

## THE ROLE OF THE GENERAL SURGEON IN THE MANAGEMENT OF PATIENT WITH MALIGNANT MELANOMA

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### Abstract

*Malignant melanoma is now a major public health problem. Annually, in the European Union about 10 cases of malignant melanoma occur per 100,000 inhabitants. Every 57 minutes, worldwide, a person dies due to the existence of a malignant melanoma. I report the case of a woman, C.V., aged 49, who comes to the emergency room of the University Emergency Hospital of Bucharest, for a posttraumatic abdominal pain syndrome (abdominal contusion caused by a traffic accident 5 days earlier); the thorough clinical examination performed in order to assess the posttraumatic lesions reveals no injury marks, and the paraclinical evaluations reveal no visceral injuries. During the clinical examination, the medical team on call identifies a dark brown pigmented tumor with a diameter of about 1 cm on the posterior face of the lower third of the left leg, which raises the suspicion of malignancy. The patient is referred to a dermatology department. The corroboration of the dermatological clinical examination with the specific paraclinical investigations led to the decision to perform the surgical excision of the pigmented tumoral formation with the repair of the defect with a skin graft. The histopathological examination of the resected piece confirms the diagnosis of malignant extensive superficial melanoma. The patient returned to the department of general surgery with the indication for a surgical evaluation. The present paper attempts to answer the question: „What is the role of the general surgeon in the management of patients with malignant melanoma?” In the case of the presented patient, the role of the general surgeon was a complex one, with major prognostic implications.*

**Keywords:** *malignant melanoma, achromic melanoma, acral melanoma*

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### Introduction

Malignant melanoma is now a major public health problem. In the EU, annually about 10 cases of malignant melanoma occur per 100,000 inhabitants. Moreover, it is believed that by 2015, the estimated risk of development of this pathological entity will reach 1:50, so that 1 in 50 men or women will be diagnosed with cutaneous melanoma during their lifetime [1].

Every 57 minutes, worldwide, a person dies due to the existence of a malignant melanoma [1]. On the other hand, this neoplasia in women is considered to have the fastest rate of evolution after lung cancer.

Although melanoma accounts for only 10% of all the diagnosed skin cancers, it is believed that at least 65% of the deaths related to skin cancers are attributed to melanoma. The mortality due to cutaneous melanoma is approximately 2/100,000 inhabitants / year for

women and 3/100,000 inhabitants / year for men, with small geographical variations. [2] In the early stages (stage IA), the prognosis of the patients with melanoma is a favorable one with a survival rate of 97% and 93% estimated after 5 years and respectively 10 years. On the other hand, the survival after 1 year and 5 years for patients with distant metastases (stage IV) at the time of the diagnosis is of 45% and respectively 12%. [3]

Four types of melanoma are described: *extensive superficial melanoma* (by far the most common type - about 70% of all the cases), *malignant lentigo melanoma*, *acral melanoma* (in the limbs) and *nodular melanoma*. A category of melanoma that can not be classified are: *nevocytoid melanoma*, *varicose melanoma*, *melanoma developed on pigmented nevus*, *desmoplastic melanoma*, *melanoma on fusiform cells*, etc. [4]

The clinical form of malignant melanoma that poses the most frequent difficulty for the clinician in making its diagnosis is represented by the achromic melanoma (without color).

For the diagnosis of melanoma the „ABCDE rule” should be taken into account: A - *asymmetry* (asymmetric lesion), B - *border* (lesion with border irregularity), C - *color* (lesion of heterogeneous color, brown to dark brown, with depigmented areas), D - *dimension* (lesion has a diameter greater than 6 mm), E - *elevation, enlargement* (lesion elevation greater than 1 mm, with a recent increase more than 1 cm). [5]

## Case presentation

This paper reports the case of a woman, C.V., aged 49, who comes to the emergency room of the University Emergency Hospital of Bucharest, for a posttraumatic abdominal pain syndrome (abdominal contusion resulting from of a traffic accident 5 days earlier).

The thorough clinical examination to assess the posttraumatic lesions reveals no injury marks, and the paraclinical evaluations reveal no visceral injuries. During the clinical examination, the medical team on call identifies at the posterior face of the lower third of the left leg a tumor of dark brown pigment with a diameter of about 1 cm, with a red spot in relief

of 0.5 cm diameter, showing an inferior-medial dark brown pigmented macula.

In the medical history, the patient describes the development of a skin lesion about 3 years earlier and its insidious evolution until about two months ago, when it changed its aspect. The patient is referred to a dermatology department for a diagnostic assessment and the establishment of a correct therapeutic approach.

The dermatological clinical examination, supplemented by the dermatoscopic one reveals a red spot in relief, with a 0.5 cm diameter, of soft consistency, well defined, with irregular edges showing an inferior-medial dark brown pigmented macula with a 0.5 mm diameter, well defined, with irregular edges, asymmetrical.

The surgical excision of the pigmented tumor formation on the posterior face of the left leg under local anesthesia with 1% lidocaine is performed with repair of the created defect by a skin graft taken from the left thigh.



