

An abstract graphic on the left side of the slide, featuring a series of overlapping, wavy shapes in shades of red, orange, yellow, and blue, creating a sense of movement and depth against the black background.

Neutrophilic and Eosinophilic Infiltrate

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Granulomatous
(histiocytes)
SARCOIDOSIS

Suppurative
granulomatous
INFECTION

Histiocytes
XANTHOMA

Mast cell
URTICARIA
PIGMENTOSA

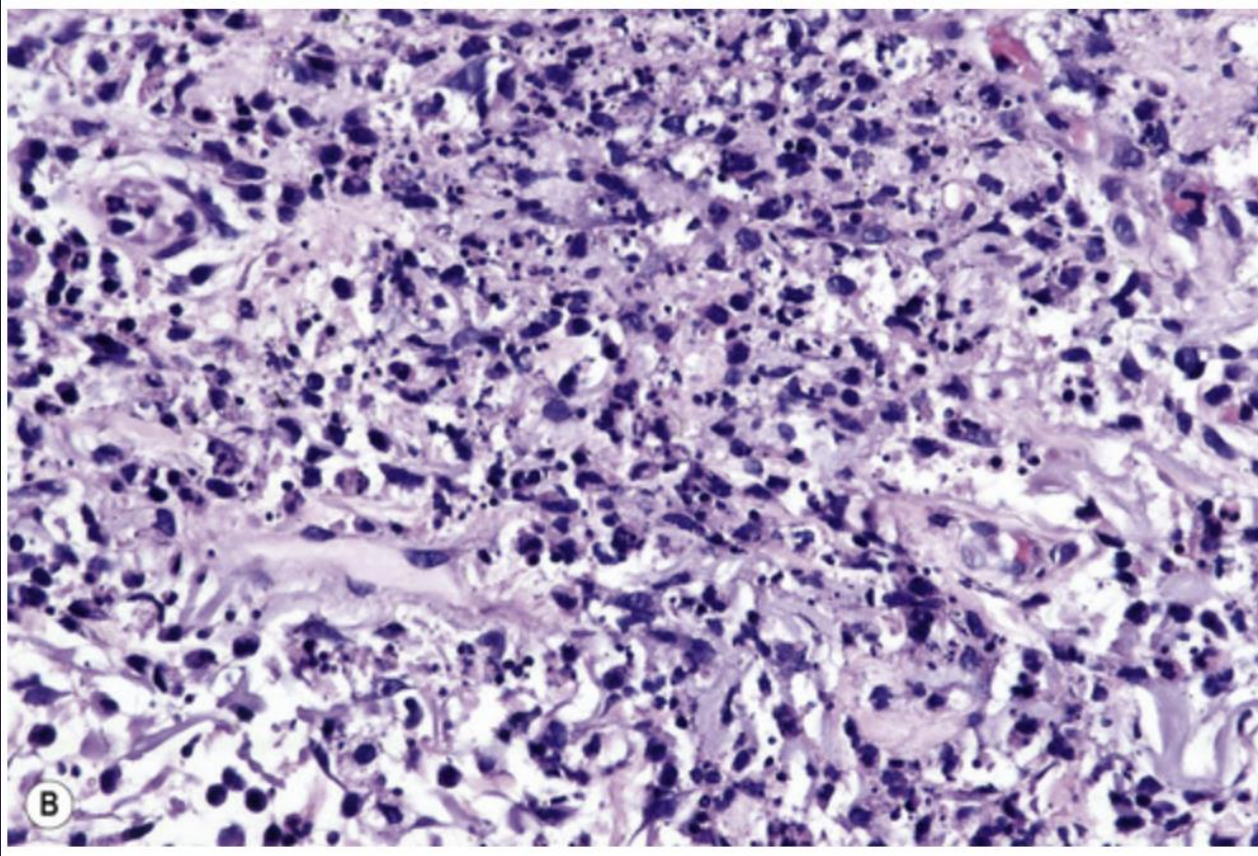
Plasma cell
ZOON
BALANITIS

Eosinophils
WELLS
SYNDROME

Neutrophils
SWEET
SYNDROME

Nodular and Diffuse Cutaneous Infiltrates

Neutrophilic infiltrates



Rheumatoid neutrophilic dermatitis

Sweet
syndrome

Pyoderma
gangrenosum

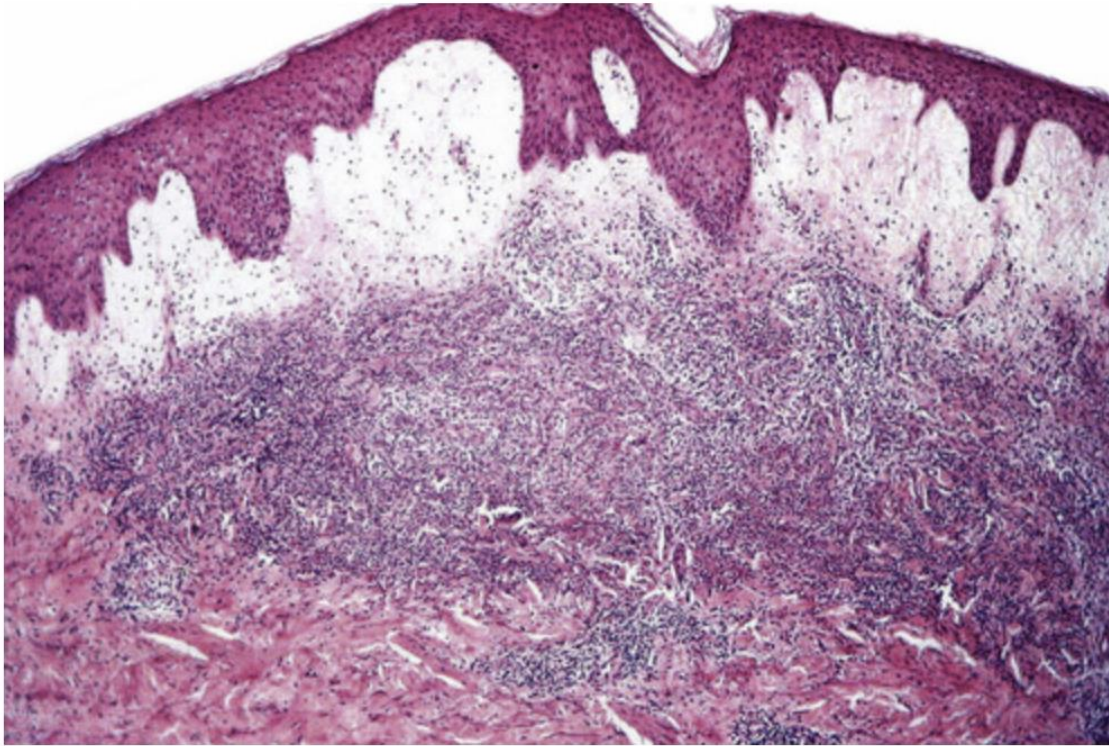
Rheumatoid
neutrophilic
dermatitis

Behcet disease

Bowel-associated
dermatosis-arthritis
syndrome

Granuloma
faciale

Erythema
elevatum
diutinum



Sweet syndrome

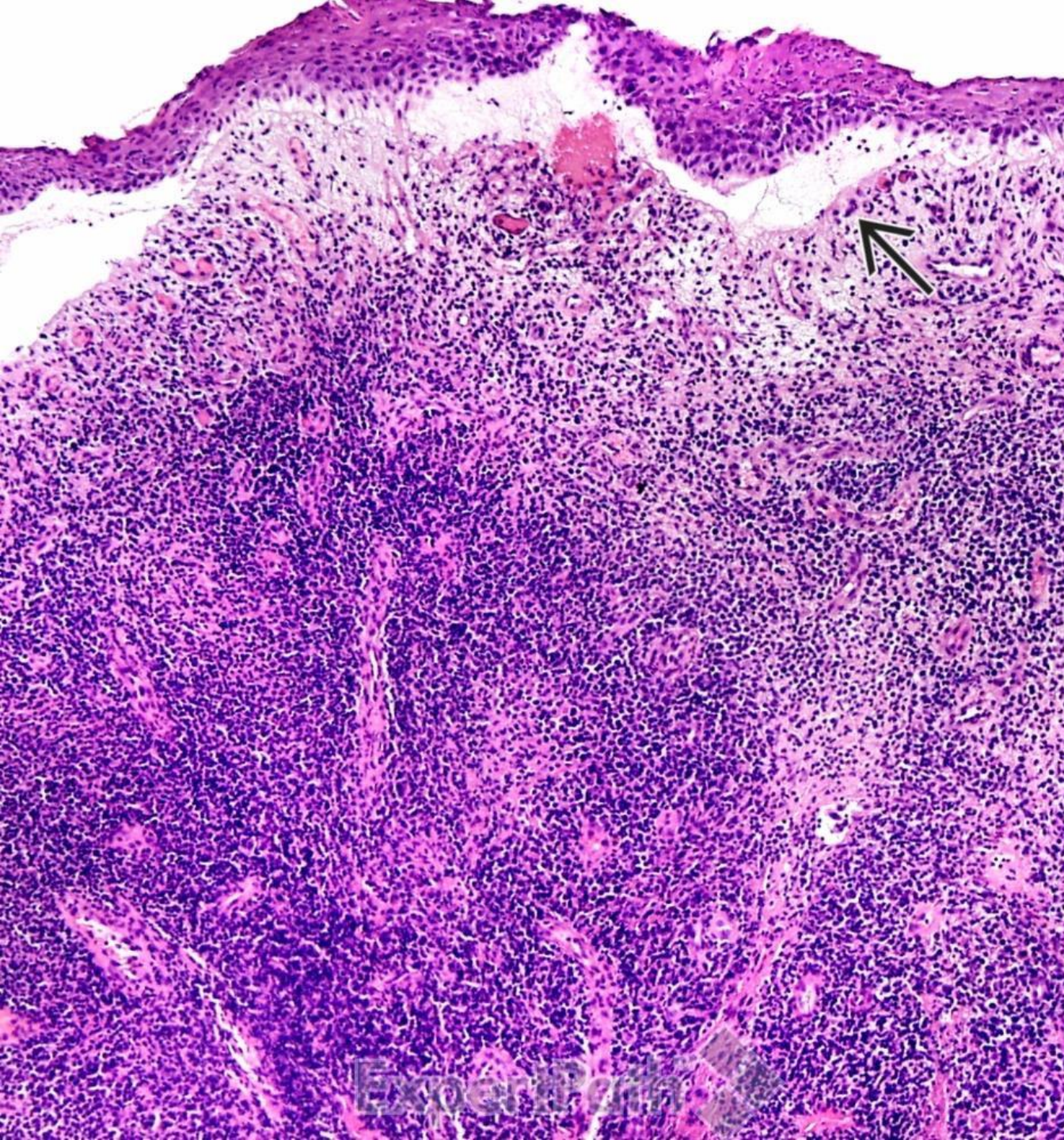
Tips and considerations

- Think about infection and infestation
- Microbial cultures
- Labs (CBC with differential, peripheral blood eosinophilic count)
- Biopsy the edge of plaque/papule
- Use PUNCH biopsy (shave inadequate)

How does Sweet syndrome present?

- Clinical photo of Sweet syndrome on the lower leg shows a purple-red plaque (black solid arrow). Fever and rapid response to systemic corticosteroids would be expected. Underlying disease, especially leukemia, should be considered.

