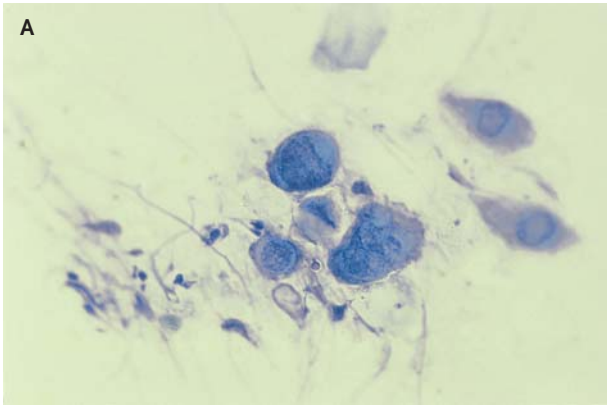
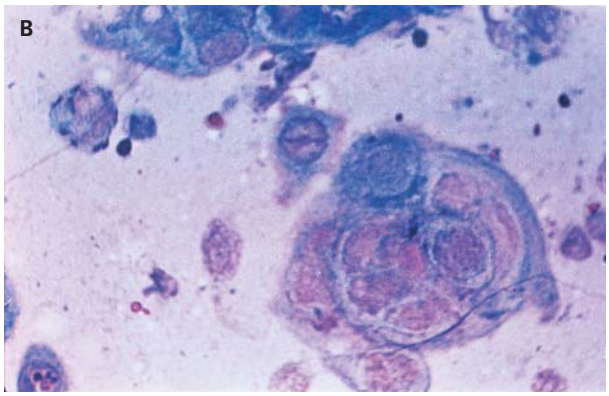
IMAGES IN CLINICAL MEDICINE

Use of Multinucleated Giant Cells to Diagnose a Viral Eruption





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PART OF THE DIFFERENTIAL DIAGNOSIS OF A VESICULAR ERUPTION MUST include smallpox. The characteristic smallpox lesions — papulovesicular pustules — develop two to four days after an influenza-like prodrome. The lesions progress from macules to papules to vesicular pustules. The eruption appears first on the face; spreads centrifugally to the scalp, upper chest, back, arms, and hands; and appears last on the abdomen, legs, and feet. The lesions are all in the same stage of development on a given area of the body.

The differential diagnosis of the vesicular-pustule stage includes varicella (chickenpox), eczema herpeticum (disseminated herpes), and herpes zoster. One way of differentiating varicella, herpes simplex, and herpes zoster from smallpox is to identify multinucleated giant cells in a Tzanck smear from a fresh vesicle. Smallpox does not produce multinucleated giant cells. The features of the multinucleated giant cell include multinucleation, with molding of the nuclei as they are crowded together (Panel A; Giemsa, ×400); peripheral margination of the chromatin; and a ground-glass appearance of the nuclei (Panel B; Giemsa, ×400). The cell may also have a bizarre or atypical shape. The Tzanck preparation shown in Panel A is from a lesion in a 19-year-old woman with atopic dermatitis in whom eczema herpeticum developed from herpes simplex. The preparation in Panel B is from a 32-year-old man with varicella.