Figure 1 - Postoperative aspect of the tumor excision with skin graft

Although the clinical data were not specific to a malignant melanoma, the excision was decided with a margin of normal skin of about 1 cm. This was the first therapeutic act performed by the medical team which helped to minimize the suffering of the patient, by avoiding a second surgical procedure.

The histopathological diagnosis is of an extensive superficial melanoma, focal pigmented, characterized by stage IV Clark and Breslow depth of 1.26 mm. It also indicates that the tumor is 9 mm away from the nearest lateral boundary resection, confirming the complete resection of the tumor.

*What is the correct management of such a case?*

In order to perform an immunohistochemical test and a second histopathological test, the lamellae and the paraffin block are sent to a reference center. The histopathological test reveals superficial spreading melanoma, with radial growth phase, non-tumorigenic, invasive in the papillary dermis (Clark stage III), Breslow depth 0.9 mm, focal ulcerated, developed on a nevocellular nevus lesion. It was also noted the absence of intravascular tumor emboli on the examined fragment, and the complete resection of the tumor on the examined fragment.

The immunohistochemical analysis reveals the presence of specific molecular markers at the level of the melanocytic tumor component and their absence in the mature dermal component.

Surprisingly, the patient returns to the Department of General Surgery and Emergency III of the University Emergency Hospital Bucharest with the indication for a surgical assessment. After the examination of the medical documents the following diagnostic completion protocol is established. Thus, the first objective of the diagnostic strategy was to identify the sentinel ganglion and the presence of possible metastases. In this respect, lymphoscintigraphy and computed tomography (head, thorax, abdomen and pelvis) are performed.

The tomographic examination reveals the absence of secondary determinations and the existence of a left hepatic lobe hemangioma, diffuse fibrous uterus and a millimeter area of bone condensation, benign in appearance, in the T6 vertebra.

Lymphoscintigraphy with specific tracer reveals at the level of the left inguinal area a hyperfixed image with the aspect of a metabolically active ganglion. In the same region there are three highlighted fixing ganglia of medium intensity - possibly metabolically active. The lymphoscintigraphy concludes the presence of the aspect of left inguinal ganglion possibly secondary (in various stages of formation).

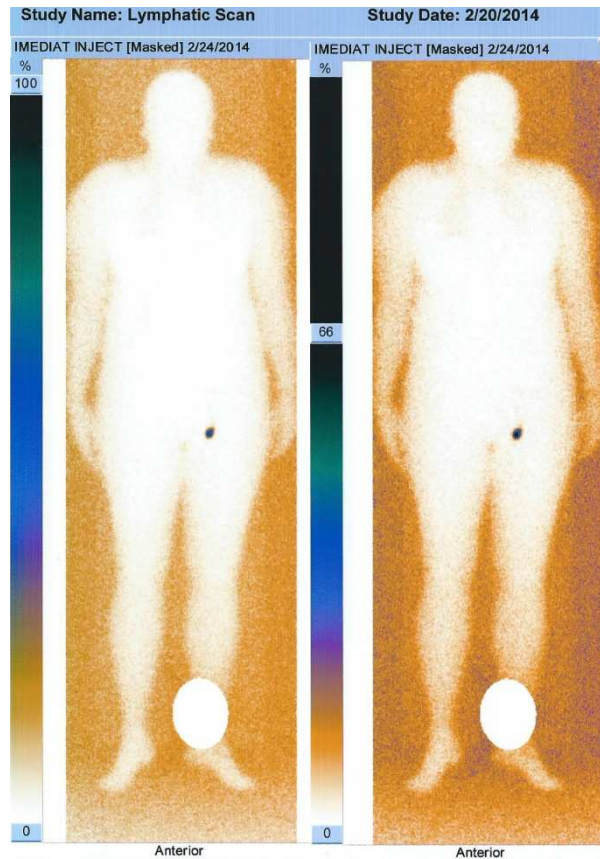


Figure 2 - Left inguinal area with the aspect of a metabolically active ganglion image revealed on the lymphatic scan.

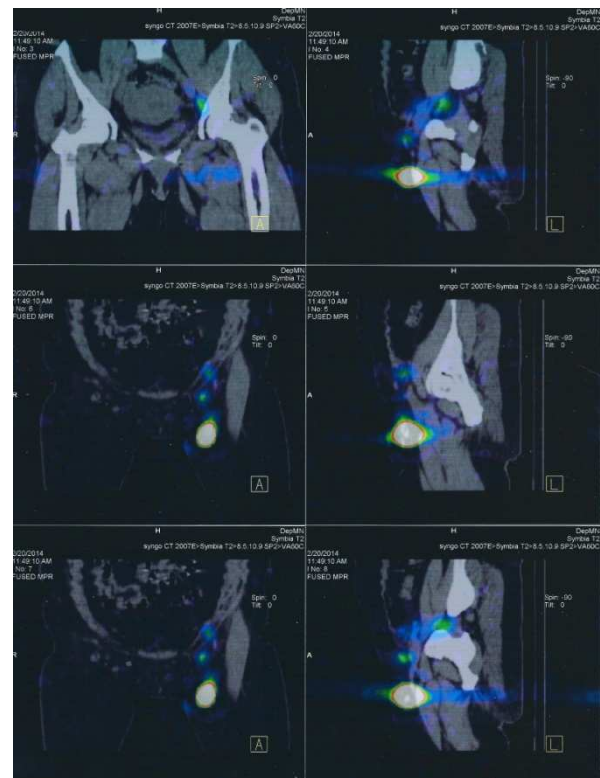


Figure 3 - Possible secondary left inguinal lymph nodes

A left inguinal lymphadenectomy is performed. The pathological exam reveals a sinus histiocytosis with fatty degeneration.