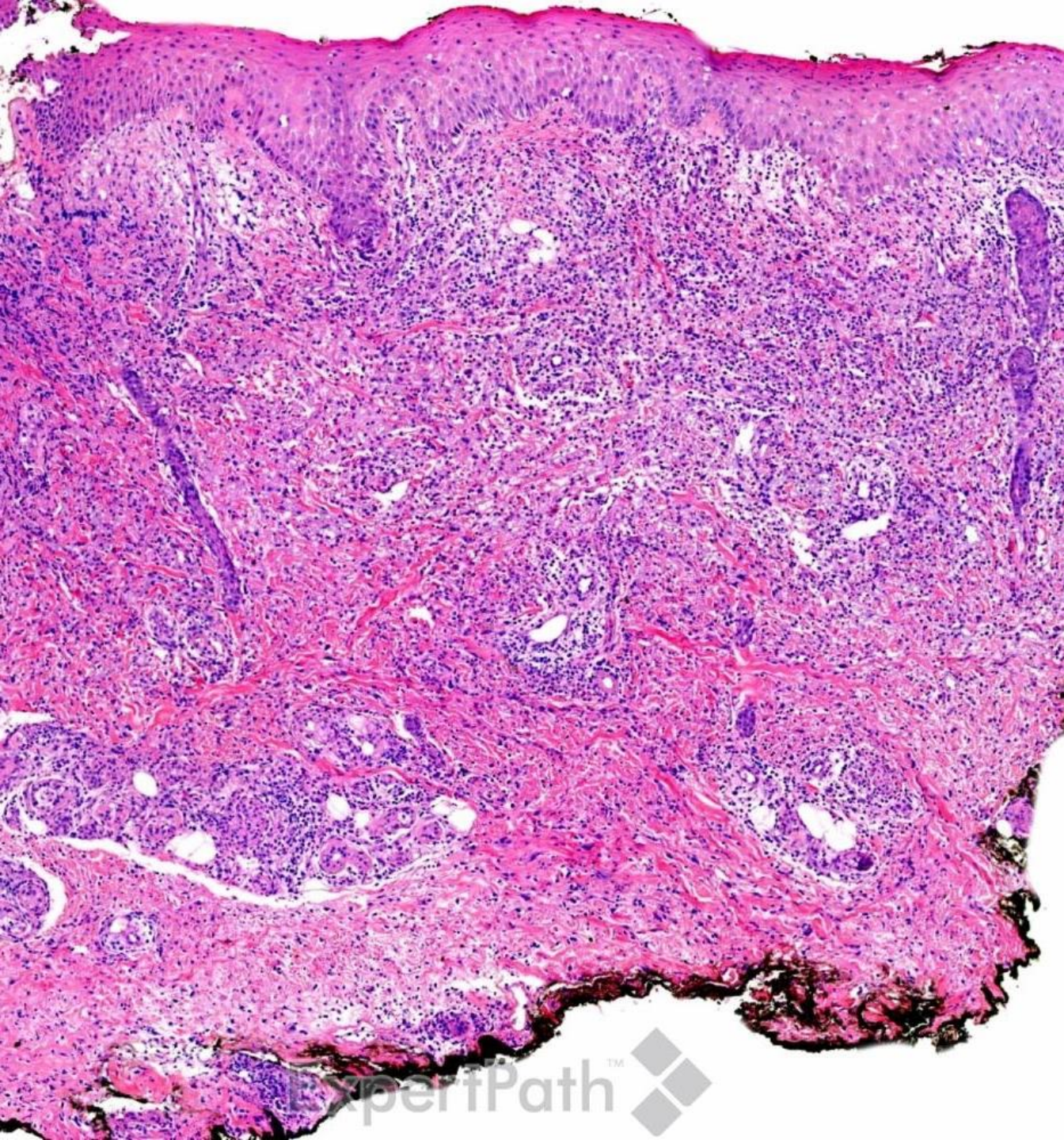




What is the histopathology of Sweet syndrome?

Low-power view of Sweet syndrome shows a dense, dermal, inflammatory infiltrate that almost obscures the dermis. Note also the marked edema of the papillary dermis (black solid arrow).

- DDX:
 - Leukemia
 - Erythema elevatum diutinum
 - Granuloma faciale
 - Pyoderma gangrenosum



What is the histopathology of Sweet syndrome?

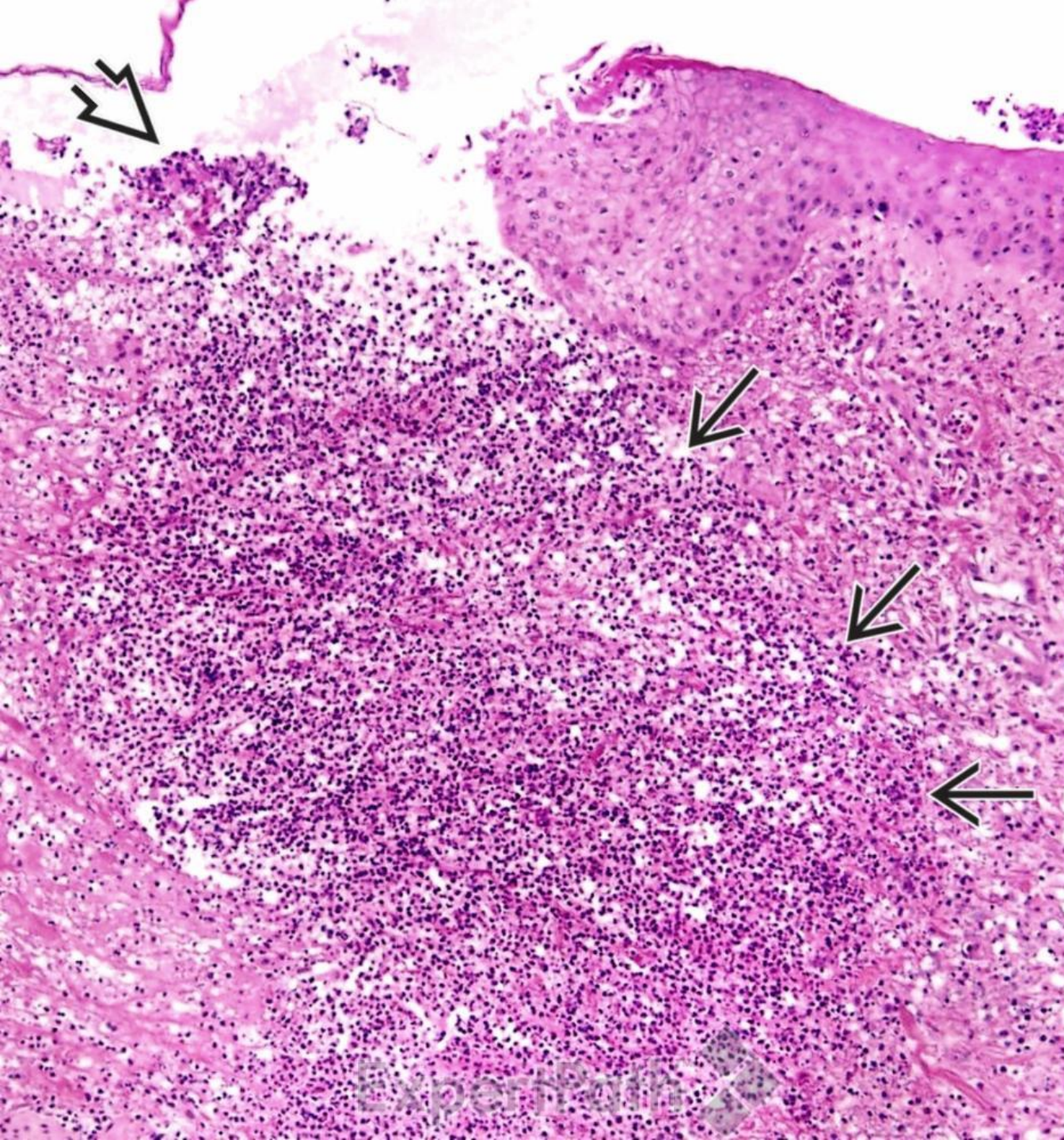
Low-power view of histiocytoid Sweet syndrome (a.k.a. lymphocytic variant) demonstrates a diffuse dermal sheet of inflammatory cells that were identified as histiocytes on higher power. Use CD68 IHC.

Subsequent to hematologic malignancy



How does pyoderma gangrenosum present ?

Pyoderma gangrenosum (PG) demonstrates ulceration (black solid arrow) with undermining of the remaining intact epidermis (white solid arrow), giving it the characteristic rolled border appearance.



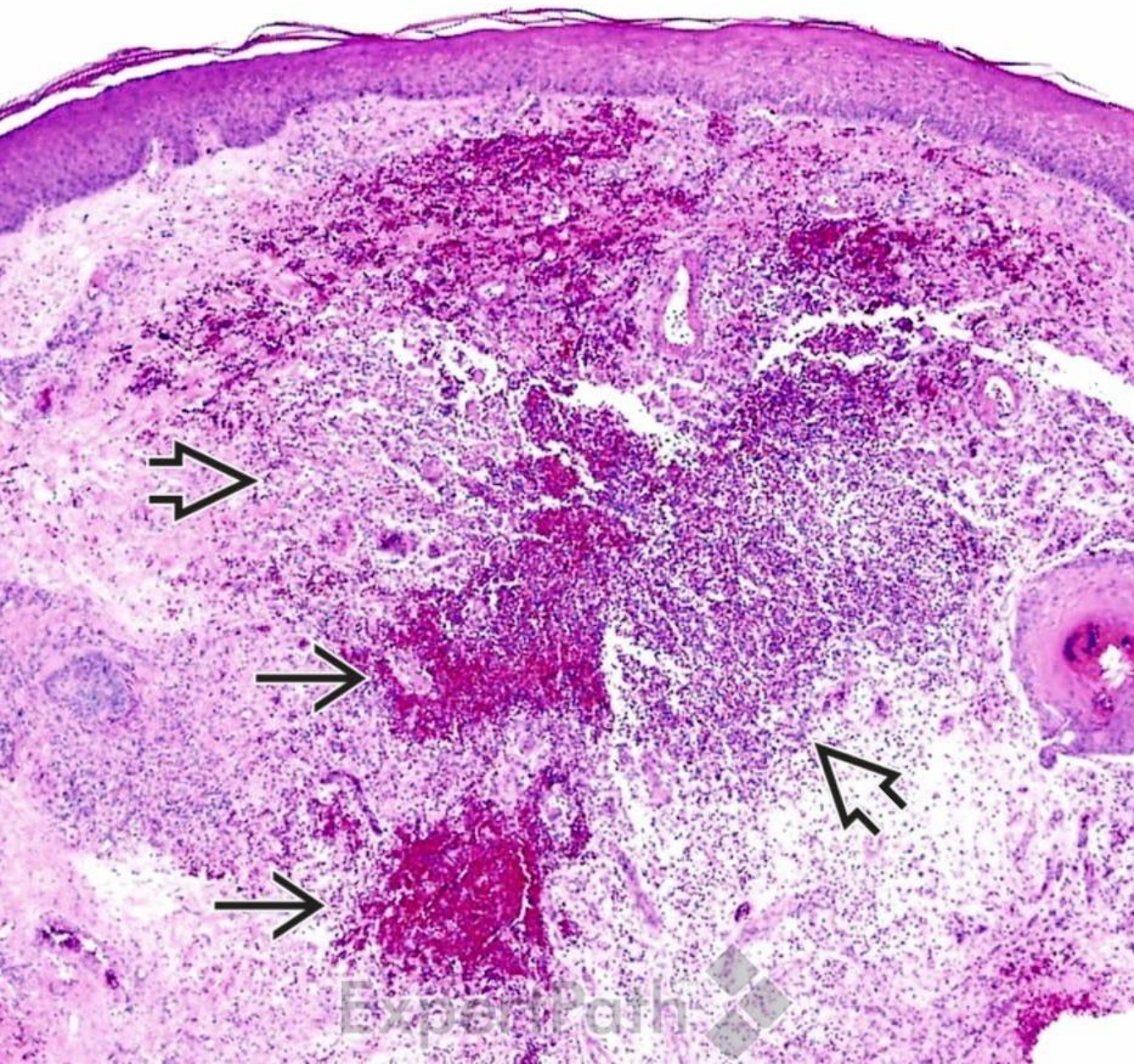
What is the histopathology pyoderma gangrenosum?

