

Surgical Management of Suspicious Melanocytic Lesions in Italy

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Key Words

Melanoma · Nevi · Incisional biopsy · Excisional biopsy · Sentinel lymph node · Surgery · Treatment of melanoma

Abstract

Objective: In melanoma, the surgical approach is important for both diagnosis and therapy. Although surgery is relatively simple, the methods should be performed by experts in melanoma management. We analyze the techniques and methods used in the Italian hospital network for suspicious skin lesions and confirmed melanomas. **Methods:** A nationwide survey was conducted of a representative sample of 120 hospitals with ≥ 200 beds. **Results:** Excision biopsies remove suspected melanomas. However, some approaches to excision margins and sentinel lymph node procedures differ from international protocols. Overall, 21% of centers perform excisional biopsy of a suspicious lesion using 1 cm margins, and 22% of centers perform sentinel node procedures concurrently with removal of primary melanoma. **Conclusions:** Standardized treatment protocols are needed for suspicious lesions and clinically evident melanoma, particularly regarding the critical aspect of excision margins. The sentinel lymph node procedure may be distorted by initial margins that are too wide.

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Introduction

Surgery plays an essential role in the management of melanoma and, in the absence of other effective treatment, is the only valid therapeutic and diagnostic procedure. Although surgery is relatively simple, methods such as incisional, excisional and punch biopsies as well as sentinel lymph node (SNL) procedures should be performed by a melanoma expert [1–3]. The decision to remove a suspicious melanocytic lesion depends on the clinical history and general condition of the patient, clinical-instrumental evaluation of the lesion and the degree of suspicion, as well as the clinician's expertise with melanoma. Biopsy techniques most often used in dermatology are incisional (circular or elliptical punch biopsy), shave and excisional biopsies. Incisional biopsy is generally unadvisable in melanocytic lesions, but a review of the literature reveals no survival difference according to biopsy methods. All national and international guidelines strongly recommend excisional biopsy whenever possible [4–6], because a definitive diagnosis is difficult in partially excised lesions, especially if the sample contains no healthy tissue [5]. Histopathologically confirmed melanoma requires SNL biopsy as a staging procedure.

We analyze the use of different surgical techniques and methods for clinically suspicious skin lesions and confirmed melanoma in the Italian hospital network. We also surveyed surgical margins before and after histopathology, patient selection criteria and surgical techniques for SNL procedures.

Methods

Briefly, a nationwide survey of clinicians responsible for the diagnosis, therapy or follow-up phases of melanoma care in Italian hospitals was conducted. Italian hospitals with ≥ 200 beds ($n = 285$) were subdivided into 145 hospitals with 200–399 beds and 140 hospitals with ≥ 400 beds and a proportionally stratified random sample ($n = 120$ centers), stratified by number of beds and geographic distribution, was selected. Two or three clinicians were interviewed at each center, resulting in approximately 250 interviews and a predicted margin of error – 95% confidence level – of 7.7%.

Based on the findings, centers were grouped by number of new melanoma diagnoses per year into low- and high-volume centers, around the median value of 25. Variables were analyzed in the total sample/total Italian hospitals, and comparisons were made between high- and low-volume centers using Pearson's χ^2 test and the zeta test at 95% confidence level. Detailed methods are presented elsewhere in this supplement [7].

Results

Analysis of the frequency with which the most important surgical procedures (incisional biopsy, punch biopsy, shave biopsy and excisional biopsy) are used reveals that in 50% of hospitals excisional biopsy is 'always performed', while in the remainder of hospitals it is performed 'whenever possible'. There was no difference between high- and low-volume centers. Management of suspicious pigmented lesions and surgical treatment of primitive melanoma are summarized in table 1.

Regarding excision margins, most high-volume centers perform excisional biopsy with 1–2 mm margins (58% vs. low-volume hospitals 35%; $p = 0.001$), whereas low-volume hospitals prefer excisional biopsy with 5 mm margins (high-volume hospitals 24% vs. low-volume hospitals 42%; $p = 0.01$) (table 2). Excisional biopsy margins of 1 cm are preferred in 21% of centers, and there is no statistically significant difference between high- and low-volume centers. When excisional biopsy is not possible, incisional biopsy is performed as described below.

Overall, 40% of hospitals do not perform incisional punch biopsies (table 1), and there is a significant differ-

Table 1. Type of biopsy used in Italian hospitals grouped according to yearly melanoma diagnoses into high-volume (>25) and low-volume (≤ 25) centers

Type of biopsy	Type of center		
	high-volume (n = 56)	low-volume (n = 58)	all (n = 114)
Punch			
Never	22%	58%*	40%
Particular cases	54%*	19%	36%
Large lesions	13%	9%	11%
Diagnosis confirmation	7%	2%	5%
Always	4%	12%	8%
Shaving			
Never	63%	65%	64%
Particular cases	54%	21%	16%
Large lesions	13%	0%	9%
Diagnosis confirmation	6%	0%	3%
Always	5%	6%	6%
Not indicated	2%	2%	2%
Excisional			
Never	0%	0%	0%
Whenever possible	56%	44%	50%
Always	44%	56%	50%

* $p = 0.001$.

ence between high- and low-volume hospitals (22 vs. 58%; $p < 0.001$). They are performed mainly for lentigo on the face, where there was a significant difference between high- and low-volume hospitals (54 vs. 19%; $p < 0.001$; average 36%). There is no statistically significant difference between high- and low-volume hospitals regarding other indications (table 1).

