Dermatopathology
Dr. Rafael Botella Estrada.
Hospital La Fe de Valencia
Melanoma and mimics

Dr. Martin Mihm

- Malignant lesions result from the accumulation of mutations
  - Class I lesions (benign)
  - Class II lesions (intermediate)
  - Class III lesions (malignant)

- Class II, intermediate:
  - Deep penetrating nevus
  - Pigmented epithelioid melanocytoma
  - Spitz nevus
Deep penetrating nevus (DPN)

- Head and neck, first decades of life
- Vertically oriented (wedge-shaped) reaching deep dermis and even subcutis
- Pushing deep marging, not infiltrative
- Nests of enlarged epithelioid and spindle pigmented cells
- Nested quality
- More than half associated with common nevus: combined
- Excision without recurrence in most cases

- Presence of mitosis, atypia, expansile growth, pleomorphism should suggest a diagnosis of atypical DPN or borderline melanoma
Pigmented epithelioid melanocytoma

- Blue plaques or nodules
- Young people, two first decades of life
- Acral surfaces, buttocks
- Heavily pigmented neoplastic proliferation located in dermis
- Epithelioid cells favouring the centre of the lesion, loaded with melanin and interspersed with melanophages
- High percentage of lymph node dissemination
- Cases with striking cytologic atypia should be considered melanoma
Molecular alterations (Next generations sequencing)

- **SPITZ NEVUS**
  - 50% Kinase fusions
    - ALK (10%)
    - ROS-1 (10%)
    - NTRK1 (10%)
    - Other
  - Desmoplastic variant: Increased copy number 11p (HRAS)

- **SPITZOID MELANOMA**
  - 38.4% kinase fusions plus additional genetic alterations
ATYPICAL SPITZ

- Independent prognostic variables:
  - Age > 10 years
  - Ulceration
  - Subcutis involvement
  - Mitotic rate >6/mm²

- Sentinel lymph node: 40-50% positive but without further spread

- Be careful with lesions larger than 1 cm, asymmetric, without sharp demarcation, irregular nests, deep extension, expansive nodule (melanoma)
ATYPICAL SPITZ. Histological clues

- Clues for Spitz:
  - When considering different areas, same type of cells present
  - Maturation

- Clues for Spitzoid melanoma:
  - Expansive nodule with dermal base (apex towards epidermis)
  - Prominent epithelioid cells with evident atypia
  - Mitosis in deep portion
Adriano Piris
Dermatopathologist. Associate Professor Harvard

- Radial Growth Phase melanoma
  - Melanoma in situ. Confined to epidermis
  - Microinvasive. Biologically indolent. Located in superficial papillary dermis
    - Individual cells or small nests
    - Only in papillary dermis
    - Papillary dermis not expanded
    - Size of nests the same as those in the epidermis above
    - No mitosis
    - No single group of cells larger than other
Melanomas with lentiginous pattern of growth

- Acral lentiginous melanoma (ALM)
- Lentigo maligna melanoma (LMM)
- Mucosal melanoma

*Single melanocytes growing along the DE junction. All of them difficult to excise completely*
Mutations

- Superficial spreading melanoma (non CSD): BRAF V600E (90%)
- ALM: KIT
- LMM (CSD): NRAS, NF1, KIT, BRAF non V600E
- Nodular MM: BRAF, NRAS

- KIT mutant melanomas: ALM, LMM, mucosal MM.
  - Percentage differs according to series due to geographical variations (2-30% in LMM), type of mucosa (oral, genital, etc)
Unusual vertical growth phase components in MM (immunohistochemistry essential to reach diagnosis)

- Balloon
- Rhabdoid
- Myxoid
- Small-cell
- Signet-ring
Spectrum Lupus Panniculitis – Subcutaneous T-cell Lymphoma

Cases reported with histological features characteristic of the two entities in different areas of the subcutaneous tissue

Some cases respond to antimalarials, some progress to frank lymphoma (hemophagocytic syndrome and death)

Some cases in between (indeterminate lymphocytic lobular panniculitis)
3 hypothesis:

- SPTCL with histological features mimicking those of LEP
- LEP con features mimicking those of SPTCL
- LEP y SPTCL were at the end of a spectrum of diseases. This would be supported by its frequent association
Plasmacytoid dendritic cells CD123+ in lupus erythematosus

• Clusters of plasmacytoid dendritic cells arranged close to the epidermis and in the subcutaneous tissue

• Characteristic finding of lupus that may be helpful for diagnosis but it is not specific (present in several other diseases)
AEDV HIGHLIGHTS en el 76º Congreso de la AAD

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Con la colaboración de:

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