The edge of PG demonstrates undermining of the epidermis by numerous neutrophils (black solid arrow) and epidermal ulceration (black open arrow).

- DDX:
 - Sweet syndrome
 - Bite reaction
 - Factitial ulcer
 - Deep infection
 - Necrotizing fasciitis
 - Granulomatosis with polyangiitis (Wegener)

What is the histopathology of early pyoderma gangrenosum?

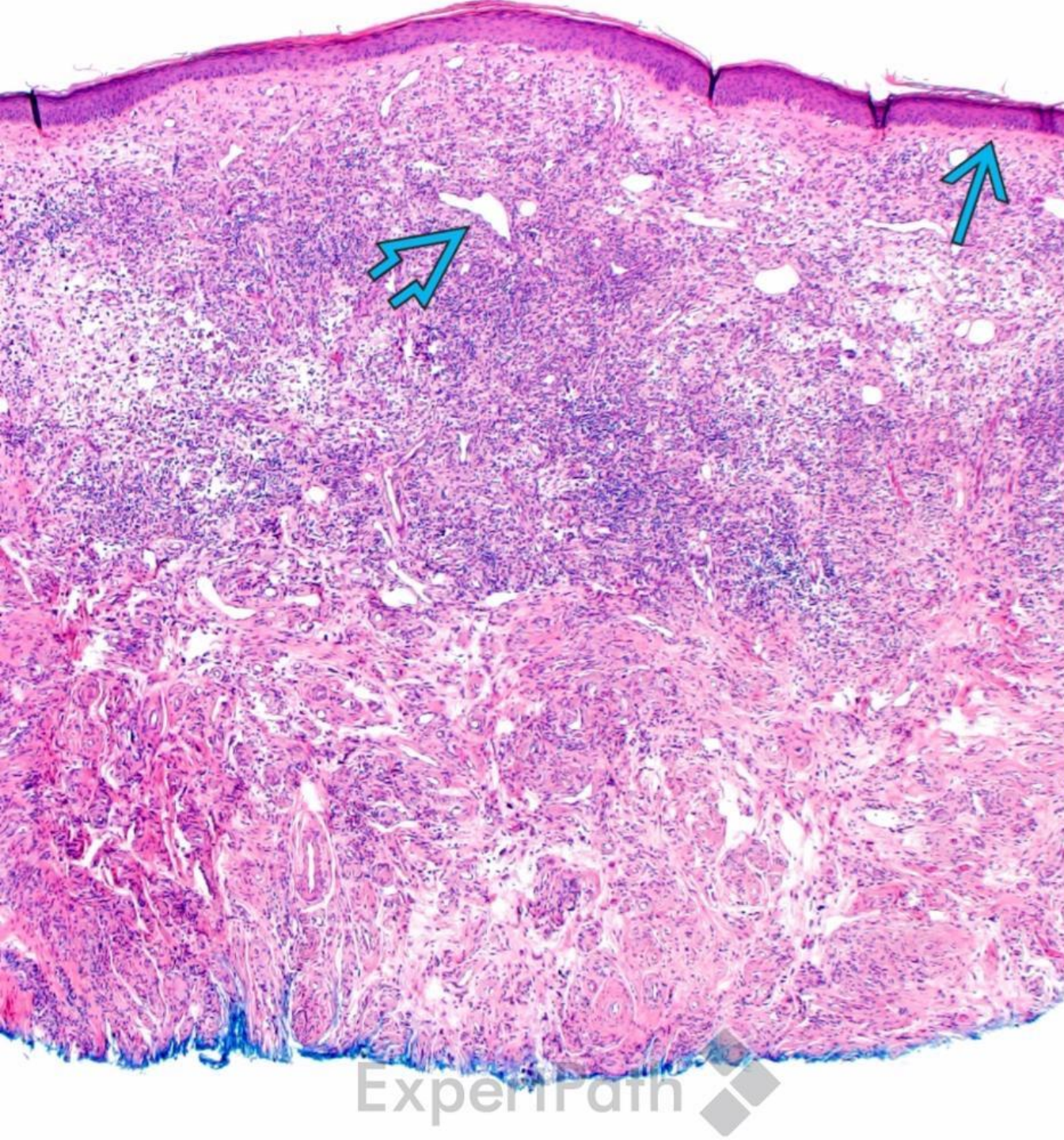
Early PG shows a lack of epidermal ulceration but the same characteristic deep dermal ulcer with hemorrhage (black solid arrow) and numerous neutrophils (black open arrow).





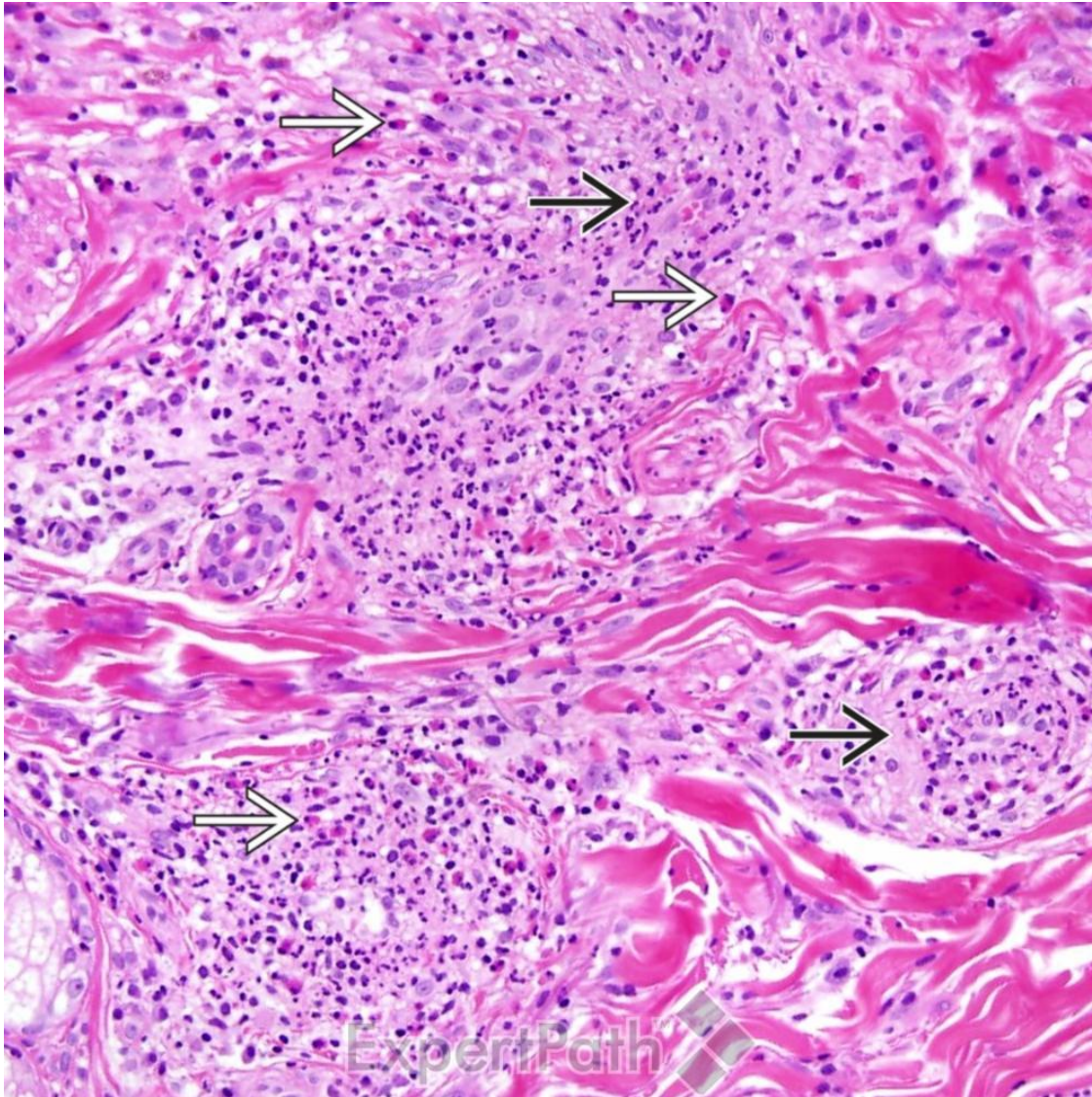
How does granuloma faciale present?

Granuloma faciale (GF) can present as reddish-brown, slightly indurated, asymptomatic plaques over the cheeks. This condition most commonly affects White men.



What is the histopathology of granuloma faciale?

Common findings of GF include a *grenz* zone (cyan solid arrow), mixed inflammation involving the upper 2/3 of the dermis, and telangiectasias (cyan open arrow).



What is the histopathology of early granuloma faciale?

- Early GF shows leukocytoclastic vasculitis (black solid arrow) with a predominantly neutrophilic infiltrate and many eosinophils (white solid arrow).
- DDX:
 - Sweet syndrome
 - Erythema elevatum diutinum
 - Leukocytoclastic vasculitis
 - Arthropod bite reaction

