(OSMS)- One Step Melanoma Surgery for Nevoid melanoma?

Tchernev G1*, Temelkova I2, Lozev I3, Sergieva S4, Terziev I5, Pirdopska T5, Malev V6

1PhD, Onkoderma- Policlinic for Dermatology and Dermatologic Surgery, Sofia, Bulgaria
2Onkoderma- Policlinic for Dermatology, Venereology and Dermatologic Surgery, General Skobelev 26, 1606, Sofia
3Department of Common, Abdominal and Vascular Surgery, Medical Institute of Ministry of Interior, University Hospital MVR, General Skobelev 79, 1606 Sofia
4Department of Nuclear medicine, Sofia Cancer Center
5Department of Pathology, University Hospital "Queen Ioana"
6Onkoderma- Clinic for Dermatology, Venereology and Dermatologic Surgery, General Skobelev 26

Received: April 23, 2020; Accepted: April 28, 2020; Published: May 01, 2020

*Corresponding author: Professor Georgi Tchernev, PhD, Onkoderma- Policlinic for Dermatology and Dermatologic Surgery, Sofia, Bulgaria, Tel. No: 00359885588424; E-mail: georgi_tchernev@yahoo.de

Abstract

We describe a 48-year-old patient with a present cutaneous pigment lesion located in the left scapular area. About 15 years duration of the finding, as the lesion being suspected clinically and dermatoscopically for cutaneous melanoma. The patient was initially treated with a surgical margin of 0.5 cm in all directions, with a tumor thickness of 3 mm immediately established afterwards. The subsequent surgical session 9 days later (as recommended by the AJCC) included: 1) removal of 4 sentinel lymph nodes: 3 of them located infrascapularly and one axillary apically to the left and 2) re-excision of the primary surgical wound with a safety margin of 1.5 cm in all directions. Lymph node involvement data are lacking and the patient is staged as IIA (T3a N0M0).

Using a worldwide medical database as PubMed/Medline, it could be at least suggested that the determination of the tumor thickness in clinically and dermatoscopically indicative for melanoma cutaneous lesions (especially when they are over 2 or 3 mm) should not be a serious challenge. In pigmented lesions with clear clinical and dermatoscopic data in the direction of cutaneous melanoma, the role of high-frequency pre-operative ultrasound could be essential for reducing the number of surgical sessions from two to one. The case presented is indicative of how lesions with similar clinical and dermatoscopic morphology could be treated and how guidelines can be individually optimized on the basis of the individual clinical experience. In fact, it turns out that one-step melanoma surgery (OSMS) could be a good therapeutic option in a specific type of patient.

Keywords: Nevoid Melanoma; One Step Melanoma Surgical Approach; Individualized Approach; OSMS; Preoperative Echographical Tumour Thickness Measurement

Introduction

According to the current guidelines about performing / conducting SLNB in patients with melanoma, it is recommended to be mandatory for tumor thickness between 1 and 4 mm [1,2]. On the other hand, in the case of cutaneous melanomas with ultrasound or histologically established tumor thickness greater than 4 mm (and lack of enlarged locoregional lymph nodes by ultrasound), the determination of draining or sentinel lymph node/s could be considered controversial by a number of authors [3]. The reason for this clinical behavior is 1) the possible presence of accessory parallel lymphatic pathways on the one hand that the tumor cells have traversed, 2) the tumor cells have undergone, but are not limited to the draining lymph node, or 3) primary haematogenous dissemination that has already occurred without lymph nodes and pathways to be involved [4].

We present a patient with cutaneous melanoma in the area of the back and tumor thickness of 3 mm, discussing the role of sentinel lymph node diagnosis in tumors between 2 and 4 mm thick and the applicability of one step melanoma surgery.

