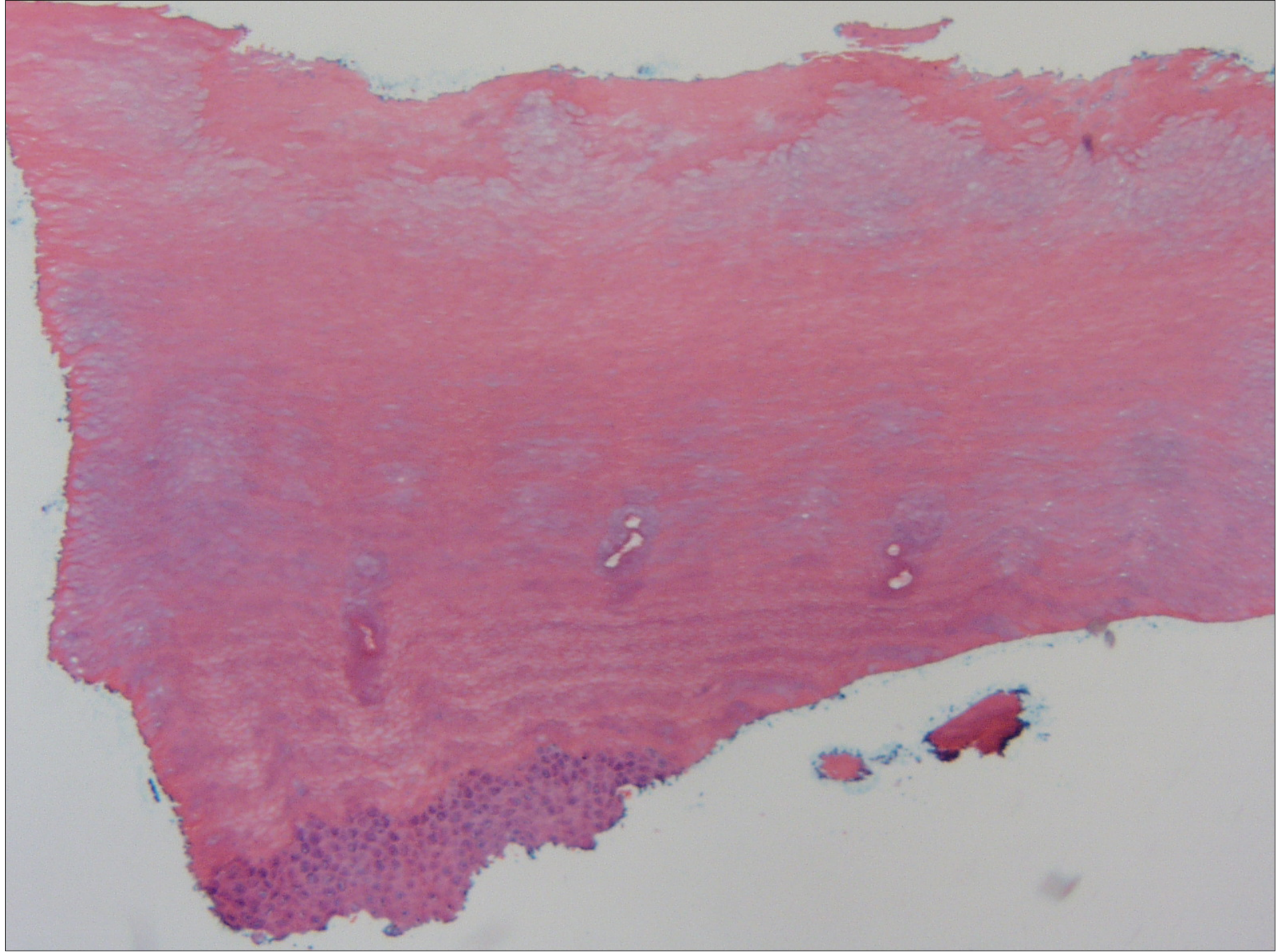