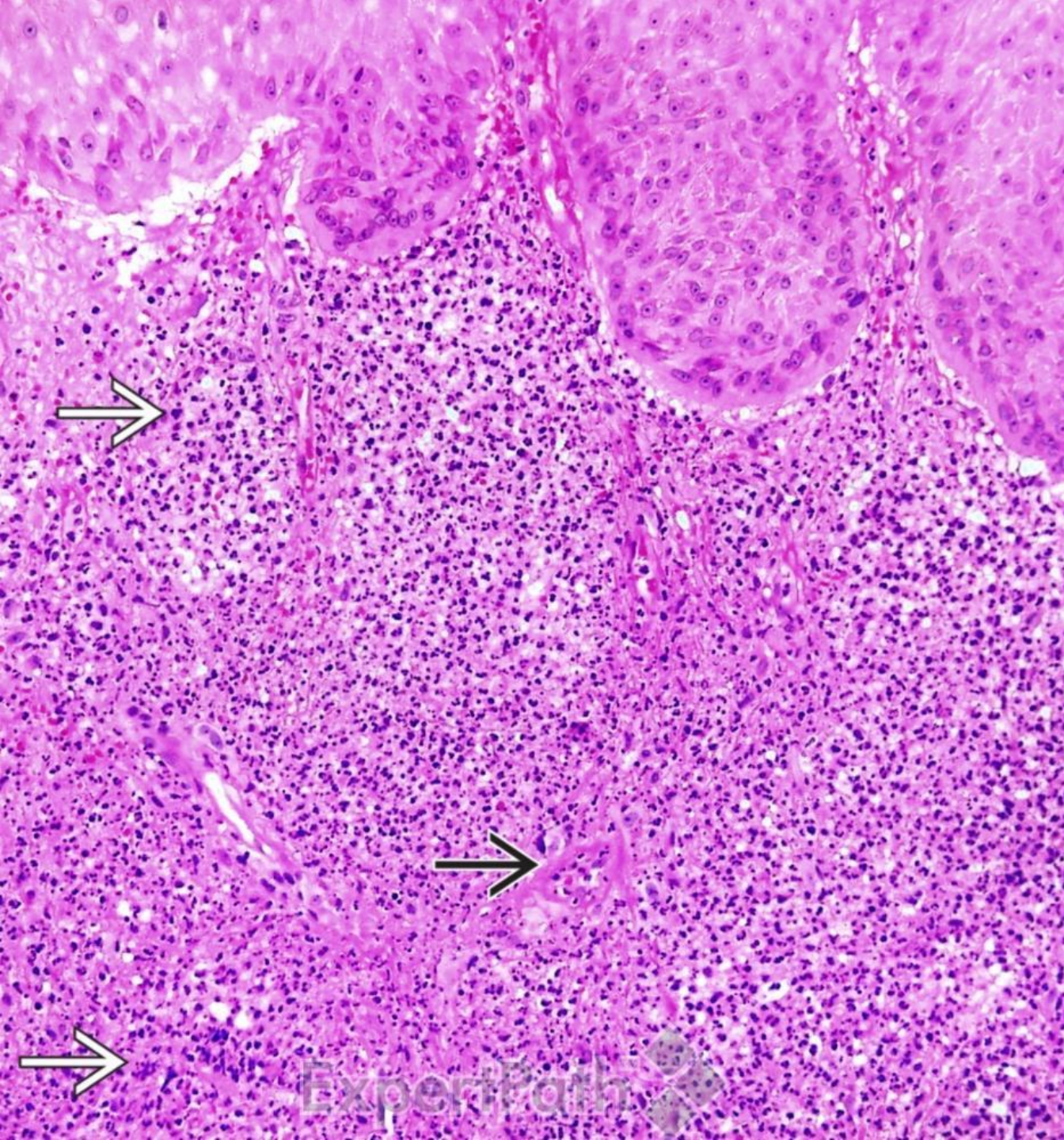


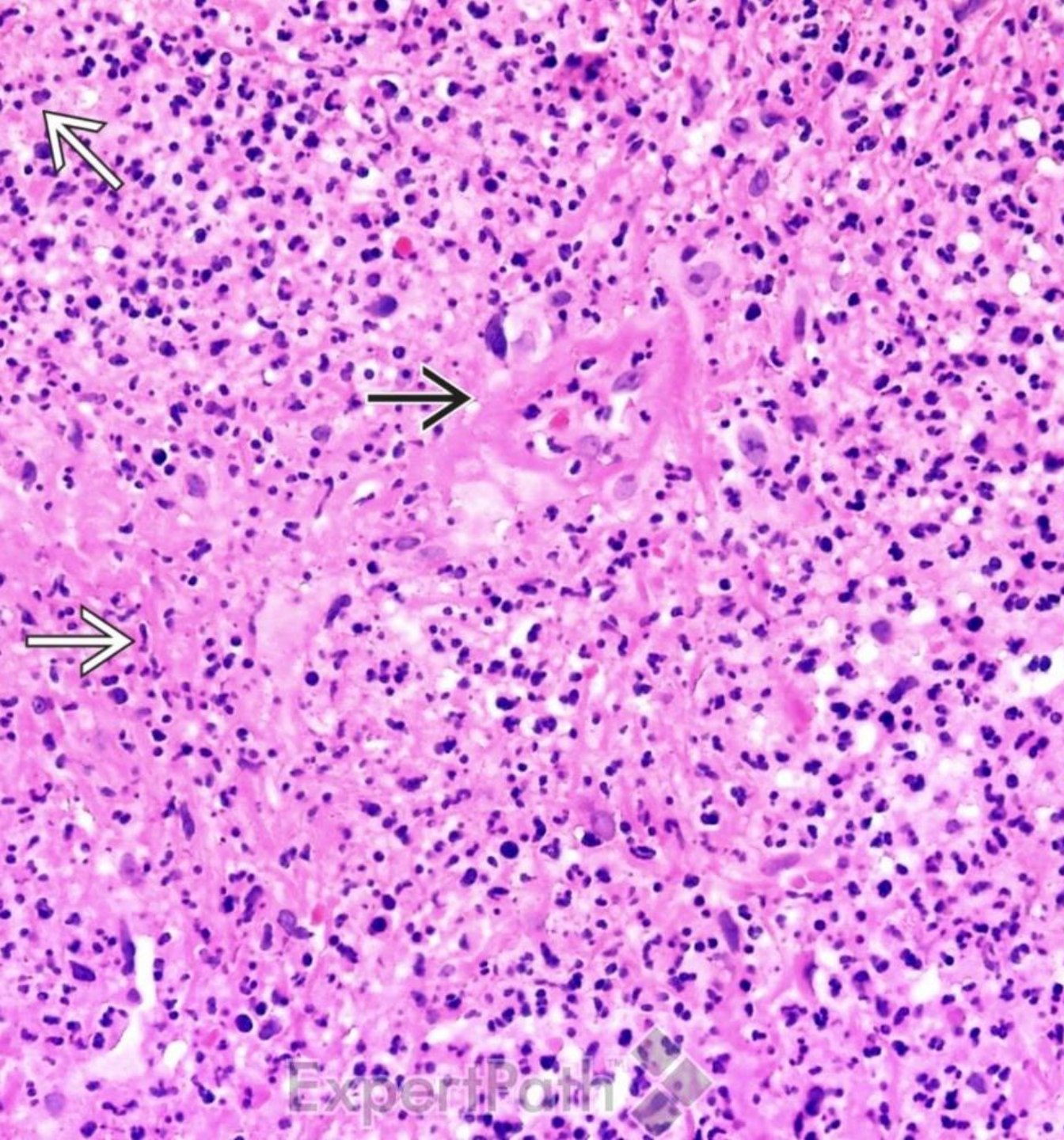
How does erythema elevatum diutinum present?

- Erythema elevatum diutinum (EED) can present as dull red, asymptomatic, chronic, indurated plaques over the knee (extensor surface).

What is the histopathology of early erythema elevatum diutinum?

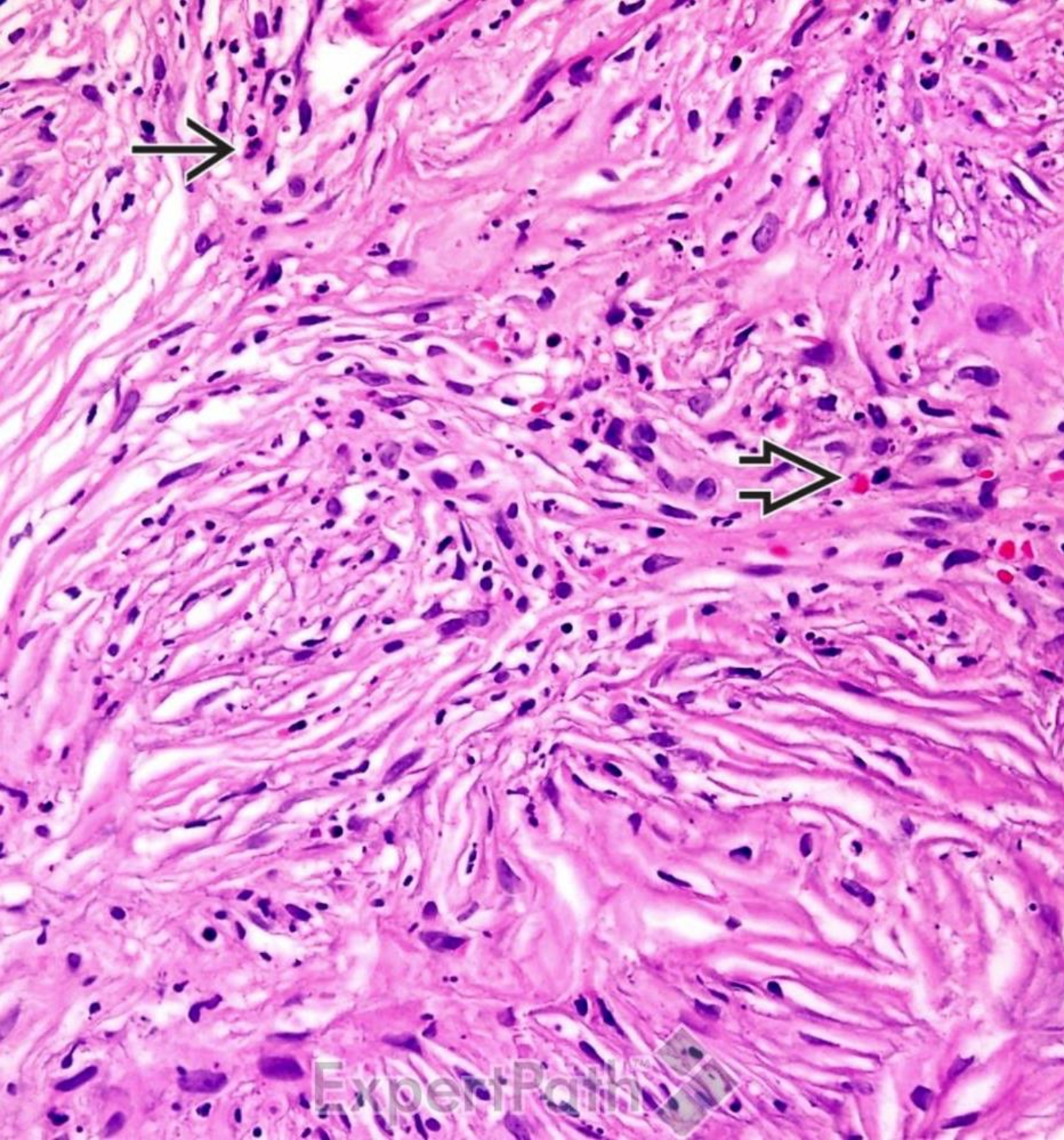
- Early EED shows numerous neutrophils (white solid arrow) within the dermis, indistinguishable from other neutrophilic dermatoses. Note vessel damage (black solid arrow) just as in leukocytoclastic vasculitis.





What is the histopathology of early erythema elevatum diutinum?

- High-power view of early EED demonstrates fibrinoid necrosis of small vessels (black solid arrow) in the upper dermis with abundant neutrophils and karyorrhectic debris (white solid arrow).
- DDX:
 - Sweet syndrome
 - Granuloma faciale
 - Leukocytoclastic vasculitis
 - Arthropod bite reaction

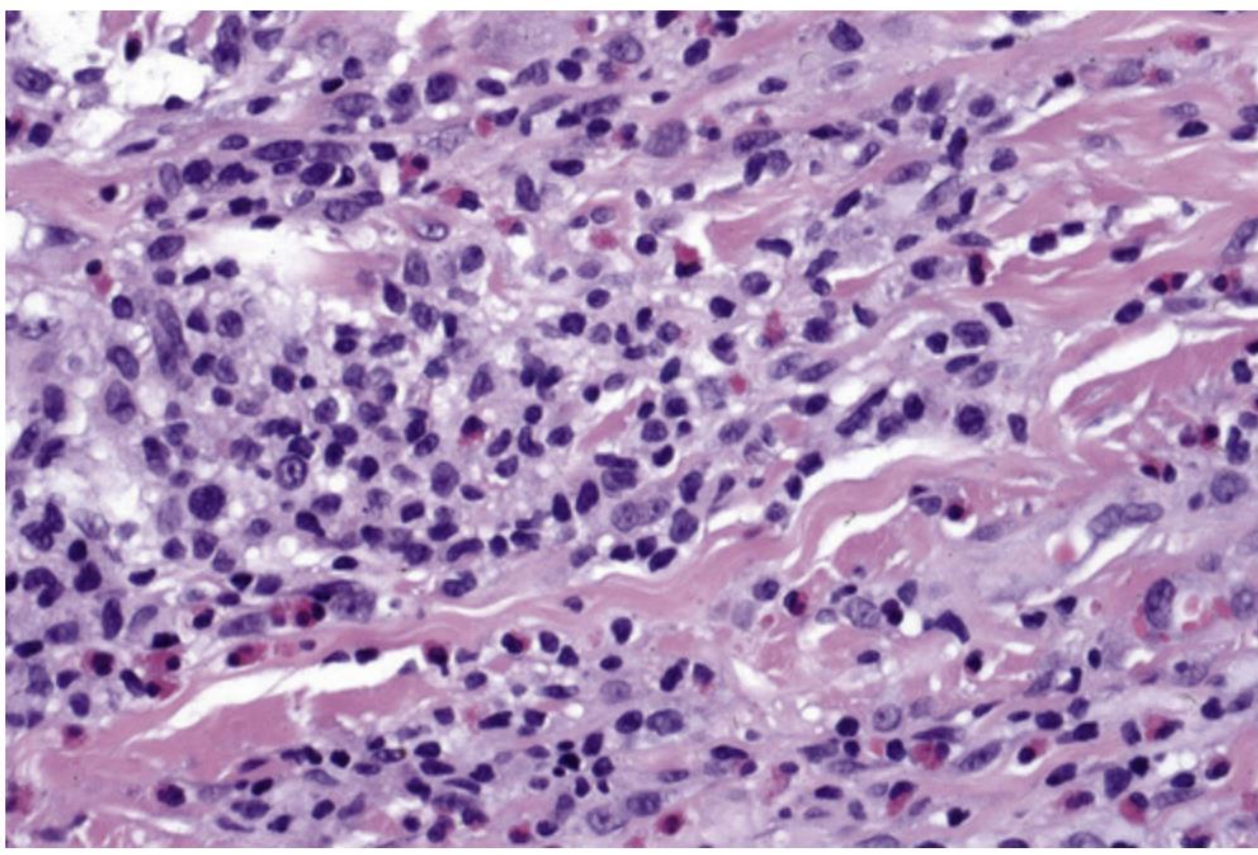


What is the histopathology of late erythema elevatum diutinum?

