NAIL MELANOMA IN CHILDREN

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MELANONYCHIA

**Racial:**
- 10-20% Asians
- 77% African-American
- 70% Hispanic

**NEVI**
- More frequent in white
- 29-46% Asians
- 15-20% African-American
- 33% Indian-American
- 20% Hispanic

**SUM**

Ruben BS Semin Cutan Med Surg 2010 29(3)
Dominguez Cherit et al J A Melanonichya, Melanocytic hiperplasia and SUM, J Am Acad Dermatol 2008 59(5)

<table>
<thead>
<tr>
<th>1-4% of all melanomas</th>
<th>SUM in white adults is rare: (0.7-3%) in children there are few reports</th>
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<td>1-3% of all malignancies in childhood.</td>
<td>In children nevi is the most frequent cause of LM.</td>
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<td>It has been increasing in children</td>
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<td>Difficulty in diagnosis is because histology is commonly ambiguous, <em>differential dx is with atypical nevus</em></td>
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Pathophysiology

SUM (ALM)

It is considered to be different from other sites...

Bastian et al. compare, using genomic hybridization, 15 ALM vs 15 SS, the former had at least one genetic amplification (11q13, 22q11-22q13, 5p15). This changes were seen at very early stages of Melanoma Acral Nevus vs Acral Melanoma  F. Bravo et al  Arch Pathol Lab Med—Vol 135, July 2011
Theory of Tumoral Progression

Genetic and morphological alterations

Normal - - Hyperplasia - *in situ* MM - invasive MM

Ungueal plate

HIPONICHIUM

Eponichium

Distal matriz

Proximal matrix

Racial

Melanoniqia

Melanocytic proliferation

Melanoma

- ALM is described as atypical melanocytic proliferation
- It has to be considered a previous stage of invasive melanoma.
- Means very early In situ melanoma
- He proposed to consider it a distinct clinicopathological entity.
- Where the horizontal growth is very slow
The treatment of choice at this stage is total nail apparatus removal.
Material y methods.

All patients seen in 11 years.

Hispanic children seen at our hospital or private office with TM or LM,

With histological features of atypical lentiginous melanocytic proliferation or melanoma in situ

We defined borderline histopathological features as the irregular atypical melanocytic proliferation, where the melanocytes have wide and irregular dendrites (anysodendrocytosis) and hyperchromatic nuclei:

All of the patients had inform consent from the parents
Results

Case 1

7 y, left 2nd finger

Started at 5 yrs.

3mm $\rightarrow$ TM

Histology: atypical lentiginous melanocytic proliferation

Removal of the nail apparatus

serial sections: in situ SUM

Follow up 7 yrs free of disease
Case 2

14 y, 1st left toe

Started at 12

T M

Atypical lentiginos melancitic proliferación with basal and suprabasal nests

HMB45 +, MART1 +, Ki-67 5-10%

En bloc exceresis

Serial sections SUM in situ

Follow up 5 yrs, free of disease
Case 3

11 yr, 4 right finger

At 1 LM and the last two with rapid growth

Atypical melanocytic proliferation, individually and in nest in the basal an suprabasal epidermis

En bloc exceresis

Serial section: very early SUM

Follow up 5 yrs. Free of disease
Case 4

4yrs, 5th right finger

Since birth  LM 6 mm

Progression and Hutchinson’s

Atypical melanocitic proliferation in single units and nest in basal and suprabasal epithelium with numerous pleomorphic cells

Dx: in situ Melanoma (after three consultations)

En bloc excision: very early in situ Melanoma

Follow up 6 months.

Mother went to oncologist...and lost follow up
Case 5

14 yrs, 4th right finger

Triangular LM 6 mm

Partial nail plate destruction

Hutchinson´s

Atypical melanocytic proliferation in single units along with basal and suprabasal nests

In situ Melanoma

En bloc exceresis

Very early SUM

Follow up 4 yrs free of disease
Case 6

4 yr.

1 year, rapid growth

Triangular-shaped LM

Demoscopy: irregular pigmentation

Atypical melanocytic proliferation in single units with basal and suprabasal nest

Melan A, HMB45 & MITF -1,

23-31 basal melns x mm
Pediatric melanoma is rare, and SUM as a part of ALM is extremely rare

Histology is a great challenge

Compared to adults, there are few criteria to differentiate nevus from melanocytic hyperplasia and SUM

Atypical melanocytic proliferations of the nail apparatus are regarded by some authors as benign whilst others (us included) consider them early forms of melanoma.

Molecular cytogenetic tools may be considered to clarify such conundrum and may potentially detect very early malignant lesions
**Limitation:**
- The rarity of the pathology limits us to gather more cases

**Pending issues:**
- Genotyping of cases is currently being conducted at the UCSF Dermatopathology Service by courtesy of Drs P. LeBoit and B. Bastian
Conclusion

LM in children is rare as is pediatric melanoma

ALM and SUM are extremely rare in children

When clinically a LM or TM suggest SUM, it is indicated to do a nail matrix biopsy, even in children

If the histology is ambiguous or shows an atypical lentiginous proliferation of melanocytes it is indicated to perform an en bloc excision to study the whole nail apparatus

It is better to loose a nail than a finger (or more)!