Original Article

Malignant Nail Melanoma In A Case Report

Jessica Magali Herrera Abarca*(1), Angel Javier Peñafiel Chávez (1)

(1) Department of Medicine Faculty of Public Health at Escuela superior Politécnica de Chimborazo, zip code 060150 Riobamba – Ecuador.
ORCID:
Angel Javier Pñafiel Chavez: http://orcid.org/0000-0002-5483-8680
Jessica Magali Herrera Abarca: http://orcid.org/0000-0001-9066-3278
* Correspondence to: Jessica Magali Herrera Abarca, Medical School. School of Public Health. Escuela Superior Politécnica de Chimborazo. Panamericana Sur Km 1 ½, código postal 060150, Riobamba-Ecuador, correo electrónico: magali.herrera@espoch.edu.ec
DOI: 10.47750/pnr.2023.14.02.009

Abstract

Invasive malignant melanoma is one of the most aggressive neoplasms, being responsible for 90% of skin cancer deaths; its incidence has been increasing during the last decades worldwide. The progression of the disease can occur in the form of local recurrence, lymphatic spread to regional lymph nodes, or by hematogenous metastasis to distant sites: skin, organs and bone among others. Regional and distant metastases are present in approximately 10% of patients with melanoma at the time of diagnosis, leading to a worse prognosis. Survival at 5 and 10 years in patients with distant metastases is 12%-15% and 8%, respectively. The case is presented of a patient who had a nail lesion treated for several years by a podiatrist, the lesion was worsening, thus reaching an oncological hospital, where she received adequate treatment and had total remission, continuing in medical controls.

Keywords: Invasive malignant melanoma, lymph node metastasis, skin cancer.

RESUMEN

El Melanoma Maligno invasor es una de las neoplasias más agresivas, siendo responsable del 90% de las muertes por cáncer de piel; Su incidencia fue incrementándose durante las últimas décadas a nivel mundial. La progresión de la enfermedad puede presentarse en forma de recurrencia local, por diseminación linfática hacia los ganglios regionales, o por metástasis hematógena a sitios distantes: piel, órganos y hueso entre otros. Las metástasis regionales y a distancia, se presentan aproximadamente en 10% de los pacientes con melanoma, al momento del diagnóstico, conllevando peor pronóstico. La supervivencia a 5 y 10 años en pacientes con metástasis a distancia es de 12%-15% y 8%, respectivamente. Se presenta el caso de una paciente que presentó una lesión ungueal tratado por varios años por podólogo, la lesión fue empeorando, llegando así a un hospital oncológico, en donde recibió tratamiento adecuado y tuvo remisión total, continua en controles médicos.

Palabras Clave: Melanoma Maligno invasor, Metástasis ganglionar, Cáncer de Piel.

1. INTRODUCTION

Cutaneous melanoma is a malignant tumor that is the consequence of the neoplastic transformation of the melanocyte. This neoplasm is the most relevant of the cutaneous cancers because it is responsible for the great majority of deaths.

During the last decades, a constant increase in its incidence has been observed, which has been attributed to changes in sun exposure habits during the second half of the 20th century. It is also assumed that part of this may also be due to the overdiagnosis of borderline lesions that were once diagnosed as benign.

The aim of publishing this case report is to provide an update on the different aspects of cutaneous melanoma, including epidemiology, etiopathogenesis, clinic, staging and treatment.

Although it is difficult to establish who was the first to describe melanoma,

William Norris is credited with describing the first case of melanoma in English literature in 1820 (1). However, it was René Laennec who first used the term 'melanosis' in an 1812 issue of the Bulletin de la Faculté de Médecine de Paris (1).

The characterization of melanoma and its prognosis was established mainly in the second half of the century thanks to the work of Alexander Breslow, Wallace H. Clark and Vincent J. McGovern, which described many of the prognostic factors that have remained to this day (1).

Melanoma is not the most common skin cancer. Its incidence is third behind the incidence of basal cell carcinoma and squamous cell carcinoma.

