

Impact of Pigmented Lesion Referral Pathways on Melanoma Detection

F. Y. Lai, J. F. Yong, F. Al-Hosni, A. Salim, C. Hackett.

Dermatology Department, Tallaght University Hospital, Tallaght, Dublin 24, Ireland.

Abstract

Aim/Objective

To assess the effectiveness of pigmented lesion referral pathways, particularly the National Cancer Control Programme (NCCP) pathway, in reducing waiting times and improving melanoma detection rates.

Methods

We analysed 2 cohort studies encompassing a prospective 3-month analysis (n=362) and a retrospective 6-month analysis (n=43) of melanoma detection at a tertiary dermatology centre in Ireland. Referral source, reason for referral, waiting times, and histopathological outcomes were evaluated via descriptive analysis.

Results

Referrals through the NCCP pathway were associated with shorter waiting times, with 300 (83%) of melanoma patients seen within 12 weeks. Delays in melanoma diagnosis were linked to incidental pickups or incomplete referral information. Outcomes following dermatology review showed that 89 (24.6%) of primary lesions referred required biopsies, however only 11 (3%) were clinically suspicious for melanoma. Histopathological analysis showed a portion of benign lesions or keratinocyte cancers were referred inappropriately through the NCCP pathway.

Conclusion

Improving diagnostic confidence in primary care through education, standardized referral criteria, and tele-dermatology tools may help optimize referral quality and reduce waiting times for patients with suspected melanomas.

Introduction

The rising volume of dermatology referrals for suspicious pigmented lesions has placed considerable pressure on specialist services, resulting in extended waiting times for clinical assessment. This increasing demand can potentially delay the diagnosis and initiation of treatment for malignant melanoma, where early detection is critical to improving patient prognosis and survival rates. Prolonged diagnostic intervals may lead to more advanced disease at presentation, thereby increasing morbidity, healthcare costs, and mortality. Our aim is to evaluate the effectiveness of our pigmented lesion clinic (PLC) referral pathways in Ireland in identifying melanoma accurately and timely, as well as improving the national referral process to provide better dermatological care.

Methods

We analysed 2 cohort studies encompassing a prospective 3-month analysis (n=362) and a retrospective 6-month analysis (n=43) of melanoma detection at a tertiary dermatology centre in Ireland. Referral source, reason for referral, waiting times, and histopathological outcomes were evaluated.

Results

This study combines findings from 2 cohort studies encompassing a prospective 3-month analysis (n=362) and a retrospective 6-month analysis (n=43) of melanoma detection at a tertiary dermatology centre in Ireland. Primary outcomes measured included referral source, reason for referral, and total waiting times. Secondary outcomes included final histopathological diagnosis of lesions requiring biopsy. Referrals were categorized broadly under NCCP, National General Referral (NGR), or generic letters. Descriptive statistics were used to analyse melanoma pickup rates and time-to-assessment.

Prospective analysis

The study assessed 362 patients in total. The types of referrals were categorised as follows:

- National General Referral (NGR) form – 172 referrals (47.5%)
- National Cancer Control Programme (NCCP) form – 170 referrals (47%)
- Generic letters / free text – 20 referrals (5.5%)

The most common reason for referral is a changing mole, N=151 (41.7%). Total waiting times ranged from 1 to 45 weeks. A total of 92 primary lesions referred and 39 incidental lesions

required a biopsy or excision, however this also included non-pigmented lesions. The study found that only 11 (3%) of primary lesions referred and 2 (0.5%) incidental lesions picked up during assessment, were clinically suspicious for melanoma. Referrals through the NCCP pathway were associated with shorter waiting times. Majority of lesions that required a biopsy following dermatology review were only seen after 12 weeks however histopathology results showed that these are more likely to be benign in nature, N=81 (61.8%). There were only 3 cases of melanoma confirmed, all of which were seen within 4 weeks.

Triage waiting time	No. of patients (%)	No. of primary lesions requiring biopsy/excision (%)	No. of incidental lesions requiring biopsy/excision (%)	No. of primary lesions suspicious for melanoma	No. of incidental lesions suspicious for melanoma
<4 weeks	29 (8)	8 (2.2)	2 (0.5)	3 (0.8)	0 (0)
4-12 weeks	79 (21.8)	29 (7.2)	6 (1.6)	4 (1.1)	0 (0)
>12 weeks	254 (70.2)	55 (15.2)	31 (8.5)	4 (1.1)	2 (0.5)

Table 1: Comparison of referral outcomes from pigmented lesion clinics following dermatology review.

Histological diagnosis	Number
Benign naevi	27
Seborrheic keratosis	18
Benign lentiginous lesions	6
Dermatofibroma	4
Inflammatory lesions	16
AK/SCCis	11
BCC/SCC	17
Dysplastic naevi	5
Melanoma	3
AFX/PDS	1
Declined bx/resolved/results not available	23

Table 2: Histological diagnosis of primary lesions referred and incidental lesions following biopsy.

