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Dermoscopic approach to melanocytic lesions of volar skin

By Vixey Silva, DO, Victoria Starzyk, DO, and Kendall Buchanan, MD, FAAD

1. Patterns of melanocytic nevi on volar skin



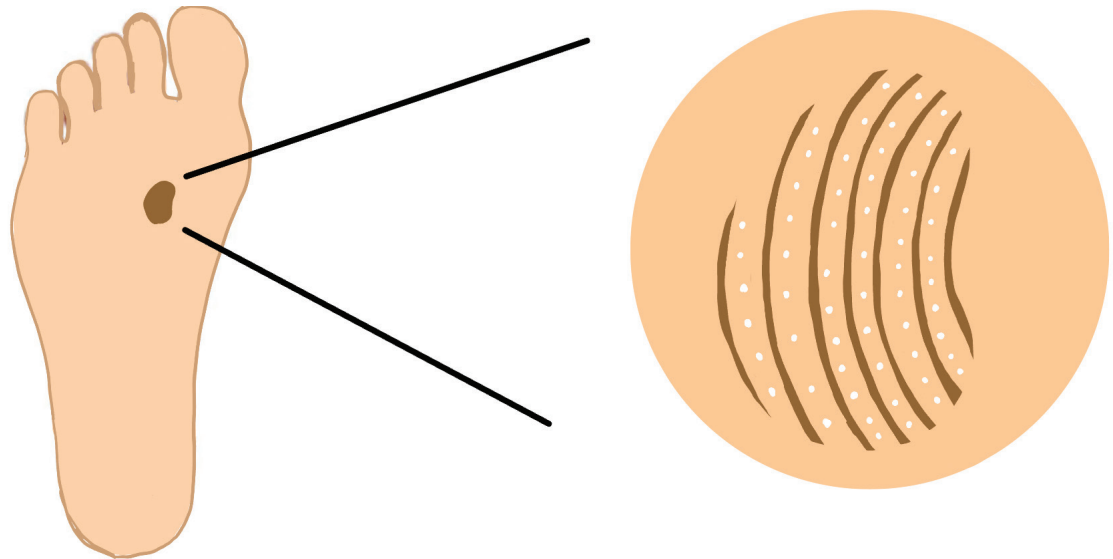
Vixey Silva, DO, is PGY-3 dermatology resident at Largo Medical Center in Florida.



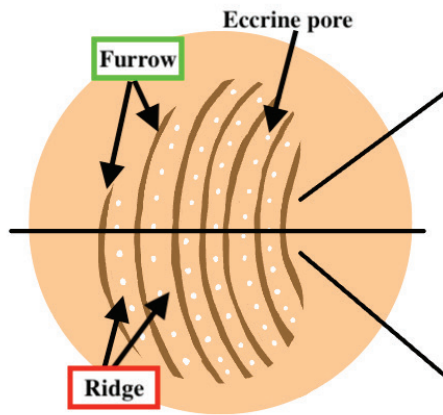
Victoria Starzyk, DO, is a PGY-3 dermatology resident at Largo Medical Center in Florida.



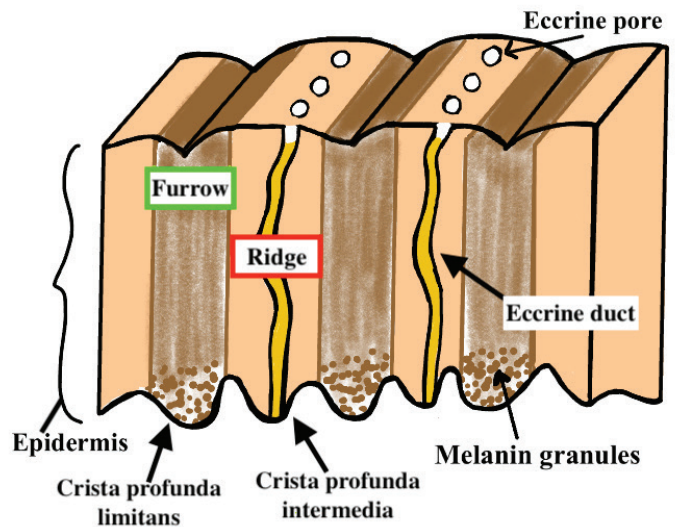
Kendall Buchanan, MD, FAAD, is an assistant professor in the department of dermatology at the Medical College of Georgia in Augusta.