- High-power view of late EED demonstrates a storiform pattern of fibrosis with numerous neutrophils (black solid arrow) and rare extravasated red blood cells (black open arrow).



Eosinophilic infiltrates



Tick bite

Wells syndrome

Hypereosinophilic syndrome

Dermal hypersensitivity reaction

Arthropod bite reaction

Urticaria

Scabies (other infestations)

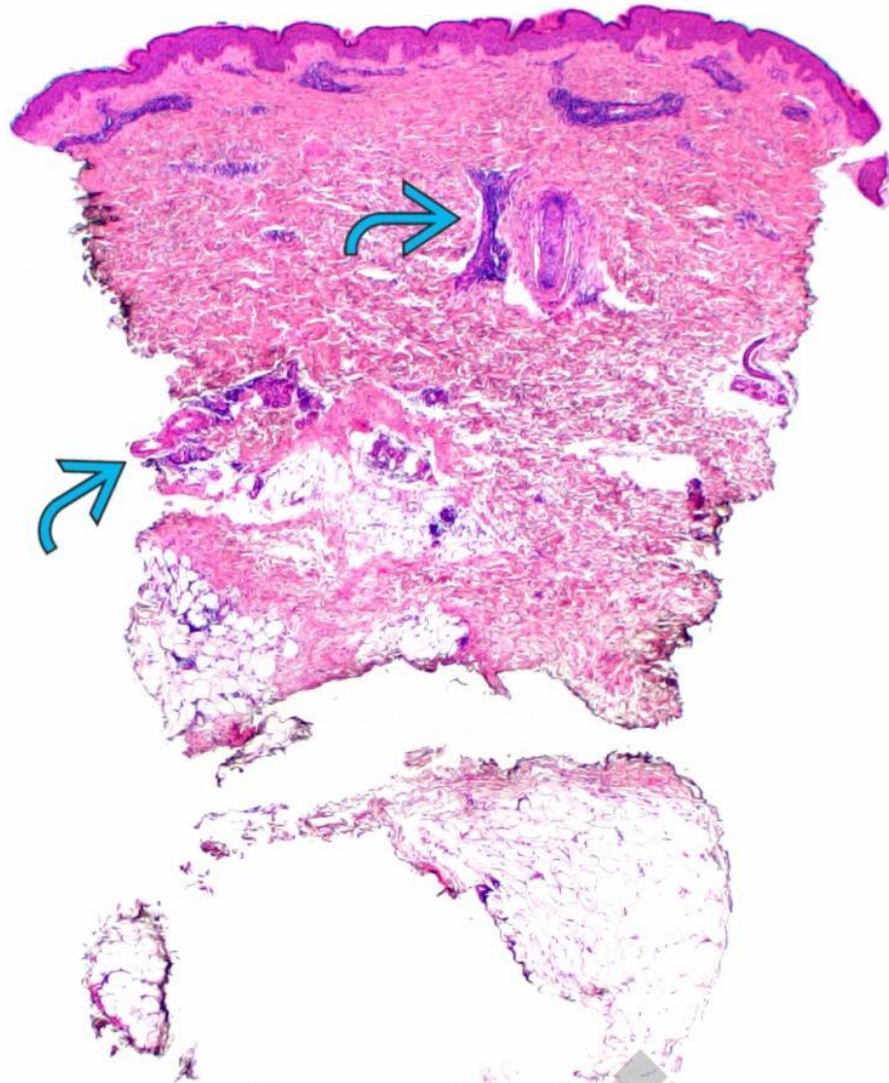
How does an arthropod bite reaction present?

- Clinical features vary depending on the arthropod species and their venom. Most commonly, lesions appear as excoriated, purpuric papules (black curved arrow), but vesicles, bullae, nodules, erosions, and ulcers can also occur.



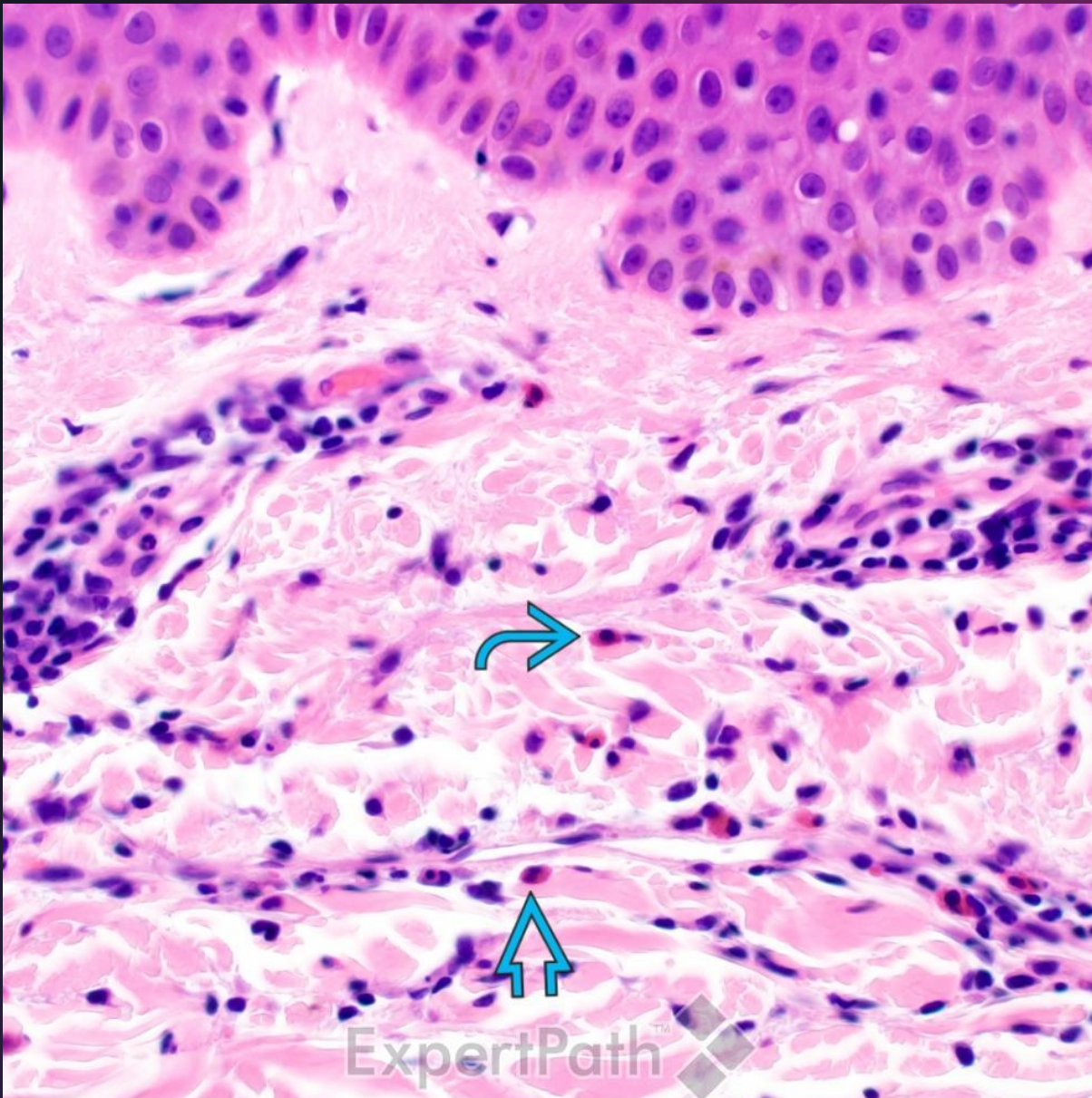
What is the histopathology of arthropod bite reaction?

- Low-power view of a bug bite reaction demonstrates a superficial and deep periadnexal/perivascular (cyan curved arrow) and interstitial inflammatory infiltrate.



What is the histopathology of arthropod bite reaction?

- High-power view of a bug bite reaction demonstrates a perivascular and interstitial lymphocytic infiltrate with numerous eosinophils (cyan open arrow), many of which are in an interstitial location (cyan curved arrow).
- DDX:
 - Dermal hypersensitivity reaction
 - Urticaria
 - Hypereosinophilic syndrome



What is the histopathology of arthropod bite reaction?

- One clue to bug bite reaction is eosinophils (cyan curved arrow) in a deep location (especially in the subcutis (cyan open arrow) or at the reticular dermis/subcutis interface, as seen here.