Retrospective analysis

We subsequently analysed 43 patients retrospectively with histologically confirmed melanomas. Initial referral methods and waiting times were noted through chart review with the following results: National Cancer Control Programme (NCCP) pathway – 24 (55.8%); National General Referral (NGR) pathway – 13 (30.2%); free text letters – 6 (14%).

Referrals through the NCCP pathway, 20 (83%) were associated with faster appointments (within 12 weeks). Patients on the longer waiting list (>24 weeks) were triaged accordingly based on referral information provided, 5 out of 8 (63%) were clinically suspicious for non-melanoma skin cancers or were incidental pickups from a general dermatology clinic.

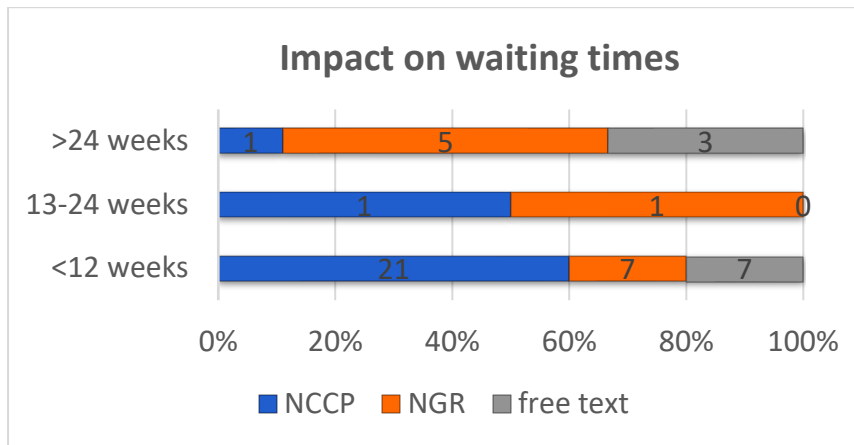


Figure 1: Referral pathways and its impact on waiting times for patients with histologically confirmed melanomas.

Discussion

The implementation of a national standardized pathway for triaging skin cancer referrals confers substantial benefits. Chief among these is the promotion of early detection and timely intervention, which are critical determinants of improved prognosis and survival, particularly in patients with melanoma and other cutaneous malignancies.^{1, 6} Our study has demonstrated that the current triage system effectively stratifies pigmented lesions of concern, enabling appropriate prioritization and timely assessment of high-risk cases.^{1, 5}

Despite these advantages, discrepancies persist between the information provided in referral documentation and findings at clinical assessment. These mismatches contribute to prolonged waiting times for patients with suspected melanoma, thereby potentially delaying diagnosis and treatment.^{2, 4} Furthermore, a considerable proportion of referrals involve benign lesions, which exacerbate the burden on dermatology outpatient services. This remains true despite mechanisms designed to prioritize urgent and high-risk cases.^{3, 5}

Histopathological analysis frequently reveals that lesions initially referred as suspicious for melanoma are instead diagnosed as keratinocyte carcinomas, premalignant conditions, or benign lesions such as seborrhoeic keratoses.^{2, 4, 6} These findings underscore the limited specificity of current referral practices. One contributing factor may be the inadequate dermatology training provided in postgraduate medical education, resulting in variable diagnostic accuracy among referring clinicians.^{7, 8} Referrers should be counselled not to use the pigmented lesion form when referring something that is clinically more suspicious for keratinocyte cancers.

The United Kingdom's two-week-wait (2WW) system has yielded demonstrable benefits in facilitating the early diagnosis and management of melanoma.^{2, 6} In contrast, within the Irish healthcare context, the standardized referral pathway outlined by the National Cancer Control Programme (NCCP) remains underutilized.⁹ This lack of adherence contributes to inconsistent referral quality and associated delays in diagnosis, highlighting the need for greater clinician engagement with national guidelines and enhanced educational initiatives in dermatological assessment.^{7, 9}

Standardised national pathways have a role in aiding triaging of referrals of suspicious skin lesions to reduce melanoma waiting times and should be implemented in referral pathways for tertiary centres. High volumes of benign lesion referrals continue to strain dermatology services, hence better knowledge and education among referrers/primary care physicians to improve their diagnostic confidence are needed to reduce burden on waiting lists. Furthermore, lesions that are clinically suspicious for keratinocyte cancers should not be referred through the NCCP pathway, and more guidance by the NCCP for primary care physicians may be needed to ensure accurate referrals. Referrals accompanied with image or tele-dermatology may help reduce unnecessary face-to-face consultations for benign lesions.

Declarations of Conflict of Interest:

None declared.

Corresponding Author:

Fei Ya Lai,
Dermatology Department,
Tallaght University Hospital,
Tallaght,
Dublin 24,
Ireland.

E-Mail: feiyalai@gmail.com

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