Acral nevus prototype: Parallel furrow pattern




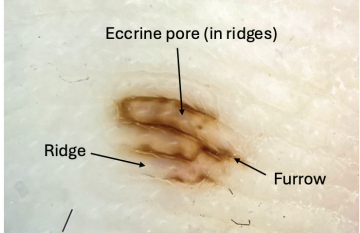
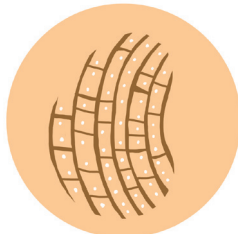
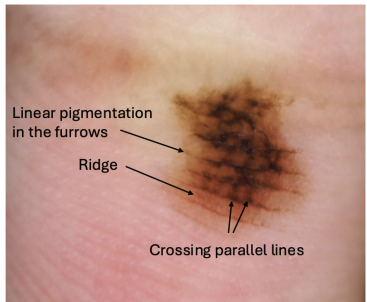

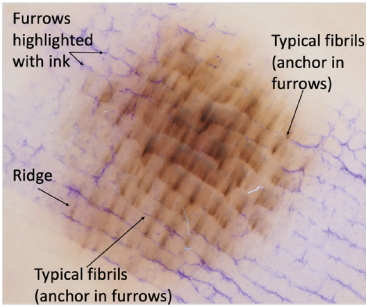
Vertical section



- Crista profunda limitans corresponds to furrows while crista profunda intermedia corresponds to the ridges
- **Pearls:** (1) Ridges are wider than furrows; (2) Eccrine ducts open onto the ridge surface and can appear as white dots
- **Ink test:** Smudging ink onto the surface will result in ink deposition into the furrows, revealing the location of furrows and ridges

