MANIAC: clinico-pathological correlation of an acral nevus with difficult interpretation

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ABSTRACT

Background: acral nevi can present a pagetoid scatter of melanocytes, that is why they are called MANIAC (Melanocytic Acral Nevus with Intraepidermal Ascents of Cells), they can be confused with melanomas, leading to agressive but unnecessary treatments.
Objective: To establish a clinico-pathological correlation in order to obtain its clinical identification, thus avoiding terapeutic errors related to histopathological misdiagnosis.
Design: longitudinal retrospective study.
Methods: clinical and histopathologic retrospective analysis of 15 patients with MANIAC seen between 1994 and 2008 at Divisions of Oncology and Dermatopathology, Hospital Ramos Mejía, Buenos Aires, Argentina.
Results: The majority of patients lacked any personal history (93%), ages ranged from 20-39 years (52%); they consulted for nevi control (80%); some cases were misdiagnosed as melanoma by other physicians (12%). Women had a slightly higher incidence (60%). The lesions were mostly found on the soles (total on feet 80%, of which 54% were on the soles). The most common clinical presentation was like a congenital nevus of early presentation (66%). The clinical features were banal; the majority presenting: a diameter <6 mm (87%), asymmetric shape (67%, of whom 60% were fusiform), dark homogeneous color (87%), sharp (80%) and regular (66%) borders, fl at lesions (66%). Histopathologically they were divided among compound nevi (54%) and junctional nevi (46%).
Conclusions: MANIAC presents histopathologic characteristics classically attributed to melanoma. Pagetoid scatter of melanocytes could be over estimated, if taken alone, that is why dermatologists must avoid unnecessary aggressive treatments (Dermatol Argent 2010;16(1):46-51).

Keywords:

acral nevus, pagetoid spread, melanocytic ascent.

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TABLE 1. Detail of cases of study

Patient	Sex	Age	Location	Clinic	Motiv of Consult	Histopathology	Time of Evolution
GS	F	42	Plantar Left forefoot.	7x4 cm, uniform brown. Net irregular edges.	Histological diagnosis of melanoma with indication of amputation.	Composed acral melanocytic nevi with ascence of intraepidermal cells (MANIAC) 23240 (Dr. Schroh).	Congenital
IC	F	35	Back of the foot.	5x2 cm, dark, brown, uniform, asymmetric,tapered, irregular net edges,slight elevation	Clinical control of extensive superficial melanoma.	Junctional acral melanocytic nevi pigmented with ascent intraepidermal cells 189674.	Congenital
CF	F	52	External lateral area, 2nd toe on left foot.	5x4x5 cm, triangular, indefinite edges, uniform brown, slight elevation.	Nevi control.	Composed acral melanocytic nevi with ascence of intraepidermal cells (MANIAC) 2343 (Dra. Corbella).	5 years
PD	M	16	Pad on1st finger of left foot .	6x3 cm, rhomboidal, net edges, uniformly dark brown, flat. A+++, B+++, E-.	Clinical diagnosis of melanoma with proposed amputation without previous histology.	Junctional acral melanocytic nevi pigmented with intraepidermal ascence of melanocytes (MANIAC) 29643 (Dr. Schroh).	Congenital
GM Photos 1 and 2	M	20	Right heel	6x4 cm, asymmetric, low-cut edges, uniform color, elevated. A+++, B+++, C+, E++.	Nevi control.	Composed melanocytic nevi pigmented with intraepidermal ascence of cells (MANIAC) 230823.	2 years
AC	M	6	Lateral face of distal phalanx of 1st finger on left hand.	6x2 cm, comma-shaped, uniform dark brown. A+++, B+++, C+, E-.	Nevi control.	Composed melanocytic nevi pigmented acquired with intraepidermal ascending melanocites 04-8030 (Dr. Calb).	Congenital
MUM Photos 4 to 6	M	27	Hypothenar eminence.	10 cm, dark and light brown, fuzzy edges, flat. A + + +, B + + +, C + +,	Nevi control.	Intraepidermal melanocytic proliferation with structural features of MANIAC 275445.	1 year
KM	F	33	Left sole.	4 cm, junctional nevi. Net regular edges, uniform dark brown.	Nevi control.	Junctional MANIAC 21517.	Congenital
LC	F	42	Left plantar.	3 cm, junctional nevi, uniform dark brown, net edges.	Nevi control.	Composed MANIAC 23240.	Congenital
GD Photo 3	M	28	Left arch.	5x3 cm, net irregular edges, uniform dark brown, tapered.	Nevi control.	Junctional MANIAC 24298.	Congenital
JD	M	44	Right hallux.	3,5 cm, homogeneous dark brown pigmented macule, net regular edges.	Nevi control.	Junctional MANIAC 25791 B.	6 months
PS	F	12	Plantar.	4 cm, junction nevus. Net edges regular, uniform dark brown.	Nevi control.	Composed MANIAC 27575.	Congenital
RG	F	30	Plantar.	6x4 cm, irregular edges, two-tone brown	Nevi control.	Composed MANIAC 308878.	Congenital
GAC	F	26	Plantar.	5x4 cm, irregular edges, uniform dark brown.	Nevi control.	Composed MANIAC 33688.	Congenital
AC	F	30	Palm of left hand.	3 cm, symmetric, fuzzy edges, uniform dark brown, flat.	Nevi control.	Junctional MANIAC.	1 year