Figure 4 - The aspect of the left inguinal lymphadenectomy incision with the drain tube

After the evaluation of the case by a multidisciplinary team (surgeon, pathologist, oncologist) the decision was made to limit the therapy at this level, with the indication of a regular patient follow-up 4 times / year in the first two years and once / year after this period.

## Discussions

There are no defining elements for the diagnosis of malignant melanoma, some formations (e.g. achromic melanoma) having a diagnosis so difficult that it is accepted that 30% of melanomata are not clinically detected by the dermatologist.

The diagnosis of achromic acral melanoma is very difficult, because it is often confused with squamous cell carcinoma or warts.

The late diagnosis correlates with the impossibility of establishing the appropriate treatment, which explains the increased mortality among the patients with achromic melanoma.

The pathological lesions are extremely varied and macroscopically misleading, resulting in the late diagnosis of malignant melanoma.

The evolution of the cases with malignant melanoma depends on the stage of the disease at the time of the diagnosis.

The pathologic exam is the most important prognostic factor and a fairly predictive one for the orientation for the possible oncological therapies.

The case is part, in terms of the topography of the lesion, of the neoplastic pathology pattern addressed in this paper by the fact that the

preferred location is in the lower limbs in female patients and in the trunk in the case of male patients.

## Conclusions

- Although the patient was assessed for the first time by a medical team for an independent pathology from the subsequent diagnosis, the thorough clinical examination performed by the doctor on call and the complete attention of a student of the Faculty of Medicine in conjunction with the wealth of information provided by the patient contributed substantially to the evolution of the case.

- The clinical examination of any patient should not be limited even if it is an emergency case to the targeted assessment of the reasons for the presentation to the emergency room.

- In case of a tumoral formation or skin pigmentation, the examining physician must identify the presence of changes, focusing on the size, shape, color and symptoms (bleeding, pruritus).

- The history collected regarding the changes occurred during the past months in the underlying skin formation is an important indicator for a faster, complete and accurate diagnosis, since the clinical diagnosis of cutaneous malignant melanoma continues to be based on direct visual examination.

- Although the clinical data were not specific to a malignant melanoma, the dermatologist's extensive experience in the management of patients with malignant melanoma dictated the excision with a margin of normal skin of about 1 cm. This was the first defining therapeutic act performed to psychologically alleviate the suffering of the patient, by avoiding a second surgical procedure.

- In a general sense, the role of the general surgeon in the management of the patient with malignant melanoma is complex: on the one hand the correct staging of the disease, on the other hand the correct surgical treatment, whose objectives are the prevention of local recurrence and of the persistence of the disease.

- The early diagnosis, the accurate imaging staging and the appropriate surgical approach in a multi-disciplinary medical organization have been the infrastructure for the favorable evolution of the patient.

▪ The periodical follow-up of patients with malignant melanoma is mandatory in order to prevent the risk of developing a second primary melanoma (3.5 to 4.5% risk), of a secondary melanoma, of recurrences or metastases. The American Academy of Dermatology recommends regular patient follow-up 1-4 times / year during the first 2 years, depending on the Breslow index, and 1-2 times / year after this period.

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### **Peculiarity of the case**

The peculiarities of the case are multiple and dependent on the general surgeon's role in the management of patients with malignant melanoma. The early clinical diagnosis established in the emergency room for a pathology independent of the surgical pathology (a skin tumor lesion), the proper staging as well as the prevention of the local recurrence of the disease were the defining elements for the patient's favorable evolution. Moreover,

mention should be made that the achromic melanoma can be difficult to diagnose even by dermatologists and even more difficult by the general surgery team.

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### **References**

- [1] American Cancer Society Cancer Facts and Figures, 2013.  
<http://www.cancer.org/research/cancerfactsfigures/cancer-facts-figures-2013>;
- [2] MacKie RM, Bray C, Vestey J et al. Melanoma incidence and mortality in Scotland 1979–2003. *Br J Cancer* 2007; 96: 1772–1777;
- [3] Balch CM, Gershenwald JE, Soong SJ, et al. Final version of 2009 AJCC melanoma staging and classification. *J Clin Oncol.* 2009; 27(36): 6199-6206;
- [4] Melanoma 101: Introduction to a Deadly Skin Cancer, Alan Rockoff, Michael S. Lehrer, Frederick Hecht, Melissa Conrad Stöppler, 2014;
- [5] Garbe C, Hauschild A, Volkenandt M et al. Evidence-based and interdisciplinary consensus-based German guidelines: systemic medical treatment of melanoma in the adjuvant and palliative setting. *Melanoma Res* 2008; 18: 152–160.