A majority of hospitals (64%) do not perform shave biopsies. When they are used it is for (1) special cases (16%), (2) large lesions (9%), (3) confirmation of clinical diagnoses (6%) or (4) always (6%). Two percent of hospitals did not provide information on the use of shave biopsies.

Surgical removal of clinically evident melanomas (before histological examination) is approached in several ways (table 3). The definition of complete removal includes 1–2 mm margins in 10% of centers, 5 mm margins in 16% and 1 cm margins in 38%. Importantly, 22% of hospitals define complete removal as margins ≥ 1 cm and SNL biopsy. There was no statistically significant difference between high- and low-volume hospitals (27 vs. 18%). Radical removal after incisional biopsy is used in 19% of high-volume hospitals and in 8% of low-volume hospitals.

Table 2. Surgical margins used for taking incisional biopsies in Italian hospitals, grouped according to yearly melanoma diagnoses into high-volume (>25) and low-volume (≤25) centers

Margin	Type of center		
	high-volume (n = 56)	low-volume (n = 58)	all (n = 114)
1–2 mm	58%*	35%	46%
5 mm	24%	42%**	33%
10 mm	18%	23%	21%

* p = 0.001; ** p = 0.01.

Table 3. Mode of removal of clinically evident melanomas before histology results are known in Italian hospitals that perform biopsies grouped according to yearly melanoma diagnoses into high-volume (>25) and low-volume (≤25) centers

Method (margins)	Type of center		
	high-volume (n = 56)	low-volume (n = 58)	all (n = 114)
Complete (1–2 mm)	7%	13%	10%
Complete (5 mm)	16%	16%	16%
Complete (10 mm)	31%	45%	38%
Complete (10 mm) with SNL biopsy	27%	18%	22%
Radical excision after incisional biopsy	19%	8%	14%

Discussion

Excisional biopsy ‘always’ or ‘whenever possible’ for suspicious melanocytic lesions is common practice among Italian hospitals and in line with the recommendations of all national and international organizations. The choice of complete removal – ‘always’ as reported by 50% of centers – requires some careful consideration as there are cases in whom a particular location and/or extension of the lesion necessitate diagnostic certainty before complete excision is performed. It is possible that the use of non-invasive diagnostic techniques such as dermoscopy, which is more common in Italy than in other countries, permits such an approach. On the other hand, wide excision in aesthetically critical areas would be ethically questionable and objectionable to the patient if histological examination reveals that the lesion was benign. Concerning excision margins, most high-volume hospitals perform excisional biopsy with a 1–2 mm margin, whereas low-volume

hospitals prefer to use 5 mm margins. The reason for this difference is not clear, but it is apparently not critical as both are in line with recommendations reported in the literature [8–11]. Particularly outstanding is the fact that 21% of centers choose to perform excisional biopsy with 1 cm margins in case of suspicious lesions. This approach is not completely justified, as it may be considered over-treatment, considering the possible post-surgical implications if diagnosis of melanoma is not confirmed or if melanoma is diagnosed with an extension of >1 cm with relative SNL changes [12–14]. This approach may result from greater confidence in the diagnosis of a melanocytic lesion with peculiar clinical and dermoscopic features, which leads clinicians to convince their patients to undergo radical surgery ab initio. In cases where excisional biopsy is not possible for aesthetic or practical reasons or because of the patient’s general health, incisional punch biopsy rather than shave biopsy is often used for diagnosis.

Another noteworthy finding of the national Melanoma Task Force (META) survey concerns the surgical management of clinically evident melanoma. Complete removal with 1 cm margins, with or without a SNL procedure, is performed before histological examination in nearly two thirds of hospitals (table 3). This level of diagnostic confidence obviously requires some careful consideration, particularly regarding the choice to perform SNL procedure without adequate staging. On average 22% of hospitals perform SNL procedures (27% in high-volume hospitals and 18% in low-volume hospitals) concurrently with removal of the primary melanoma, an approach that needs correction in light of current international protocols [13, 14]. Excision with 1–5 mm margins, as recommended in the guidelines, is performed in only 26% of the Italian hospitals surveyed.

We found that radical excision is performed after incisional biopsy in 14% of centers. This deserves further consideration, particularly if it is not associated with facial or large lesions. Punch or shave biopsies are performed in both high- and low-volume hospitals, either in all cases or to confirm a diagnosis. Incisional biopsy (punch or shave) is performed in most high-volume centers, whereas most of the low-volume centers do not perform these procedures. Punch procedures are performed in more high-volume centers, probably due to the availability of dermatology services with more experience with this procedure. Some centers perform shave biopsy, most likely to provide histological confirmation of a benign diagnosis in selected cases. However, since the survey question addressed suspicious melanocytic lesions, this result should prompt further reflection.

In conclusion, our findings should inspire the national scientific authorities to establish more uniform treatment protocols for managing clinically suspicious lesions and confirmed cases of melanoma, particularly regarding excision margins, an important aspect that can compromise future SNL procedures if initial margins are too wide.

Disclosure Statement

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