Introduction

Acral nevi can be observed in 4 to 9% of the population,[1,2] as the other nevi, we believe that they are all congenital and are either of early or late presentations.[3] The most frequently manifested as junctional or compound nevi.[1,2] Some show intraepidermal ascent of melanocytes, that is, a pagetoid spread,[1,2,4-11] for what they are known by the acronym MANIAC *(Melanocytic Acral Nevus with Intraepidermal Ascents of Cells)*.[2,4]

This histopathologic feature can lead to misdiagnose melanoma, implying unnecessary aggressive treatment.[1,2,4-11]

Objectives

Establish the clinical-pathological correlation in a nevus of difficult interpretation, to identify flaws in the clinical and/or histopathology, thus avoiding unnecessary therapies.

Materials and methods

Clinical and histopathological retrospective longitudinal analysis of 15 patients **(Table 1)** diagnosed with MANIAC, evaluated from 1994 to 2008 in the areas of Oncology and Dermatopathology of our department. Data were collected from medical records of the office of Dermatological Oncology Sector, were clinical features, history and evolution of the nevi at the time of the query are detailed and codified. Photographs of key cases are used where appropriate. A subsequent correlation was performed with histophatological data of the surgical specimen.

Results

History: only one patient had a personal history of extended superficial melanoma; all other patients had no personal or family history of relevance.

PHOTO 1. Right heel injury, male, 20 years old, with evolution of 2 years.