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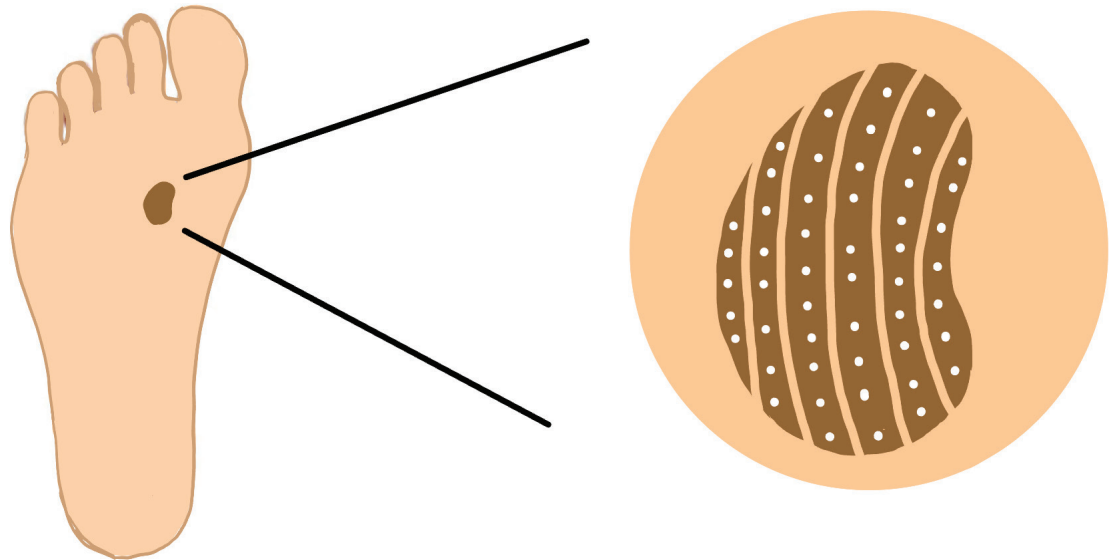
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| Pattern | Description | Images | Dermoscopic photo |
|---------------------------------------|---|--|---|
| Parallel furrow pattern (PFP) | <p>Melanin pigment produced by melanocytes is found within the crista profunda limitans giving a pigmented appearance to the furrows</p> <p>Most common benign acral pattern</p> <p>Variants: Single line variant, Single-dotted line variant, double line variant, double-dotted line variant (peas in pod)</p> <p>Pearls: (1) Diffuse linear pigmentation within the furrows is highly suggestive of a benign acral nevus; (2) "Furrows are Friendly"</p> |  |  |
| Lattice-like pattern | <p>Melanin produced by melanocyte is found within the furrows and as crossing parallel lines in the ridges</p> <p>Pearl: This pattern is more commonly located on the arch of the foot</p> |  |  |
| Fibrillar (Type A or regular) pattern | <p>Melanin produced by melanocytes is found as thin, parallel, transverse lines, with no respect to the ridges or furrows</p> <p>Melanin in the cornified layer has an oblique orientation secondary to mechanical pressure. The fibrils are evenly distributed and are of similar color and thickness. Eccrine pores may not always be visible</p> <p>Pearls: (1) Ends of fibrils are anchored in furrows; (2) Classic location: weight-bearing sole</p> |  |  <p>*Ink test: The ink settles in the furrows, making them easier to identify</p> |

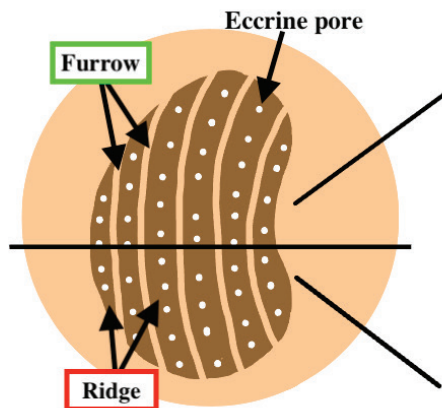
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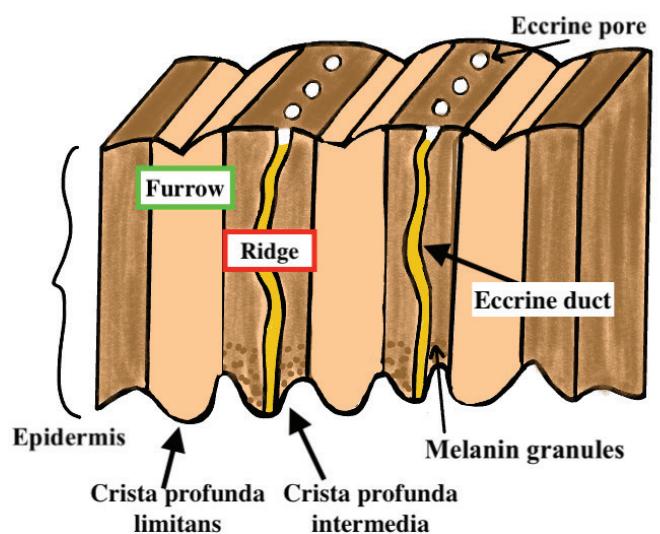
2. Characteristics and structures indicative of melanoma



Acral melanoma prototype: Parallel ridge pattern



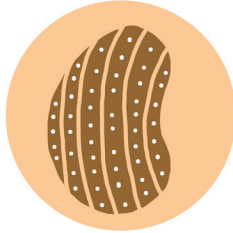
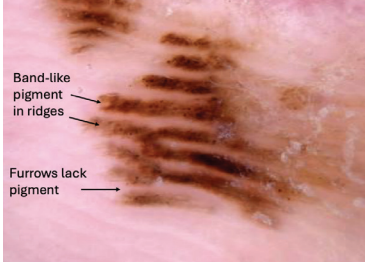