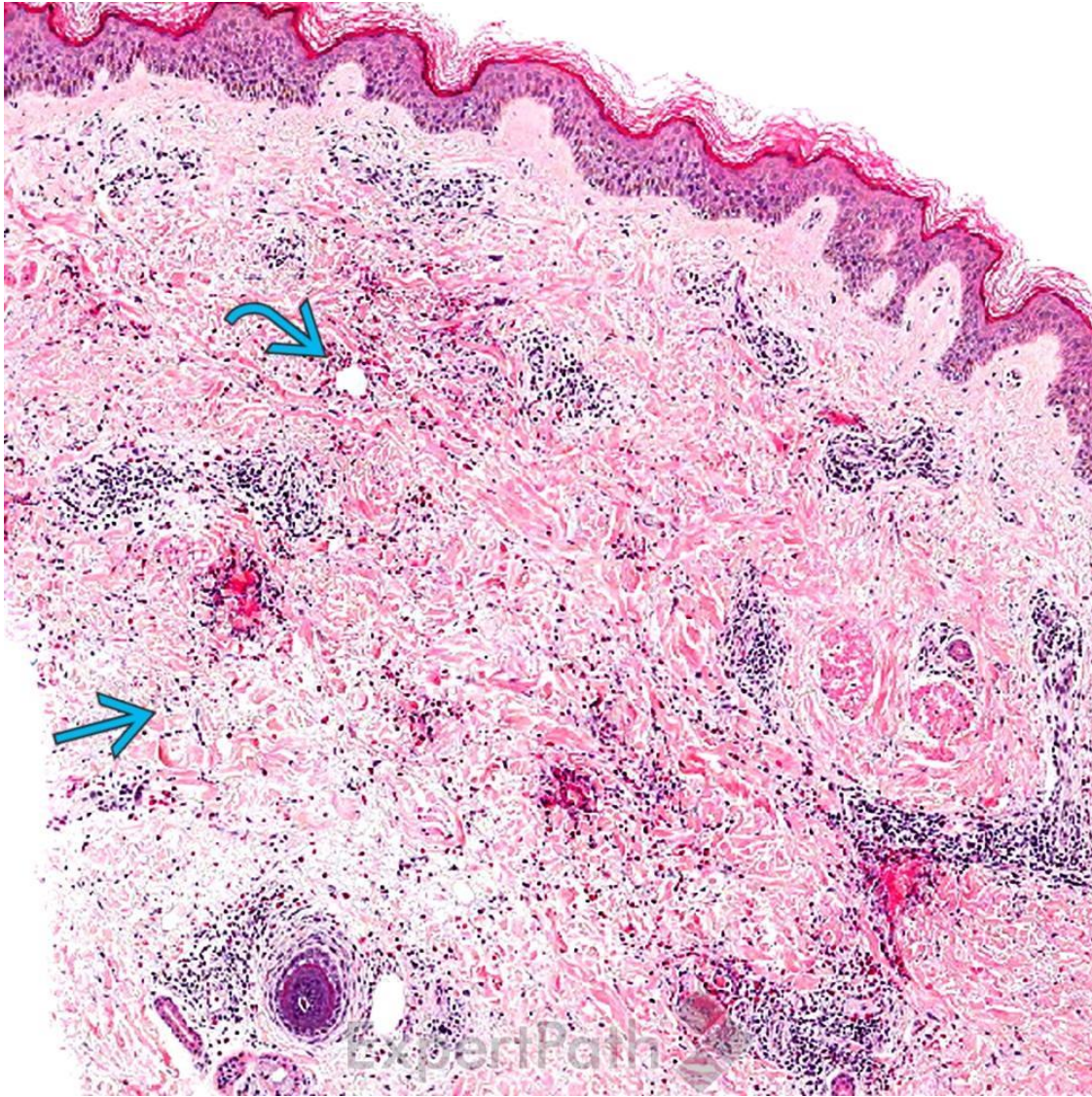
What is the histopathology of arthropod bite reaction?

- Arthropod bite reaction demonstrates a wedge-shaped silhouette on low power. There is also spongiosis and vesicle formation (white solid arrow), which may mimic the edema seen in PMLE (eosinophils absent). Eosinophils were easily identified on higher power.



How does eosinophilic fasciitis (Wells syndrome) present?

- Large painful or pruritic erythematous swollen plaque
- Limbs commonly affected
- Variable morphology: urticarial, annular, or bullous
- Peripheral eosinophilia

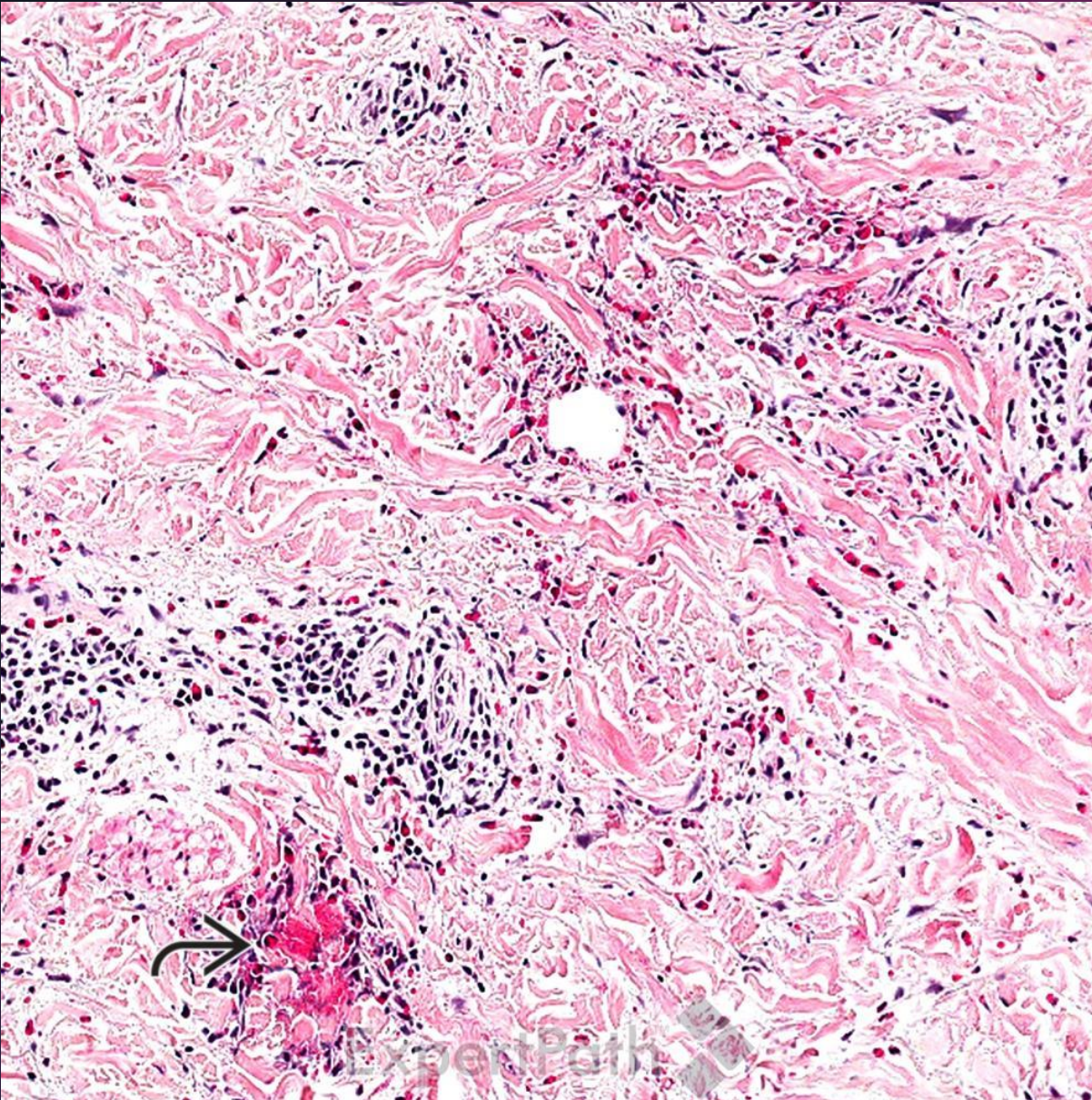


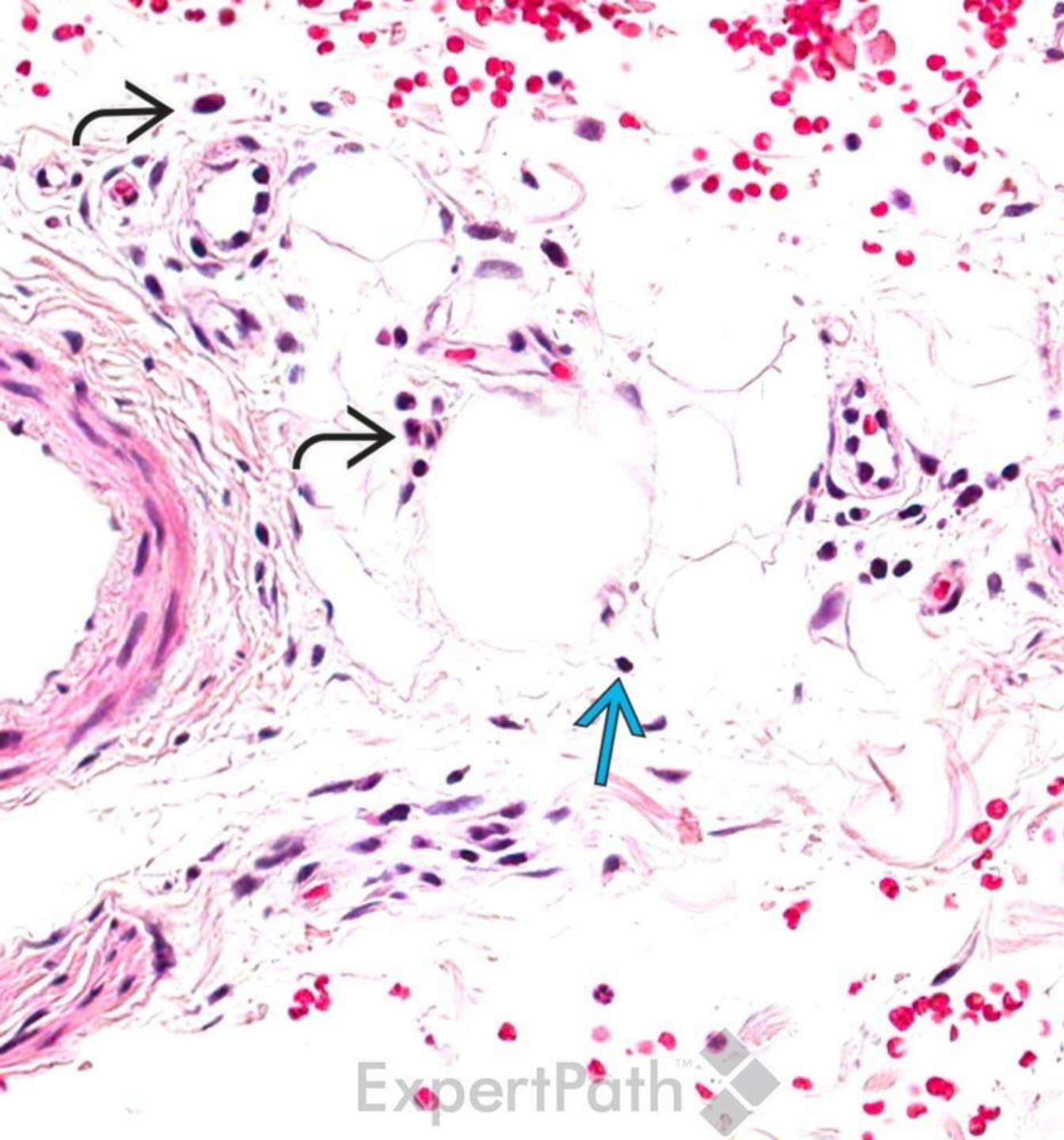
What is the histopathology of eosinophilic fasciitis (Wells syndrome)?

- Medium-power view shows a perivascular (cyan curved arrow) and interstitial (cyan solid arrow) infiltrate of eosinophils, admixed lymphocytes, and macrophages in the dermis.

What is the histopathology of eosinophilic fasciitis (Wells syndrome)?

- Abundance of degranulating eosinophils results in flame figures (black curved arrow).





What is the histopathology of eosinophilic fasciitis (Wells syndrome)?

- Subcutaneous fat involvement of the inflammatory infiltrate is common in eosinophilic cellulitis and is composed of numerous interstitial eosinophils (black curved arrow) and lymphocytes (cyan solid arrow).