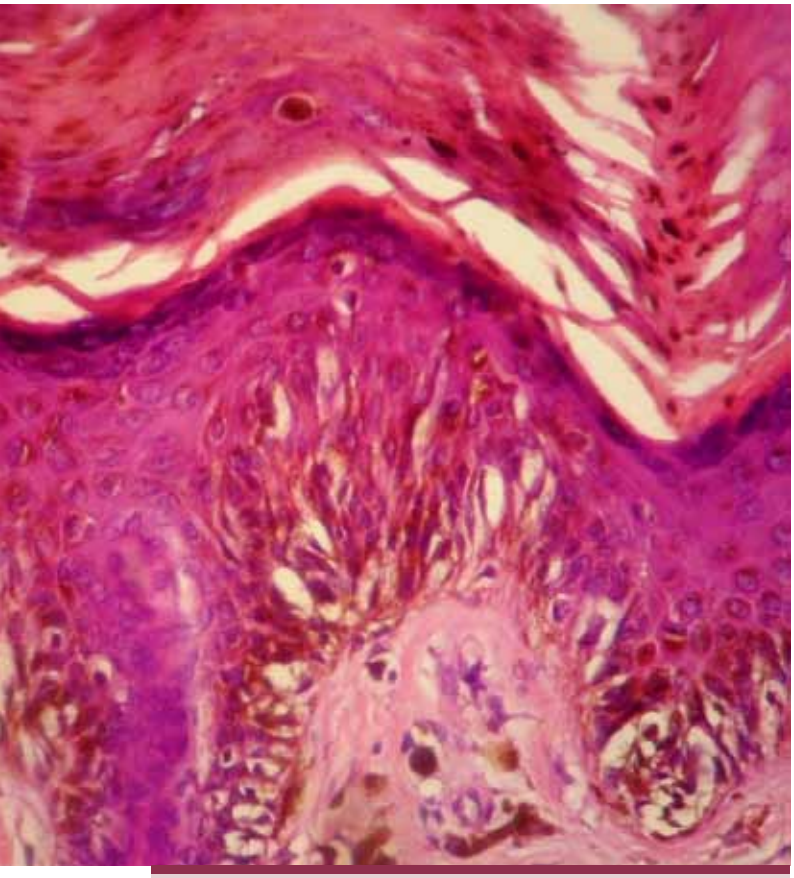

PHOTO 2. Compound pigmented melanocytic nevi with intraepidermal ascence of cells that reaches the thickened corneous layer (HE, 400X).

TABLE 2. Age distribution of patients at time of consult.

Age Distribution	
0-9 years	6%
10-19 years	13%
20-29 years	26%
30-39 years	26%
40-49 years	20%
50 or more years	6%

TABLE 3. Nevi Symmetry

Types of Nevi	
Symmetric	33%
Asymmetric	67%
Tapered	60%
Other	40%

Consult motivation: 80% corresponded to nevi controls, only 6% corresponded to a melanoma check up. 13% (2/15) had a wrong melanoma diagnose, one due to a clinical diagnose and the other a histological one.
Time of evolution at the time of consult: 66% of lesions were congenital, the rest were clinically manifested between a period of 6 months to 5 years prior the consult.
Sex: 40% males, 60% females.
Age: the age range was between 6 to 52 years old. The mean age was 29 years **(Table 2)**.
Localization: most frequent localization was feet (80%), and among them soles (54%). Hand localization corresponded to 20% **(Figures 1, 2 and 3)**.
Shape: symmetric 33%, and asymmetric 67%. Among the latter, 60% showed a tapered shape and 40% other shapes such as triangular, rhomboidal, or comma-like **(Table 3)**.
Edges: 80% showed well-defined edges, where 66% had regular edges and 33% irregular. The remaining 20% had diffused edges.
Color: homogenous (dark brown) 87%, y 2 shades of brown 13%.
Size: 33% of the cases measured between 2-4 mm. Most frequent ones, with 53%, measured between 4-6 mm. Only 13% of patients showed nevi larger that 6 mm.
Elevation: only 35% of patients presented elevated lesions, the rest has flat lesions.
Histopathogy: 54% corresponded to compound nevi and 46% to junctional nevi. All presented intraepidermal ascent of melanocytes.

FIGURE 1. Location nevi.

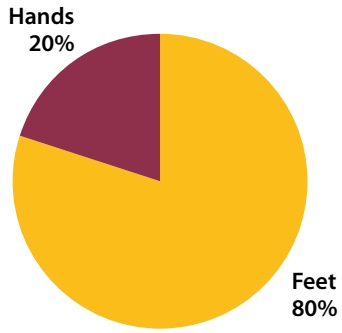

FIGURE 2. Distribution of nevi in feet.