Case report

We present a 48-year-old man with melanocytic lesion in the area of the back with a duration of about more than 15 years (Fig. 1a-b). Over the last 2-3 years the patient has observed a change in the color and size of the lesion. During the dermatological examination we found the presence of a melanocytic lesion located in the back area, clinically/dermatoscopically suspected for cutaneous melanoma (Fig. 1a-b). A primary elliptical excision of the melanocytic lesion was performed with an surgical safety margin of 0.5 cm in all directions (Fig. 1c-e). The surgical defect was closed with single interrupted sutures (Fig. 1d). Subsequent
histological examination revealed evidence of nevoid melanoma with nodular and superficial growth, Breslow tumor thickness 3mm, Clark level III. In a view of the histologically established tumor thickness of 3 mm, re-excision with an additional 1.5 cm in all directions was planned, combined with removal of a sentinel lymph node within one surgical session. Dynamic lymphoscintigraphy for SLN imaging combined with SPECT-CT examination was performed (fig. 2a-2d). The study examined the presence of a sentinel lymph node with infrascapular localization, subcutaneously dorsally to the left of the central axis and three smaller also infrascapular localized lymph nodes measuring <5 mm, located in the immediate vicinity of it, along the course of the lymphatic drainage (Fig. 2a-b). A single lymph node measuring 14.6 mm was found in the area of the left axilla, apically, near the m. subscapularis (Fig. 2d). Additionally, a single lymph node, defined rather as non-sentinel, subject to ultrasound check- up, was identified in the right axillary region (Fig. 2c). Within the second surgical intervention, 1) removal of a single formation in the area of the left axilla, subsequently verified as a neurinoma, was initiated (Fig 3a-b), followed by 2) axillary lymphatic dissection at two levels in the left axilla (Fig. 3c-f, 4a-f). In the next step, the surgical removal of the marked 3 sentinel lymph nodes was performed infrascapularly to the left, (Fig. 5a-f). In the last step, re-excision was performed in the area of primary surgery paravertebral with an additional surgical safety margin of 1.5 cm in all directions (Fig. 6a-d). The re-excision was elliptical and the closure of the defect was staged with single subcutaneous sutures (Fig. 6e), followed by single interrupted skin sutures (Fig. 6f). Subsequent histological examination of the removed lymph nodes reveal only sinus histiocytosis of the lymph nodes. The diagnosis of melanoma stage IIA (T3aN0M0), was made. With regard to the mildly positive lymph node in the right axillary region, the patient is subject to regular ultrasound monitoring and follow- up. Interferon or BCG vaccine therapy was planned after undergoing an oncology committee.

Fig. 1a-b: Clinical view: melanocytic lesion in the area of the back with irregular shape and areas of normal as well as enhanced pigmentation.
Fig. 1c-e: Primary elliptical excision of the melanocytic lesion with an operative safety margin of 0.5 cm in all directions.
Fig. 1d: Postoperative view: surgical defect was closed with single interrupted sutures.
Fig. 2a-d: Dynamic lymphoscintigraphy for SLN imaging combined with SPECT-CT examination: presence of a sentinel lymph node with infrascapular localization, subcutaneously dorsally to the left of the central axis and three smaller also infrascapular localized lymph nodes (a-b); single lymph node, defined rather as non-sentinel, identified in the right axillary region (c); single lymph node in the area of the left axilla, apically, near the m. subcapularis (d).

Fig. 3a-b: Removal of a single formation in the area of the left axilla, subsequently verified histopathologically as a neurinoma.

Fig. 3c-f: Axillary lymphatic dissection at two levels in the left axilla.
Fig. 4a-e: Axillary lymphatic dissection at two levels in the left axilla.

Fig. 4f: Postoperative view: axillary drainage and closure of the surgical defects with single interrupted sutures.

Fig. 5a-e: Surgical removal of the marked 3 sentinel lymph nodes infrascapularly to the left.

Fig. 5f: The infrascapular surgical defect closed in stages by single interrupted sutures.
(OSMS)- One Step Melanoma Surgery for Nevoid melanoma?

Discussion

The present case was treated according to the recommendations of the AJCC during two surgical sessions (1, Table 1). We raise and discuss the possibility of One Step Melanoma Surgery in the patient described (OSMS) (Table 2) [5].

In the latter case, clinical and dermatoscopic data were available on possible “thin” cutaneous melanoma developed on the basis of pre-existing melanocytic nevus (Fig. 1a-b). If we assume hypothetically that the combination of clinical examination and dermatoscopic findings would be accompanied by additional preoperative ultrasound measurement of tumor thickness, the subsequent clinical approach for melanoma would undoubtedly be more complex or optimized. That is, ultrasound preoperative data would then be available to confirm undoubtedly an available tumor thickness of more than 2 mm.