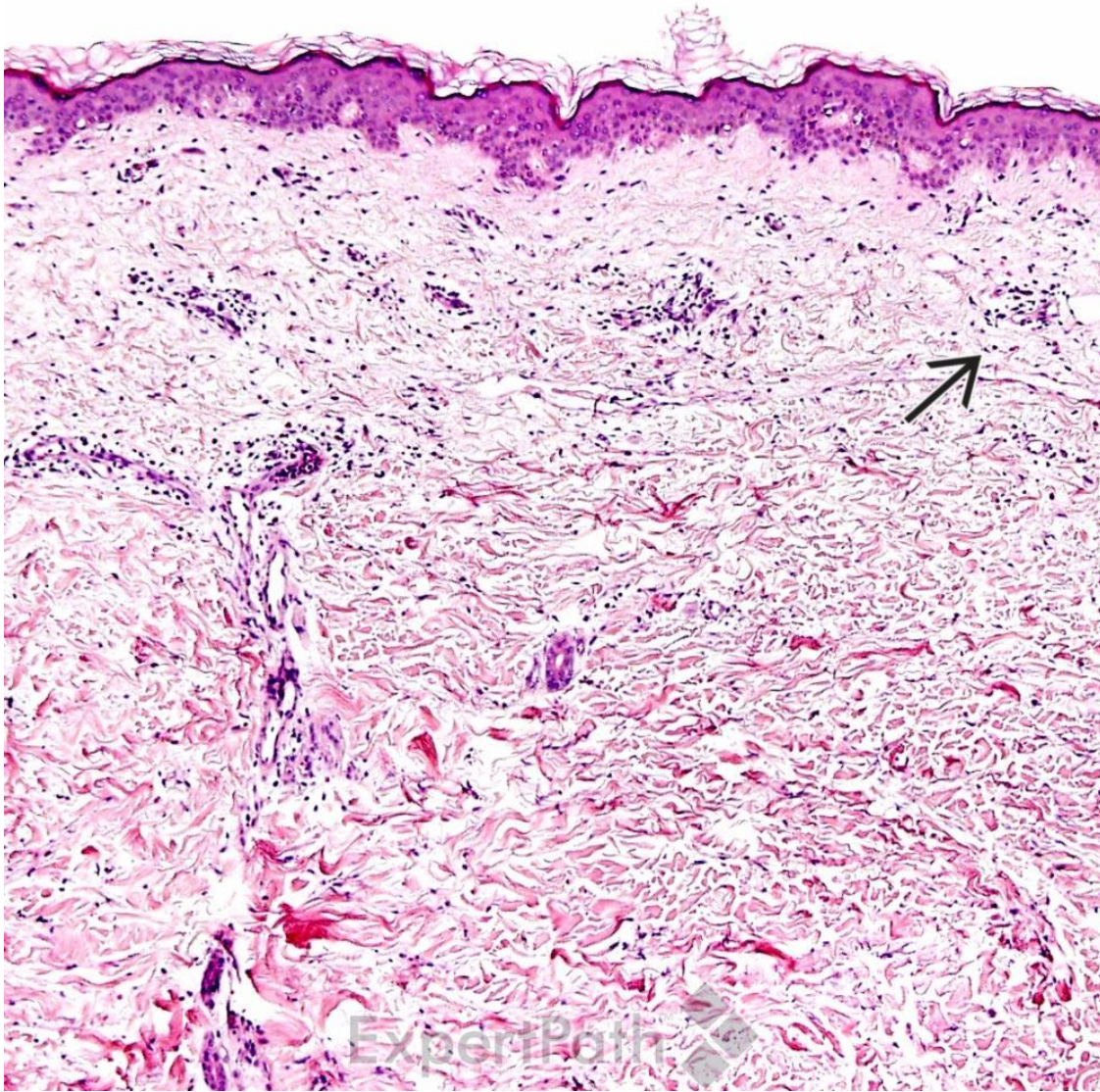
How does urticaria present?

- Clinical photo of chronic urticaria shows pink, well-demarcated papules and plaques on the forearm. These are very pruritic and evanescent; they will disappear and move to new areas every 24 hours or less.



What is the histopathology of urticaria?

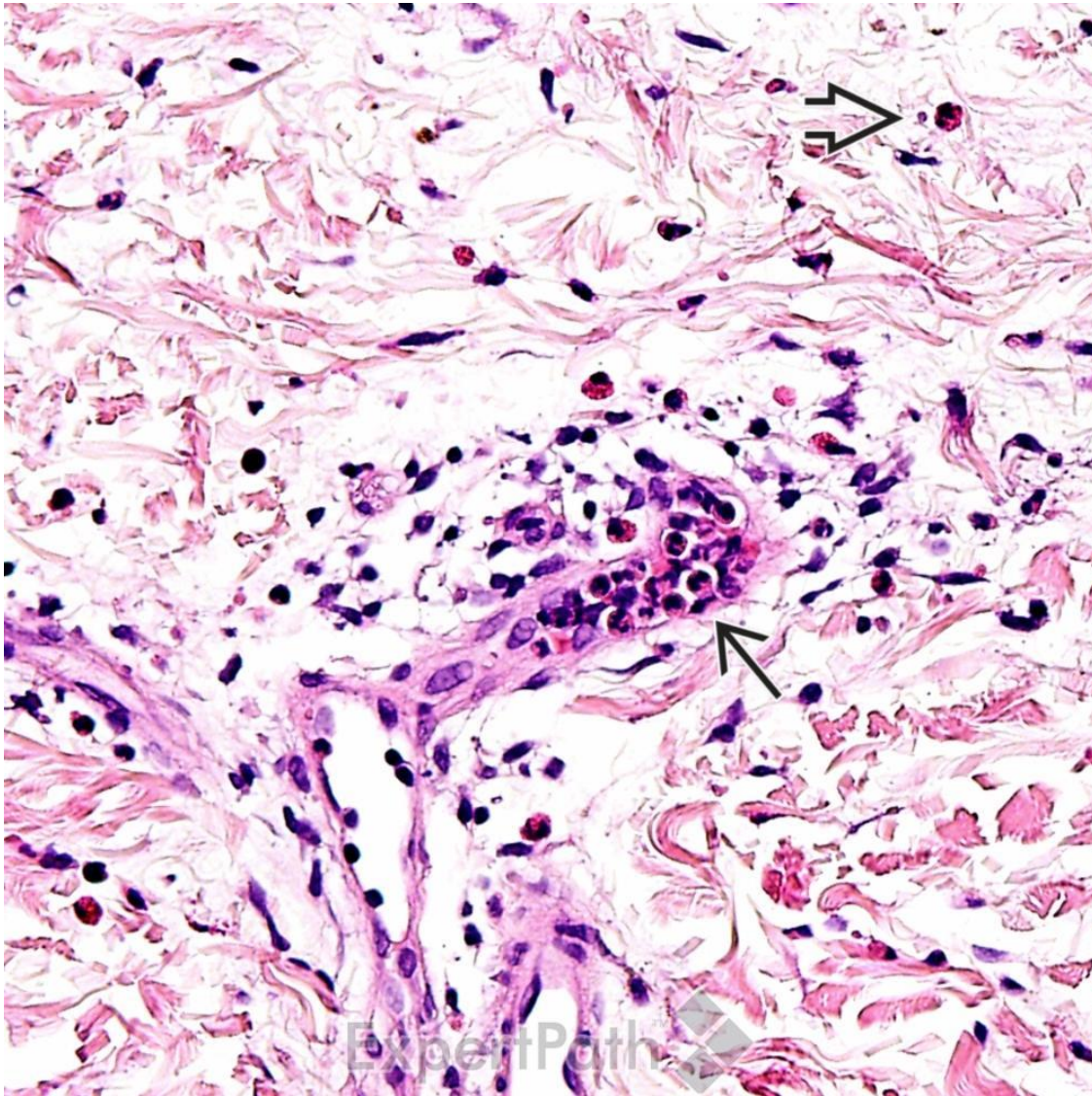
- Histologic findings in urticaria can be nonspecific with a sparse polymorphous, perivascular infiltrate (black solid arrow) and interstitial infiltrate with slight dermal edema.



What is the histopathology of urticaria?

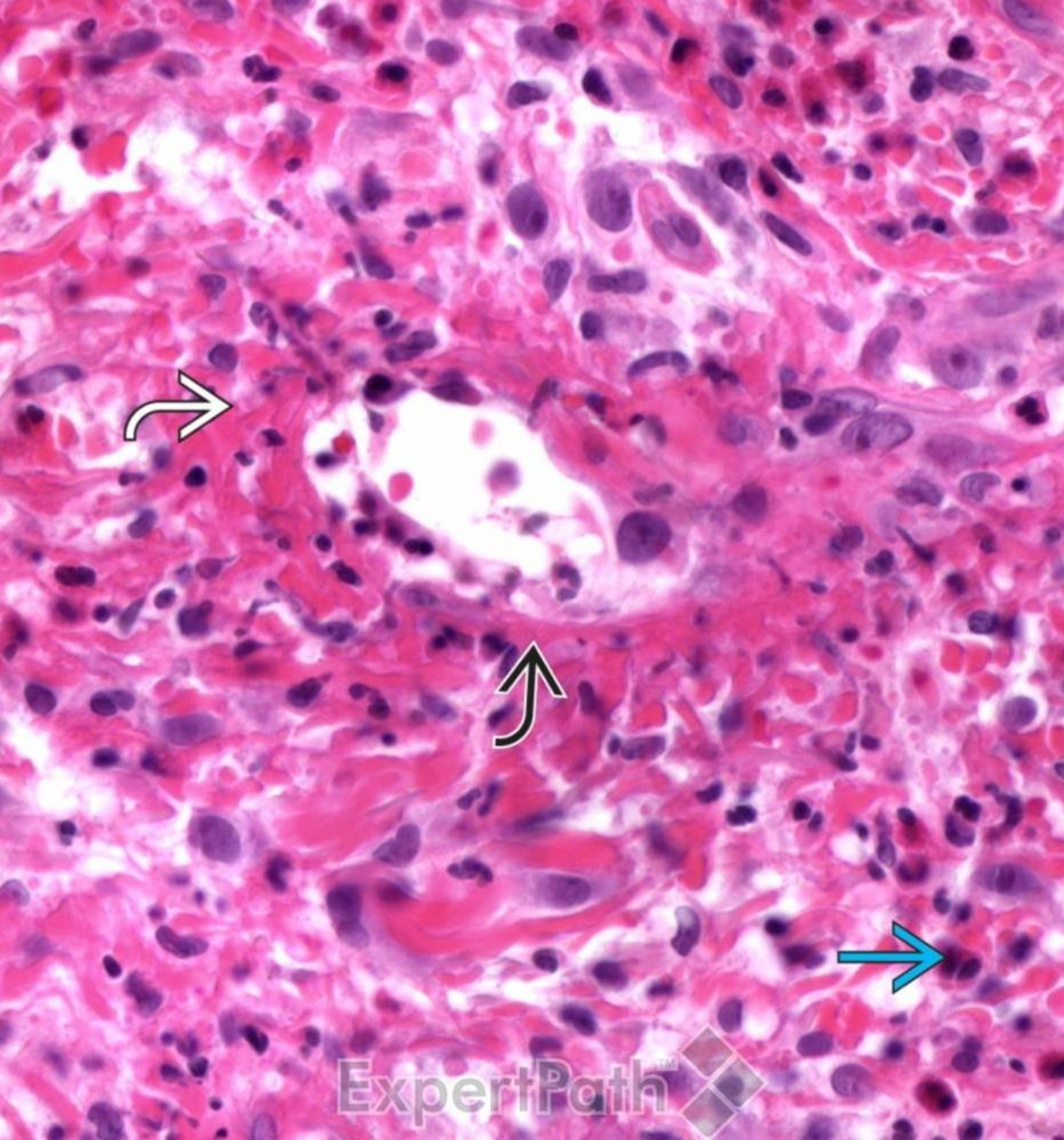
High-power view of urticaria demonstrates neutrophils within the lumen of superficial vessels (black solid arrow) and a mild polymorphous, perivascular and interstitial (black open arrow) infiltrate, which may be the only findings in some lesions.

- DDX:
 - Arthropod bite reaction
 - Dermal hypersensitivity reaction
 - Urticarial vasculitis



What is the histopathology of urticaria?

- Urticarial vasculitis is essentially an entity that looks like hives clinically but shows vasculitis on biopsy (seen here). Note the RBC extravasation (cyan solid arrow), karyorrhexis (white curved arrow), and vessel wall damage with deposition of fibrinoid material (black curved arrow). (Courtesy D. Whittemore, DO.)