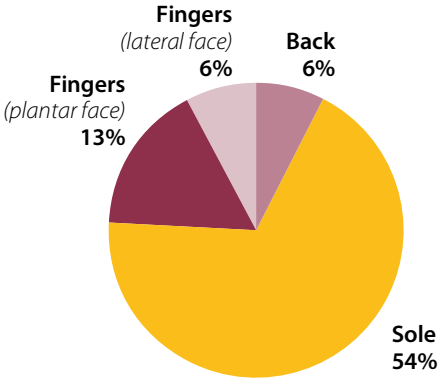

FIGURE 3.Nevi distribution in the hands.

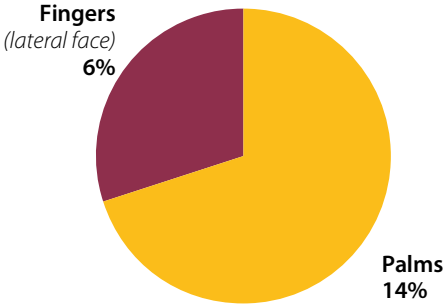

PHOTO 3. Congenital lesion in the left sole, longitudinal arch, male, 28 years old.

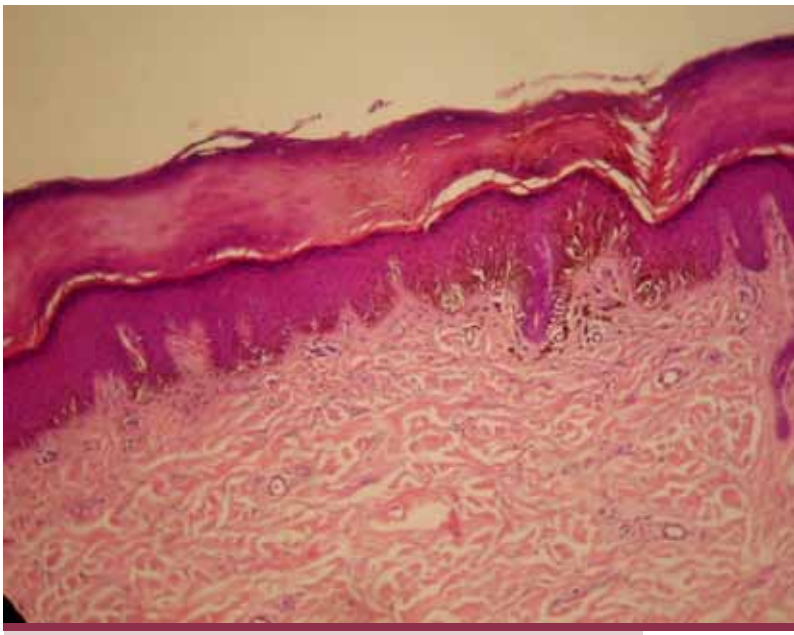

PHOTO 4. Junction nevus with pagetoid extension and promotion intraepidermal cells (HE, 100X).

Comments

In 1984, Kerl, Trau and Ackerman mentioned that melanocytes could be observed in the corneum stratum of acral nevi, but their mere presence has no value in differentiating between benign and malignant melanocytes, also they observed focal distribution of melanin in vertical columns.[6]
Then, in 1991, Mc Calmont, Brinsko and Le Boit presented a series of cases of acral nevi, and noted a melanocytes ascence and poor lateral circumscription on a large proportion of injuries. They observed pigment columns in acral nevi but also in melanoma. Le Boit introduced the term MANIAC to emphasize the banality of the ascence of melanocytes in acral nevi.[12]
In 1994, Boyd and Rapini studied 158 acral nevi and found that the ascence of melanocites stand for melanoma; researchers found that more than 1 / 3 showed pagetoid spread.[7]
In 1995, Clemente et al. reached similar conclusions.[11]

PHOTO 5. Hypothenar injury, male, 27 years, with an evolution time DE1 year.

