CHAOS & CLUES

An Algorithm for the Diagnosis of Malignancy (any type) in Pigmented Skin Lesions by Dermatoscopy

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Revised Pattern Analysis
A pattern is formed by multiple repetitions of basic structures:
1. Is there one pattern or more than one pattern?
2. Is there one colour or more than one colour?
3. Are pattern and colours combined symmetrically or asymmetrically?
4. What is the differential diagnosis based on 1–3 above?
5. Are there clues to a specific diagnosis?

Flowchart for the CHAOS & CLUES Algorithm

1. Pattern present
   - Clue present
     - Biopsy (lesions unpalpable or diagnosis of submucous keratosis by pattern analysis)
     - No intervention
   - Clue not present
     - Biopsy (lesions palpable or diagnosis of submucous keratosis)
     - No intervention

2. Pattern not present
   - Clue present
     - No intervention
   - Clue not present
     - No intervention

Exclusions (Malignant lesions which sometimes don't exhibit CHAOS)
1. Changing lesions on adults or very small lesions with clues to malignancy
2. Lesions with dermoscopic grey structures on the head or neck
3. Nodular lesions (includes Spitzoid lesions, nodular melanoma and melanoma metastases)
4. Lines on palms or soles (acral) with a parallel ridge pattern

This is an example of a facial lentigo maligna with the CLUE of "grey structures" (circles) but without CHAOS.

Is there CHAOS?
CHAOS is defined as an asymmetry of structure or color. Irregularity of chaos does not matter. Pattern symmetry is not essential to lesions, and is not required basis of the overall pattern. Without equivalence this can be assessed at a lesion site. It is important to consider whether the lesion is metastatic. If CHAOS is not present, STOP EXAMINING for one of 8 CLUES is malignancy.

Is a CLUE to malignancy present?

1. Eccentric structures/less area
2. Thick lines, reticular or branched
3. Gray or blue structures
4. Black dots or clods, peripheral
5. Lines radial or pseudopods, segmental
6. White lines
7. Polymorphic vessels
8. Lines parallel, ridge (palms or soles) or chaotic (nails)

References

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