However, melanoma is responsible for most of the deaths due to skin cancer (2-4).

Regarding other cancers, in countries where there is a high incidence, such as Australia and New Zealand, melanoma is the fourth most frequent cancer when both sexes are considered together, and the third most frequent cancer when both sexes are considered separately. In other countries, such as the United States, the incidence of melanoma varies, being the fifth most frequent cancer in men and women. varies, being the fifth most frequent in men and the sixth in women. However, in Spain, where the incidence is lower, it is the thirteenth most frequent tumor in men and the seventh in women (5).

Incidence worldwide differences have been observed between different countries depending on latitude, sex, age and race and this is a consequence of the different types of skin and the intensity of ultraviolet (UV) radiation (6,7). In addition, it has been found that there has been an increase in incidence worldwide during the last decades, especially in the Caucasian population of Western countries (2,7, 8, 9,10), with an increase of 3.7%, doubling the number of cases every 10-20 years (7, 11-15).

This increase in incidence is due to several factors. On the one hand, the population, has changed its habits concerning natural and artificial UV radiation (7,9, 16-18). On the other hand, due to early detection campaigns and improved registration (for example, in the United States and Australia it is a notifiable disease) (19,20). In Europe, the highest incidence is found in countries farther from the equator, in contrast to the United States and Australia (2,6,7,17,21). The lowest incidence rates are in the central and southern countries, especially in the Mediterranean region (7,22). countries, especially the Mediterranean region (7,22). These differences are due to the different combination of environmental factors such as the amount and pattern of sun exposure as well as constitutional factors such as skin type.

The population of the northern countries is mostly light-skinned with a pattern of intense summer exposure, in contrast, in the Mediterranean area the population with darker skin type predominates and therefore with greater protection, that is, more adapted to the environment and with a lower risk (2,7,17,23).

Incidence by sex and age: in those countries where the incidence of melanoma is high, such as the United States or Australia, melanoma predominates in males. In contrast, in countries where the incidence is low, such as European countries, the female sex predominates (6, 17). It has been observed that sex seems to have an impact on the site of melanoma birth (7). In men, 55% are located on the trunk, while in women 42% are located on the lower extremities, although these frequencies vary over time related to sun exposure habits. On the other hand, melanomas of the head, neck and upper extremity have a similar frequency of occurrence in both sexes (6).

Mortality

The mortality rate is low, but a slight increase has been observed in the Caucasian population in recent decades. In countries with a high incidence, such as Australia and New Zealand, it is the fifth most common cancer in men and the ninth in women. In the United States, it is thirteenth

cancer in men and the sixteenth in women. On the other hand, in Spain, where the incidence is lower, it is the seventeenth tumor that causes the most deaths in men and the seventeenth in women (5).

The case is presented of a patient who initially had difficulty in diagnosis due to the lack of a skin specialist, and the patient consulted only a podiatrist. However, once correctly diagnosed, she had a satisfactory evolution, with the appropriate treatment.

2. TIMELINE

Female patient of 79 years old, who 2 years ago presented a nail lesion type dark spot on the fifth arch of the left foot, treated since then with podiatrist after 6 months before the consultation the picture evolves with increasing size of the lesion and change of color to blackish begins to ooze and bleed, So she went to the Dermatology Service of SOLCA Chimborazo Hospital where an incisional biopsy was performed, which was compatible with invasive malignant melanoma of the nail, and was sent to perform immunohistochemistry to confirm the diagnosis. The patient is evaluated in conjunction with Oncologic Surgery and clinical oncology, and is sent to perform simple and contrasted tomography of the skull, chest, abdomen and pelvis where a possible metastatic lymph node is observed at the left inguinal level, along with the confirmatory results of the IHQ is proceeded to perform an amputation of the affected finger + superficial and deep inguinal lymphadenectomy, The post-surgical histopathological diagnosis reports Malignant Nodular Melanoma, the tumor reaches the reticular dermis measuring 4 mm thick, surgical edges of the amputation negative for tumor infiltration, deep inguinal lymph nodes mature adipose tissue negative for malignancy nodes are not isolated. We proceed to perform superficial and deep lymphadenectomy which reports: tissue lymph nodes: 20 nodes are isolated of which 7 are positive for tumor infiltration, stage pT3a pNib PMx STAGE IIIB.