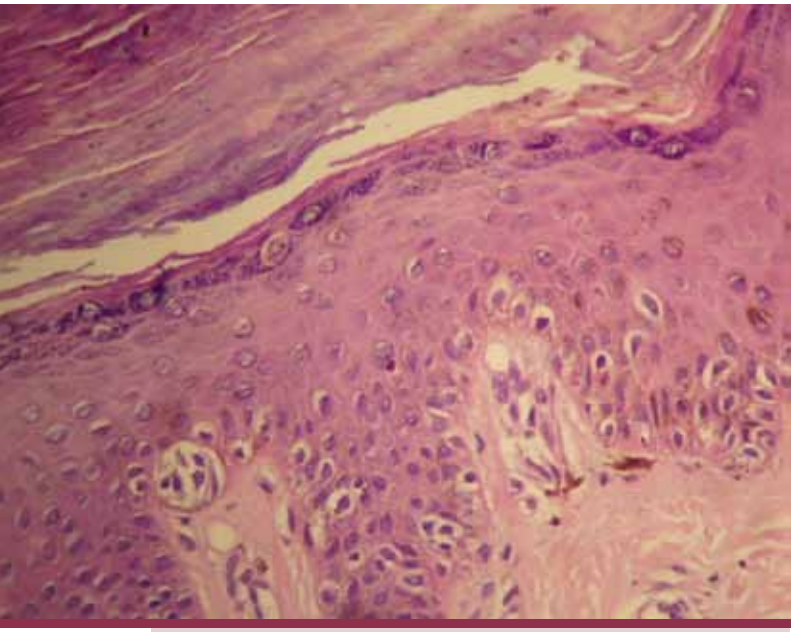

PHOTO 6. Junctional nevi with ascence of intraepidermal cells. Circumscribed melanocytic proliferation in the junction area, with traces of increased density of melanocytes (HE, 400X).

Then, Signoretti et al. conducted a study on circumscription of acral nevi, the authors noted that the skin of palms and soles have a pattern of crests and furrows, and the section plane (perpendicular or parallel to them) influence on the circumscription. On perpendicular cuts to the dermatoglyphics are more common to find signs of benign, as well as circumscription, symmetry and columns of pigment columns in the corneum stratum.[5]

Regardless several authors have histopathologically analyzed this entity, few have attempted to correlate the clinical aspects. Our results are similar to those of Signoretti et al. regarding most frequent localization in soles, mild female predominance, and diameters between 2 and 8 mm.[5] The coincidences with Han and Cho correspond to most described lesions were flat, most common in soles and dark colored.[8] According to Clemente et al, also evidenced female predominance, a mean age 30 years old and an average size of 5 mm.[11]

Conclusions

Among acral nevi there is a special type, the MANIAC, which present histopathological characteristics classically associated with melanoma; among them, pagetoid spread, with intraepidermal ascence.

In our view it is important to know this entity, as the ascence of melanocytes could be misinterpreted if taken into account alone, without regarding other histopathological features of the lesion, eg. number of melanocytes, presence and size of nests, atypical melanocytes, melanin distribution, number of mitosis.

According to our experience, most patients:

- Had no medical history.
- Had a consult between the ages of 20 and 39 years.
- The reason for consult was nevi check up. We would like to emphasize cases arising from misdiagnosis of melanoma.
- Slight female predominance was evidenced.
- Injuries were mostly on feet soles.
- The most common presentation was congenital nevus.
- The clinical appearance of lesions was banal, the largest percentage showed:
  - Size smaller than 6 mm.
  - Uniform dark brown color.
  - Net irregular edges.
  - Asymmetric tapered shape.
  - Flat injuries.
  - Histopathologically corresponded to compound (54%) and junctional (46%) nevi, with slight predominance of the former.

All cases presented melanocytes ascence, which is attributed to traumatism and a mechanism of regression.[5,6,13]

For these reasons, dermatologists should be aware of injuries with these characteristics in order not to confuse the diagnosis, due to and error of the specialist or pathologist, as occurred in two of our cases.

This may lead to indicate erroneous treatments, such as

wide surgical excision in areas of high morbidity such as palms and soles or amputation, as to say, medical iatrogenic.

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