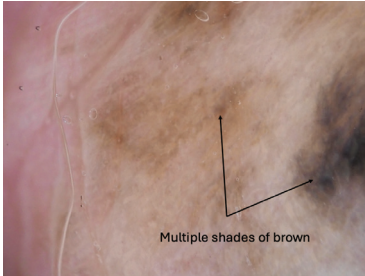


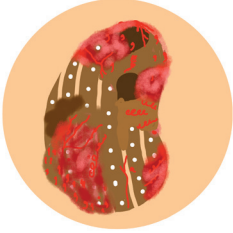
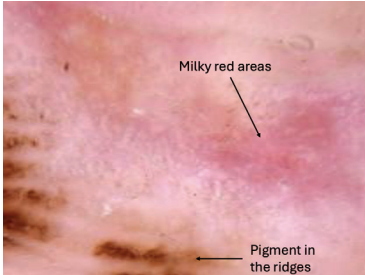
Vertical section



- **Melanoma mimickers:** Subcorneal hemorrhage, Peutz-Jeghers, black heel, congenital nevus, ethnic type volar pigmentation, medications


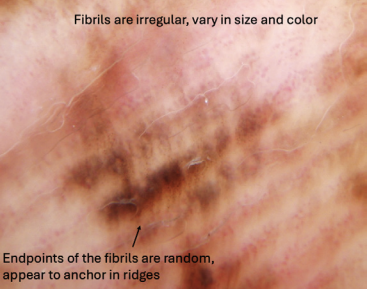

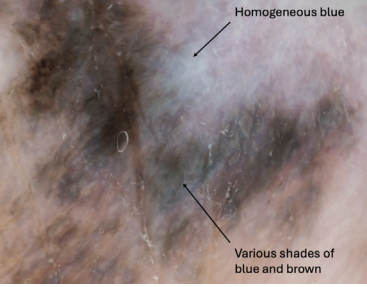
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| Dermoscopic structures | Description | Image | Dermoscopic photo |
|--|---|--|---|
| <p>Parallel ridge pattern (PRP)</p> | <p>Atypical melanocytes are located within the crista profunda intermedia (ridge) resulting in band-like pigmentation in the ridges</p> <p>Pearls: (1) High specificity for melanoma; (2) "Ridges are Risky"</p> |  |  |
| <p>Irregular, diffuse pigmentation of multiple shades of brown</p> | <p>Multiple shades of brown that appear clinically atypical and dermoscopically disorganized</p> <p>Pearls: Commonly found in invasive acral melanoma</p> |  |  |
| <p>Multi-component pattern</p> | <p>Irregular, diffuse pigment with abrupt edges, atypical streaks, irregular dots and globules, and/or blue-white veil</p> <p>Pearls: Localized benign patterns (fibrillar, parallel furrow, lattice) may be present</p> |  |  |
| <p>Atypical vascular pattern</p> | <p>Milky red areas and/or multicomponent pattern with atypical vascular structures</p> |  |  |

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| Dermoscopic structures | Description | Image | Dermoscopic photo |
|--------------------------------------|---|---|--|
| Irregular fibrillar pattern (Type B) | <p>Uneven, irregular fibrils with variable color and thickness that are random and non-furrow anchored</p> <p>Pearls: (1) Any fibrillar pattern on the palms is considered irregular, and should heighten suspicion for melanoma; (2) A focal parallel ridge pattern may be seen</p> |  |  |
| Homogenous pattern | <p>Homogeneous blue that may have other colors or disorganized patterns</p> <p>Pearls: Large size is concerning for melanoma (>7 mm)</p> |  |  |

References

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