Finally, the BRAF gene mutation is sent to be studied, in 3 months of control with CT S/C Thorax, Abdomen and pelvis.

Oncological guidelines Immunotherapy Nivolumab and/or Pembrolizumab.

After monthly, quarterly, semiannual and finally annual controls as the patient evolves at the end of immunotherapy, the patient is assessed with total remission of Ungueal Invasive Malignant Melanoma with a good prognosis with +95% survival at 5 years.

The patient continues with biannual check-ups.

PATIENT INFORMATION

Patient 79 years old, widowed, born and resident in Quito, instruction (basic). She has a personal pathological history of arterial hypertension controlled with losartan 100 mg daily. She has no important family history and is not allergic to any medication or food.

3. PHYSICAL EXAMINATION

Blood pressure: 120/85 mmHg - Heart rate: 72 per minute - Respiratory rate: 18 per minute - WEIGHT: 60 kg - Height: 1.58 cm - BMI: 25

The patient is lucid, conscious, oriented, febrile, and hydrated.

Skin: normothermic without lesions

Left inguinal ganglion: Positive

Heart: R1- R2 normal, no auscultation of murmurs,

Lungs: vesicular murmur preserved; abdomen: soft, depressible, not painful to superficial or deep palpation, hydro-aerial sounds present.

Extremities: left foot: fifth joint, presence of a bleeding blackish suppurative tumor lesion that occupies almost the entire nail matrix, dermoscopy: the presence of multicomponent pattern.

Figure 1. Nail injury Figures 2-3. Amputation of injury

4. DIAGNOSTIC EVALUATION: COMPLEMENTARY EXAMINATIONS:

Initial incisional biopsy: compatible with invasive malignant melanoma.
IHQ: HMB-45 (+), S100 (+), MELAN-A(+), KI67(+).
PAN TAC S/C: PELVIC: PRESENCE OF A POSSIBLY METASTATIC LYMPH NODE OF +- 2 CM IN DIAMETER.
BLOOD TESTS: BIOMETRY WITHIN NORMAL VALUES, BLOOD CHEMISTRY WITHOUT ALTERATION, NORMAL COAGULATION TIMES, NEGATIVE THYROID PROFILE, NEGATIVE COVID TEST.

5. THERAPEUTIC INTERVENTION

1. Amputation of left toe + left superficial and deep inguinal lymphadenectomy.
2. Immunotherapy Nivolumab and/or Pembrolizumab.
3. Biannual check-ups by Clinical Oncology - Oncologic Dermatology

6. FOLLOW-UP AND THERAPEUTIC RESPONSE

Complete remission of melanoma under continuous surveillance every six months

7. DISCUSSION

Invasive malignant melanoma is a tumor that affects mostly adults. In most patients, the disease is detected when it is localized and can be treated by adequate surgery of the primary tumor in situ; however, many patients are diagnosed late when they have metastases and usually die soon after. The 10-year survival rate with metastases is less than 10%. Early diagnosis of malignant melanoma is common and can be attributed to an atypical presentation in some cases, although on other occasions it is due to a reluctance to consider the condition, and even going to a professional who is not able to recognize this type of lesions, thus creating an underdiagnosis of melanoma.
In this clinical case, although the diagnosis was made several years after the onset of the lesion, in an oncologic hospital and the hospital used oncologic guidelines with appropriate treatment, the patient's evolution was satisfactory. It is therefore essential to apply the ABCDE criteria with the help of dermoscopy and biopsy in highly suggestive cases (1). The first five years of follow-up after resection of the melanoma are the most important, as 90% of all metastases occur during this period (7). Follow-up should be performed at three-month intervals in the first three years and every year thereafter. Visits should include a thorough examination of the skin, including the scalp and genital region, particularly in the regional distribution of primary palpation, and the lymph nodes, with attention to the regional nodal basin, as well as psychosocial support and review by systems; this is the basis for detecting symptoms attributable to melanoma. CT and positron emission tomography is the diagnostic imaging modality of choice in metastases. Ten to 40% of patients have metastases to the central nervous system (CNS), and they have a poor prognosis, with more than half of patients dying from intracranial invasion (8). The standard of treatment for melanoma metastasis is surgical intervention and its goal in the brain is to provide symptom relief and increase survival time (8). Single drug chemotherapy is well tolerated but is associated with response rates of only 5 to 20%. (6,10) Combination chemotherapy and chemotherapy can elevate