Higher-frequency (50- to 100-MHz) ultrasound is thought to be very high in overestimate tumor thickness if there are infiltrating lymphocytes or nevus remnants present as well as in the patient presented by us, in which we are talking about nevoid-associated melanoma [6]. Preoperative determination of this tumor thickness together with a high-frequency ultrashort combined with SPECT-CT and lymphoscintigraphy would result in the possibility of reducing the number of surgical interventions in a single operation under general anesthesia. Namely, excision of the melanocytic lesion with a direct field of 2 cm surgical safety in all directions, combined with SLND detection and removal, as suggested by the OSMS guides (Table 2) [5]. This, in turn, is a sparing approach for patients, both financially and emotionally.

**Fig. 6a-d:** Re-excision in the area of primary surgery paravertebral with an additional surgical safety margin of 1.5 cm in all directions.

**Fig. 6e-f:** Staged closure of the defect followed by single interrupted skin sutures.
Table 1: AJCC recommendations (Swetter 2019)

| Breslow thickness | Recommended surgical margins |
|-------------------|-----------------------------|
| Melanoma in situ  | 0.5 cm (primary excision with 0.5 cm in all directions, followed by secondary excision) |
| <1mm              | 0.5 cm primary excision (followed by secondary excision with 0.5 cm in all directions) |
| 1.01 - 2.0mm      | 0.5 cm primary excision (followed by secondary excision with 0.5 cm - 1.5 cm with SLND) |
| 2mm-4mm           | 0.5 cm primary excision (followed by secondary excision with 1.5 cm in all directions with SLND) |
| >4mm              | 0.5 cm primary excision (followed by secondary excision with 1.5 cm in all directions without SLND if nodes not enlarged/matter of discussion) |

Table 2: One Step Melanoma Surgery (OSMS) recommendations (Tchernev 2019)

| Breslow thickness | Recommended surgical margins |
|-------------------|-----------------------------|
| Melanoma in situ  | 1.0 cm (clinical/dermatoscopical evaluation obligatory/ if possibility for echographical examination -from benefit) |
| <1mm              | 1.0 cm (clinical/dermatoscopical evaluation obligatory/ if possibility for echographical examination -from benefit) |
| 1.01 - 2.0mm      | 1.0 cm (with SLND), (echographical tumour thickness measurement preoperatively), clinical and/or dermatoscopical evaluations must be in favour of cutaneous melanoma |
| 2mm-4mm           | 2.0 cm (with SLND), echographical tumour thickness measurement preoperatively, clinical and/or dermatoscopical evaluations must be in favour of cutaneous melanoma |
| >4mm              | 2.0 cm |
|                   | a) no enlarged lymph nodes - 2 cm resection is sufficient, |
|                   | b) in the presence of enlarged lymph nodes- to be removed together with the reexcision of the primary tumourous tissue! |
|                   | (Clinical and/or dermatoscopical evaluations must be in favour of cutaneous melanoma) |

References

1. Swetter S, Tsao H, Bichakjian C, Lewandowski C, Elder D, Gershenwald J, et al. Guidelines of care for the management of primary cutaneous melanoma. J Am Acad Dermatol. 2019;80(1):208-250.
2. Ahmad F, Su S, Gross N. The Role of Sentinel Lymph Node Biopsy in the Management of Cutaneous Malignancies. Facial Plast Surg Clin North Am. 2019;27(1):119-129.
3. Wong S, Faries M, Kennedy E, Agarwala S, Akhurst T, Ariyan C, et al. Sentinel Lymph Node Biopsy and Management of Regional Lymph Nodes in Melanoma: American Society of Clinical Oncology and Society of Surgical Oncology Clinical Practice Guideline Update. J Clin Oncol. 2018;36(4):399-413.
4. Tchernev G, Temelkova I, Stavrov K. One Step Melanoma Surgery (OSMS) Without Using Ultrasonography for Preoperative Tumour Thickness Measurement? - "A Question that Sometimes Drives Me Hazy: Am I or Are the Others Crazy!". Open Access Maced J Med Sci. 2018;6(6):1085-1090.
5. Tchernev G, Temelkova I. The One Step Melanoma Surgery (OSMS): A New Chance for More Adequate Surgical Treatment of Melanoma Patients!? Open Access Maced J Med Sci. 2019;7(3):504-506.
6. Psaty E, Halpern A. Current and emerging technologies in melanoma diagnosis: the state of the art. Clin Dermatol. 2009;27(1):35-45.