

boards fodder

Pagetoid microscopic differential diagnosis

By Alexander Pybus, MD, and Vikas Shrivastava, MD, FAAD

| Diagnosis | Histologic features | Immunostain profile | Histology image(s) |
|--|--|---|--------------------|
| Mammary & extramammary Paget's disease | <ul style="list-style-type: none"> -Cells with abundant pale cytoplasm and nuclear atypia within the epidermis, arranged singly or in small groups -Older lesions may have full-thickness epidermal involvement | <ul style="list-style-type: none"> -Mammary Paget's: CK7 +, GCDFP-1 +, HER-2 +/-, CEA + -EMPD: CK7 +, CEA +, EMA +, mucin +, syndecan-1 (CD138) + cytoplasmic | |
| Melanoma in situ | <ul style="list-style-type: none"> -Confluent melanocytic growth along dermo-epidermal junction, +/- nested melanocytes with ample cytoplasm -Melanocytic nuclear atypia | <ul style="list-style-type: none"> -SOX10 +, S100 +, HMB-45 +, Melan-A + -PRAME +/- | |
| Periocular sebaceous carcinoma | <ul style="list-style-type: none"> -Sheets of basophilic cells often containing scattered foci of small mature sebocytes -Nuclear atypia, mitoses may be present -Infiltrative architecture may help distinguish from sebaceoma | <ul style="list-style-type: none"> -AR+, adipophilin +, EMA +, CK7 +, BerEP4 + - CK5/6 -, AE1/3 -, p63 -, p40 - -PRAME +/- (positivity favors lower grade) | |



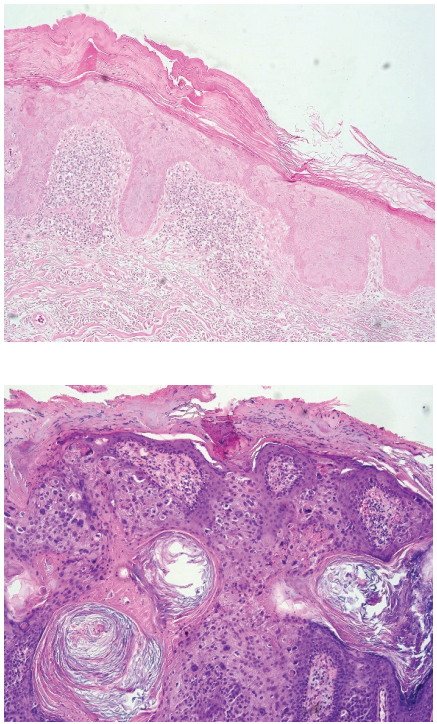
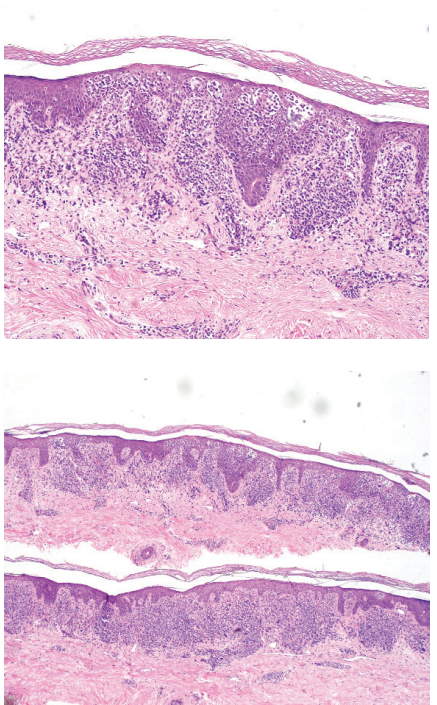
Vikas Shrivastava, MD, FAAD, is a dermatopathologist and the dermatology residency program director at the Naval Medical Center in San Diego.



Alexander Pybus, MD, is a PGY-3 dermatology resident at the Naval Medical Center in San Diego.

Pagetoid microscopic differential diagnosis

By Alexander Pybus, MD, and Vikas Shrivastava, MD, FAAD

| Diagnosis | Histologic features | Immunostain profile | Histology image(s) |
|---|--|---|---|
| Squamous cell carcinoma in situ (SCCIS) | <p>-Full thickness keratinocyte atypia with loss of granular layer and overlying parakeratosis</p> <p>-May see eyeliner sign; basal keratinocytes appear palisaded and starkly outlined compared to the rest of the epidermis</p> | <p>-CK5/6 +, AE1/3 +, EMA +, p63 +, p40, syndecan-1 (CD138) + membranous</p> <p>-CK7 -, PRAME -</p> |  |
| Mycosis fungoides | <p>-Exocytosis (not true Pagetoid spread) of bizarre cerebriform lymphocytes into the epidermis, often with variable underlying lichenoid superficial dermal infiltrate</p> <p>-May see Pautrier's microabscesses: clusters of abnormal lymphocytes in the epidermis</p> | <p>-CD3 +, CD4 +</p> |  |

Pagetoid microscopic differential diagnosis

By Alexander Pybus, MD, and Vikas Shrivastava, MD, FAAD

Immunostaining profiles

| Entity | Mucin* | SOX10, S100 | CK7 | CK5/6 | BerEP4 | AR | Syndecan-1 (CD138) | CD3, CD4 |
|-----------------------------------|--------|----------------|-----|-------|--------|-----|-----------------------|-------------|
| Mammary Paget's disease | +/- | - | + | - | + | +/- | + (cytoplasmic) | - |
| EMPD | + | - | + | - | + | +/- | + (cytoplasmic) | - |
| Melanoma in situ | - | + | - | - | - | - | - | - |
| SCCIS | - | - | - | + | - | - | + (membraneous) | - |
| Periocular sebaceous carcinoma | - | - | + | - | + | + | - | - |
| Mycosis fungoides | - | - | - | - | - | - | - | + |

*Mucin stains include alcian blue, colloidal iron, PAS, and mucicarmine

References

1. Patterson JW, Weedon D. *Weedon's Skin Pathology*. Fifth edition. Elsevier; 2021.
2. Alikhan A, Hocker TLH, eds. *Review of Dermatology*. Second edition. Elsevier; 2024.
3. Gardner JM. *Survival Guide to Dermatopathology*. Innovative Pathology Press; 2020.
4. Tommaso LD et. al. Toker cells of the breast: Morphological and immunohistochemical characterization of 40 cases. *Hum Pathol*. 2008 Sep;39(9):1295-300.
5. Cazzato G et. al. PRAME Immuno-Expression in Cutaneous Sebaceous Carcinoma: A Single Institutional Experience. *J Clin Med*. 2022 Nov 24;11(23):6936.