5.5 years	Mild 93, mild-moderate 160, moderate 129, moderate-severe 5, severe 5,	6 melanoma *in situ* 1 invasive melanoma

While most Australian dermatologists agree that severely dysplastic naevi involving margins should be re-excised, the view as to whether lesions completely excised on biopsy require re-excision with a surgical margin varies between clinicians. In this survey 44% of Australian dermatologists would re-excise a severely dysplastic naevus that was clear of margins with a 5-mm surgical margin.

The argument for re-excision is driven by diagnostic uncertainty; to which there are several contributing factors. The first is poor inter-observer reliability between dermatopathologists, a well-documented phenomenon, as the histopathological grading of dysplastic naevi is hard to reproduce.[13–16] Limited sectioning (bread loafing) influences diagnostic accuracy.[17] Partially biopsied lesions may not be accurately representative of the whole lesion histopathologically.[18–20] There is a possibility that a residual lesion, not always clinically visible, will transform into a melanoma or is already a melanoma, as demonstrated by studies where, on complete excision, the diagnosis was upgraded to that of melanoma.[7,20–22] Finally, there is the possible impact of a field change associated with melanoma, whereby atypical cells may be found extending beyond the clinically apparent lesion.[23,24]

Collectively the above factors may contribute to underdiagnosis or overdiagnosis. Table 3 summarises the recent literature on reported rates of melanoma diagnosis in the context of biopsied dysplastic naevi with involved margins. These rates vary from 0–2%. Some authors have suggested that 2% is an acceptable incidence of underdiagnosis.[20]

As medical practitioners we should firstly seek to do no harm, and in opposition to arguments for re-excision, larger and more numerous re-excisions are a potential source of increased patient morbidity. At present there is basically no data available on the impact on the patient's survival of re-excision of these dysplastic naevi that could justify this potential morbidity. Re-excisions also increase the financial burden to the healthcare system.

Where diagnostic uncertainty contributes to the impetus to re-excise these lesions, clinicians can reduce this uncertainty by correlating clinical, dermoscopic and pathological evidence, and combine this with immunohistochemical and molecular testing, where applicable.[27] Advances in these modalities may enhance diagnostic accuracy in years to come.

This survey has provided insight into the current practices of Australian dermatologists in the management of dysplastic naevi. This issue is both complex and contentious and the optimal approach to the management of these entities remains to be resolved.