response rates but do not prolong survival and cause greater toxicity. Immunotherapeutic approaches, such as high-dose interleukin (2), are associated with durable responses in a small percentage of patients (1).

Some of the major pathways of melanoma progression are now better understood, and molecular techniques (specific genomic incorporation and intratumoral expression) are likely to play an essential role in making classification schemes more powerful in predicting response to therapy (9).
It is of vital importance to inform the population about primary prevention strategies for metastatic melanoma through safe sun exposure: avoid exposure during peak sun hours, wear wide-brimmed hats, clothing and sun protection, especially in childhood and adolescence, when the risk is higher (1). Physicians and patients should be attentive to lesions. In case of suspicion of metastatic melanoma, the criteria described above should be applied and the diagnosis should be confirmed with a biopsy and anatomopathological study since early identification is decisive. Follow-up should be given to establishing the diagnosis in a timely way.

8. CONCLUSION

When a patient is diagnosed with melanoma, he or she should undergo periodic medical check-ups to detect possible recurrences at an early stage. However, no study has shown that routine check-ups increase survival.
increase survival.
The most effective methods for detecting recurrence are a detailed medical history aimed at detecting signs or symptoms suspicious of recurrence and a thorough physical examination of the patient's entire skin, as well as palpation of the lymph nodes or, if necessary, the lymph nodes.
lymph nodes or, depending on the availability of the center, the performance of a lymph node ultrasound by the dermatologist. However, there is still no agreement on which complementary examinations should be considered routine.
Likewise, patients will be taught to perform their check-ups where they should observe changes in the appearance and color of the nevi and the appearance or modification of the ganglions, as well as being made aware of photoprotection, and
They will be provided with a quick consultation method in case unexplained symptoms or signs appear without the patient having to wait for their next visit.
As for the duration of follow-up, check-ups should last up to a minimum of 5 years for stages 0 or IA and a minimum of 10 years for the rest due to the risk of recurrence. Patients with a previous family history of melanoma or with atypical nevi should be monitored for life because of the increased risk of a second melanoma.

9. PATIENT'S PERSPECTIVE

The patient lived an experience of great concern and anxiety since it was the first time she presented this health problem, when she was operated she was worried about her life, but she trusted all the professionals who did everything possible to improve her health. When she was discharged she was very grateful to everyone.

10. INFORMED CONSENT

We have the patient's informed consent to publish her clinical case.

REFERENCES

1. McLeod GR, Davis NC, Sober AJ: A history of melanoma. From hunter to clark; en Balch CM, Houghton AN, Sober AJ, Soong SJ (eds): Cutaneous melanoma. St. Louis, Missouri, Quality Medical Publishing, Inc., 2003, pp 1-14.