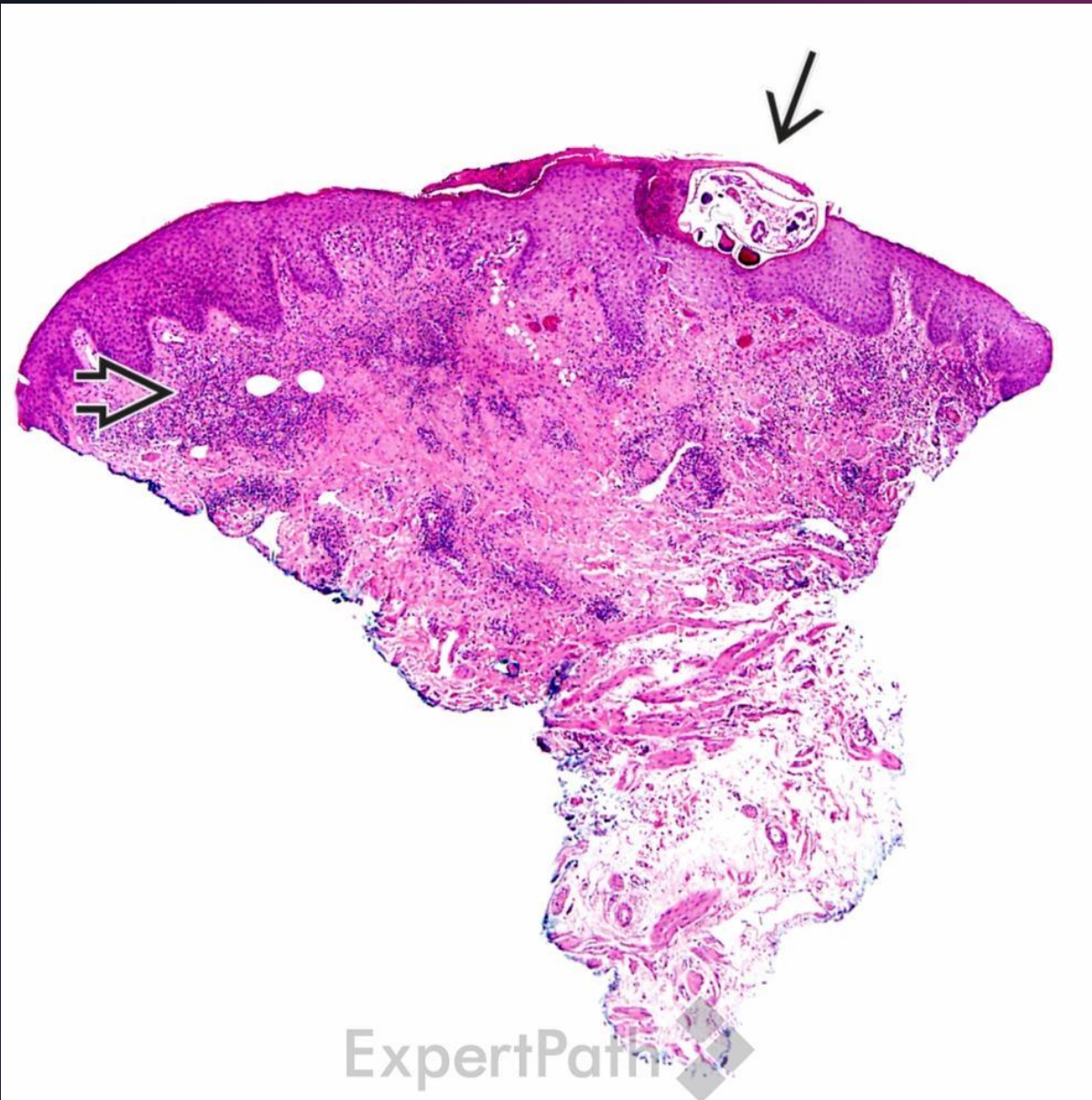
How does scabies infestation present?

- Scabies presented in this patient as multiple excoriated papules (black solid arrow) and burrows (black open arrow) on the hand.

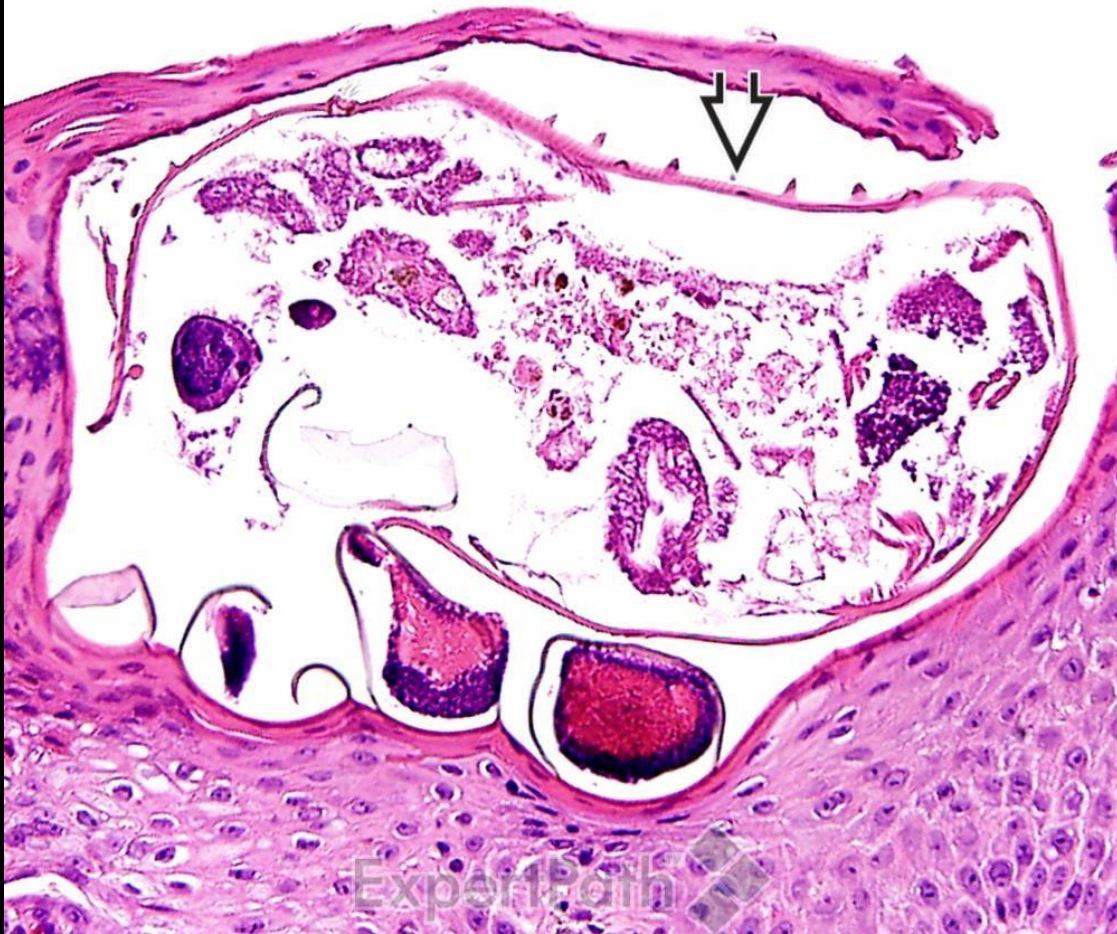


What is the histopathology of scabies infestation?

- Low-magnification view of a punch biopsy shows an intracorneal burrow containing a *Sarcoptes mite* (black solid arrow) and florid dermatitis (black open arrow), which is frequently associated with an infestation.

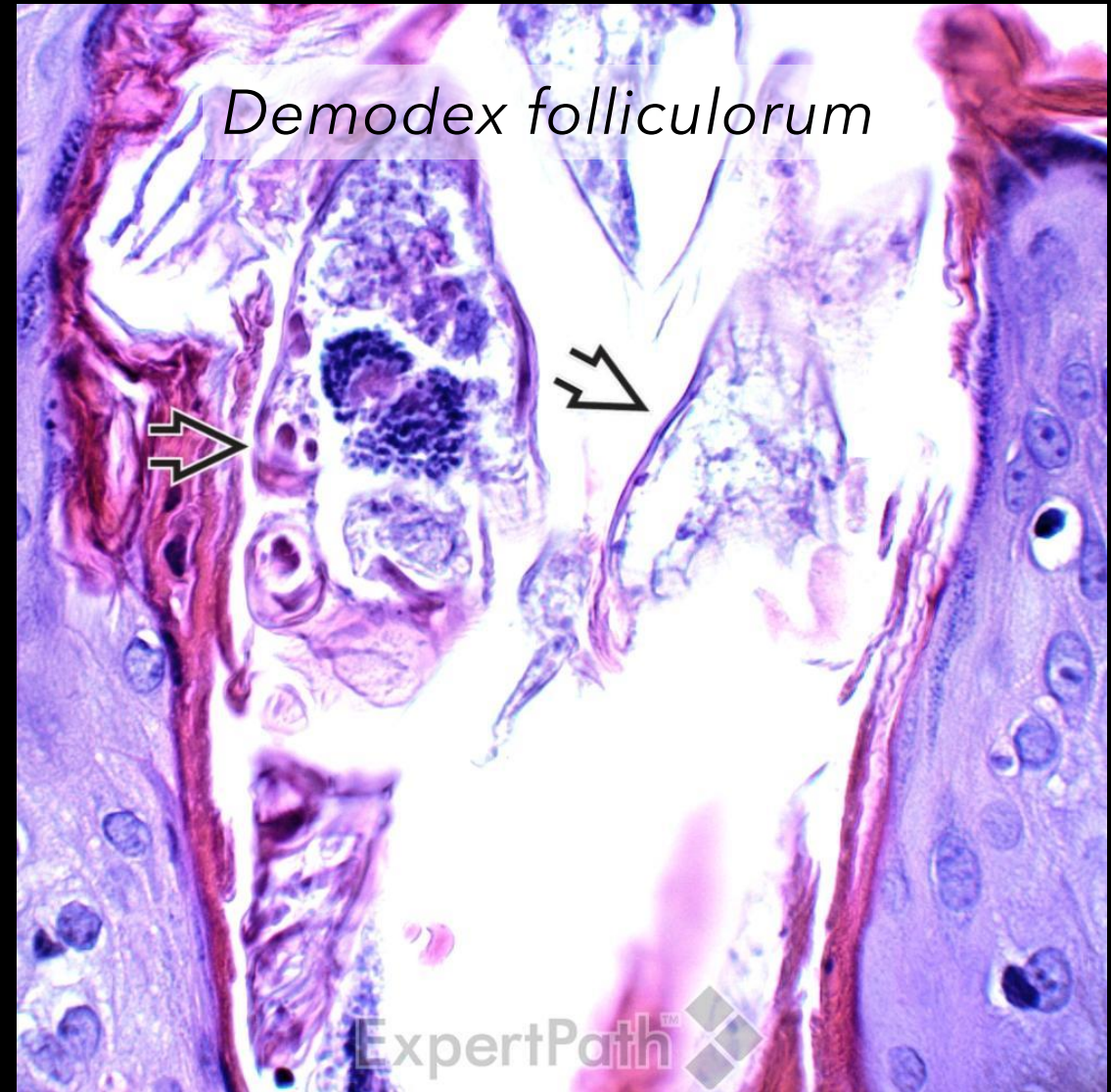


Scabies



High-power magnification shows an intracorneal mite with a chitinous exoskeleton bearing multiple dorsal spines (black open arrow). Eggs are ovoid to curvilinear in shape.

Demodex folliculorum



Hair follicle is distended with many mites (black open arrow) in this biopsy of facial skin, consistent with *Demodex* spp.