REFERENCES

1. Elder DE, Goldman LI, Goldman SC *et al.* Dysplastic nevus syndrome: a phenotypic association of sporadic cutaneous melanoma. *Cancer* 1980; **46**: 1787–94.
2. Ackerman AB, Mihara I. Dysplasia, dysplastic melanocytes, dysplastic nevi, the dysplastic nevus syndrome, and the relation between dysplastic nevi and malignant melanomas. *Hum. Pathol.* 1985; **16**: 87–91.
3. Duffy K, Grossman D. The dysplastic nevus: from historical perspective to management in the modern era: part I. Historical, histologic, and clinical aspects. *J. Am. Acad. Dermatol.* 2012; **67**: 1 e-16.
4. Rosendahl CO, Grant-Kels JM, Que SK. Dysplastic nevus: Fact and fiction. *J. Am. Acad. Dermatol.* 2015; **73**: 507–12.
5. Kim CC, Swetter SM, Curiel-Lewandrowski C *et al.* Addressing the knowledge gap in clinical recommendations for management and complete excision of clinically atypical nevi/dysplastic nevi: Pigmented Lesion Subcommittee consensus statement. *JAMA Dermatol.* 2015; **151**: 212–8.
6. Hocker TL, Alikhan A, Comfere NI *et al.* Favorable long-term outcomes in patients with histologically dysplastic nevi that approach a specimen border. *J. Am. Acad. Dermatol.* 2013; **68**: 545–51.
7. Reddy KK, Farber MJ, Bhawan J *et al.* Atypical (dysplastic) nevi: outcomes of surgical excision and association with melanoma. *JAMA* 2013; **149**: 928–34.
8. Abello-Poblete MV, Correa-Selm LM, Giambrone D *et al.* Histologic outcomes of excised moderate and severe dysplastic nevi. *Dermatol. Surg.* 2014; **40**: 40–5.
9. Duffy KL, Mann DJ, Petronic-Rosic V *et al.* Clinical decision making based on histopathologic grading and margin status of dysplastic nevi. *Arch. Dermatol.* 2012; **148**: 259–60.
10. Winkelmann RR, Rigel DS. Management of dysplastic nevi: a 14-year follow-up survey assessing practice trends among US dermatologists. *J. Am. Acad. Dermatol.* 2015; **73**: 1056–9.
11. Tong LX, Wu PA, Kim CC. Degree of clinical concern and dysplasia affect biopsy technique and management of dysplastic nevi with positive biopsy margins: results from a survey of New England dermatologists. *J. Am. Acad. Dermatol.* 2016; **74**: 389–91.
12. Sapra P, Rosen C, Siddha S *et al.* Dysplastic nevus: management by Canadian dermatologists. *J. Cutan. Med. Surg.* 2015; **19**: 457–63.
13. Clemente C, Cochran AJ, Elder DE *et al.* Histopathologic diagnosis of dysplastic nevi: concordance among pathologists convened by the World Health Organization Melanoma Programme. *Hum. Pathol.* 1991; **22**: 313–9.
14. Piepkorn MW, Barnhill RL, Cannon-Albright LA *et al.* A multiobserver, population-based analysis of histologic dysplasia in melanocytic nevi. *J. Am. Acad. Dermatol.* 1994; **30**: 707–14.
15. Duncan LM, Berwick M, Bruijn JA *et al.* Histopathologic recognition and grading of dysplastic melanocytic nevi: an interobserver agreement study. *J. Invest. Dermatol.* 1993; **100**: 318S–21S.
16. de Wit PE, van't Hof-Grootenboer B, Ruiter DJ *et al.* Validity of the histopathological criteria used for diagnosing dysplastic naevi. An interobserver study by the pathology subgroup of the EORTC Malignant Melanoma Cooperative Group. *Eur. J. Cancer* 1993; **29A**: 831–9.
17. Koslosky CL, El Tal AK, Workman B *et al.* Reliability of skin biopsies in determining accurate tumor margins: a retrospective study after Mohs micrographic surgery. *Dermatol. Surg.* 2014; **40**: 964–70.
18. Strazzula L, Vedak P, Hoang MP *et al.* The utility of re-excising mildly and moderately dysplastic nevi: a retrospective analysis. *J. Am. Acad. Dermatol.* 2014; **71**: 1071–6.
19. Fleming NH, Egbert BM, Kim J *et al.* Reexamining the threshold for reexcision of histologically transected dysplastic nevi. *JAMA Dermatol.* 2016; **152**: 1327–34.
20. Lozeau DF, Farber MJ, Lee JB. A nongrading histologic approach to Clark (dysplastic) nevi: a potential to decrease the excision rate. *J. Am. Acad. Dermatol.* 2016; **74**: 68–74.
21. Cohen LM, Hodge SJ, Owen LG *et al.* Atypical melanocytic nevi. Clinical and histopathologic predictors of residual tumor at reexcision. *J. Am. Acad. Dermatol.* 1992; **27**: 701–6.
22. Armour K, Mann S, Lee S. Dysplastic naevi: to shave, or not to shave? A retrospective study of the use of the shave biopsy technique in the initial management of dysplastic naevi. *Australas. J. Dermatol.* 2005; **46**: 70–5.
23. Youlden DR, Youl PH, Soyer HP *et al.* Distribution of subsequent primary invasive melanomas following a first primary invasive or *in situ* melanoma Queensland, Australia, 1982–2010. *JAMA Dermatol.* 2014; **150**: 526–34.
24. North JP, Kageshita T, Pinkel D *et al.* Distribution and significance of occult intraepidermal tumor cells surrounding primary melanoma. *J. Invest. Dermatol.* 2008; **128**: 2024–30.
25. Kmetz EC, Sanders H, Fisher G *et al.* The role of observation in the management of atypical nevi. *South. Med. J.* 2009; **102**: 45–8.
26. Goodson AG, Florell SR, Boucher KM *et al.* Low rates of clinical recurrence after biopsy of benign to moderately dysplastic melanocytic nevi. *J. Am. Acad. Dermatol.* 2010; **62**: 591–6.
27. Ferrara G, De Vanna AC. Fluorescence *in situ* hybridization for melanoma diagnosis: a review and a reappraisal. *Am. J. Dermatopathol.* 2016; **38**: 253–69.