Diagnostic cellular abnormalities in neoplastic and non-neoplastic lesions of the epidermis: a morphological and statistical study.

Abstract:
Distinguishing cellular abnormalities in reactive and malignant lesions is challenging. We compared the incidence and severity of cytological abnormalities in malignant/premalignant and benign epidermal lesions. One hundred fifty-two biopsies representing 69 malignant/premalignant squamous lesions and 83 benign conditions were studied. Cytological features, including nuclear hyperchromasia, nuclear overlap (crowding), irregular nuclei, high nuclear/cytoplasmic (N/C) ratio, conspicuous nucleoli, delicate inconspicuous nucleoli, clumped chromatin, pleomorphic parakeratosis, normal and abnormal mitotic figures and necrotic keratinocytes, were evaluated and graded. Statistical analysis was performed. Irregular nuclei, increased N/C ratio, conspicuous single prominent nucleoli, nuclear overlap (crowding), pleomorphic parakeratosis, nuclear hyperchromasia, necrotic keratinocytes, normal and abnormal mitotic figures and coarse chromatin were seen more frequently in malignant neoplasms (p < 0.05). Abnormal mitotic figures, although uncommon (20.3%), were only noted in the malignant/premalignant group. Certain cytological features were common among both malignant and benign lesions, suggesting that they are of little value. In the setting of an atypical cutaneous squamous proliferation, nuclear irregularity,
increased N/C ratio, conspicuous nucleoli, crowding and hyperchromasia are the most useful indicators of malignancy. In contrast, mitotic figures, necrotic cells and coarse chromatin are less useful. The presence of abnormal mitotic figures is very helpful when present; however, their overall rarity limits their utility.

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