2. Riker AI, Zea N, Trinh T. The epidemiology, prevention, and detection ofmelanoma. The Ochsner journal. 2010 Summer;10(2):56-65.
3. de Vries E, Bray FI, Coebergh JW, Parkin DM. Changing epidemiology of malignant cutaneous melanoma in Europe 1953-1997: rising trends in incidence and mortality but recent stabilizations in western Europe and decreases in Scandinavia. Int J Cancer. 2003 Oct 20;107(1):119-26.
4. Aviles JA, Lazaro P, Lecona M. [Epidemiology and survival of cutaneous melanoma in Spain: a report of 552 cases (1994-2003)]. Revista clinica espanola. 2006 Jul-Aug;206(7):319-25.
5. Globocan 2012: Estimated Cancer incidence, mortality and prevalence worldwide in 2012 [sede Web] Lyon: International Agency for Research on Cancer; 2012 [cited 2014 14-7]. Cancer Fact Sheets].
6. Garbe C, Leiter U. Melanoma epidemiology and trends. Clinics in dermatology. 2009 Jan-Feb;27(1):3-9.
7. Erdei E, Torres SM. A new understanding in the epidemiology of melanoma. Expert review of anticancer therapy. 2010 Nov;10(11):1811-23.
8. Rigel DS. Epidemiology of melanoma. Semin Cutan Med Surg. 2010 Dec;29(4):204 9.
9. De Giorgi V, Gori A, Grazzini M, Rossari S, Oranges T, Longo AS, et al. Epidemiology of melanoma: is it still epidemic? What is the role of the sun, sunbeds, Vit D, betablocks, and others? Dermatologic therapy. 2012 Sep-Oct;25(5):392-6.
10. Bataille V, de Vries E. Melanoma--Part 1: epidemiology, risk factors, and prevention. Bmj. 2008;337:a2249.
11. Garbe C, Leiter U. Melanoma epidemiology and trends. Clinics in dermatology. 2009 Jan- Feb;27(1):3-9.
12. Garbe C, Bauer J. Melanoma. In: Bolognia JL, Jorizzo JL, Schachter J, editors. Dermatology. 2nd. 3rd ed. United Kingdom: Elsevier Saunders; 2012. p. 1885-914.
13. Weinstock MA. Issues in the epidemiology of melanoma. Hematology/oncology clinics of North America. 1998 Aug;12(4):681-98.
14. Garbe C, McLeod GR, Buettner PG. Time trends of cutaneous melanoma in Queensland, Australia and Central Europe. Cancer. 2000 Sep 15;89(6):1269-78.
15. Chang AE, Karnell LH, Menck HR. The National Cancer Data Base report on cutaneous and noncutaneous melanoma: a summary of 84,836 cases from the past decade. The American College of Surgeons Commission on Cancer and the American Cancer Society. Cancer. 1998 Oct 15;83(8):1664-78.
16. Lipsker D, Engel F, Cribier B, Velten M, Hedelin G. Trends in melanoma epidemiology suggest three different types of melanoma. Br J Dermatol. 2007 Aug;157(2):338-43.
17. MacKie RM, Hauschild A, Eggermont AM. Epidemiology of invasive cutaneous melanoma. Annals of oncology : official journal of the European Society for Medical Oncology / ESMO. 2009 Aug;20 Suppl 6:vi1-7.
18. Qureshi AA, Wei-Passanese EX, Li T, Han J. Host risk factors for the development of multiple nonmelanoma skin cancers. Journal of the European Academy of Dermatology and Venereology : JEADV. 2013 May;27(5):565-70.
19. Tucker MA. Melanoma epidemiology. Hematology/oncology clinics of North America. 2009 Jun;23(3):383-95, vii.
20. 20. Berwick M, Erdei E, Hay J. Melanoma epidemiology and public health. Dermato Clin.2009 Apr;27(2):205-14, viii.
21. Shin HR, Masuyer E, Ferlay J, Curado MP, Asian Contributors to CI. Cancer in Asia – Incidence rates based on data in cancer incidence in five continents IX (1998-2002). Asian Pacific journal of cancer prevention : APJCP. 2010;11 Suppl 2:11-6.
22. Rios L, Nagore E, Lopez JL, Redondo P, Marti RM, Fernandez-de-Misa R, et al. Melanoma characteristics at diagnosis from the Spanish National Cutaneous Melanoma Registry: 15 years of experience. Actas Dermosifiliogr. 2013 Nov;104(9):789-99.
23. Garbe C BJ. Melanoma. In: Bolognia JL JJ, Schaffer JV, editor. Dermatology. 2. Third ed. [St. Louis]: Elsevier Saunders; 2012. p. 1885-914.