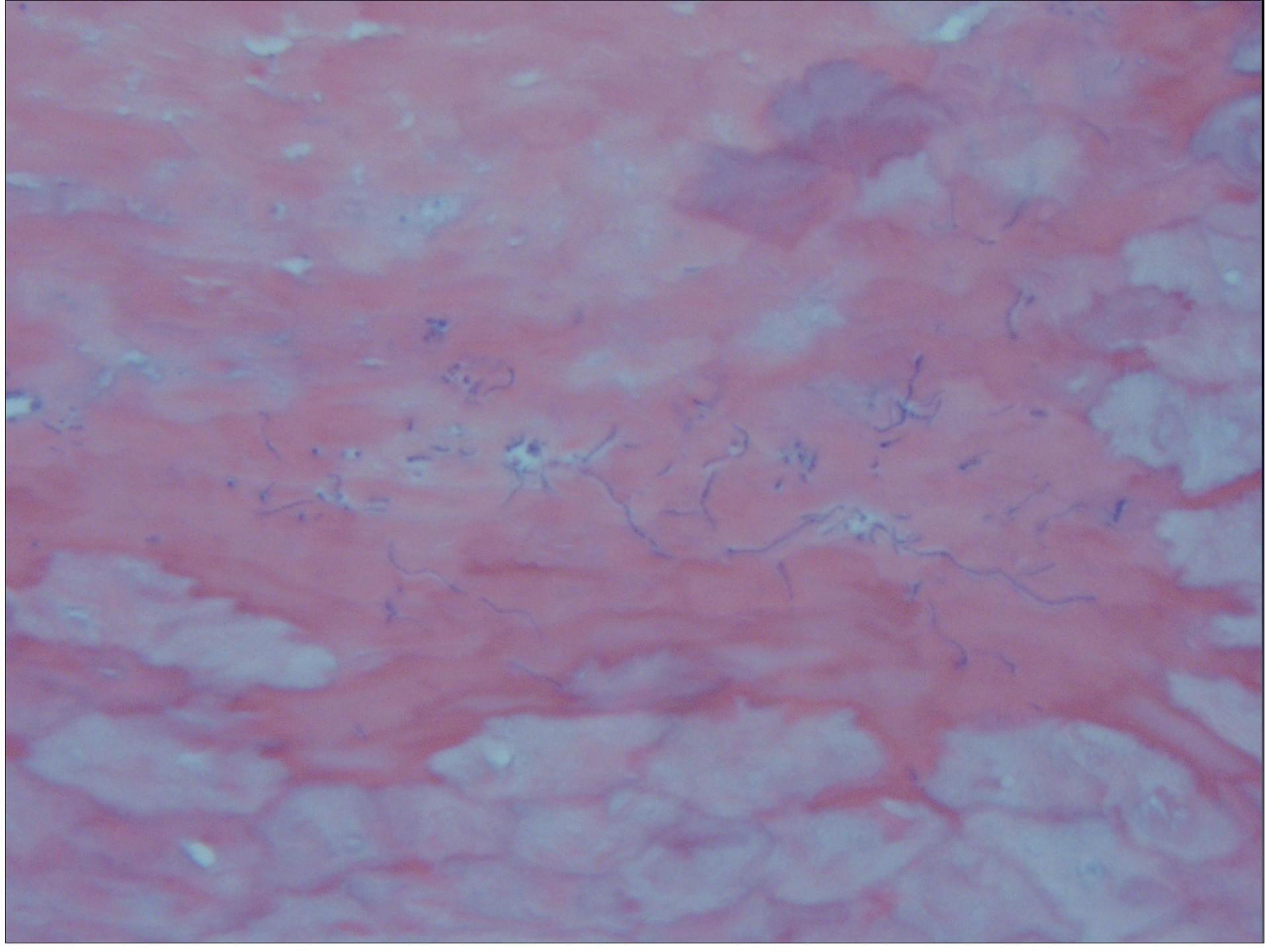


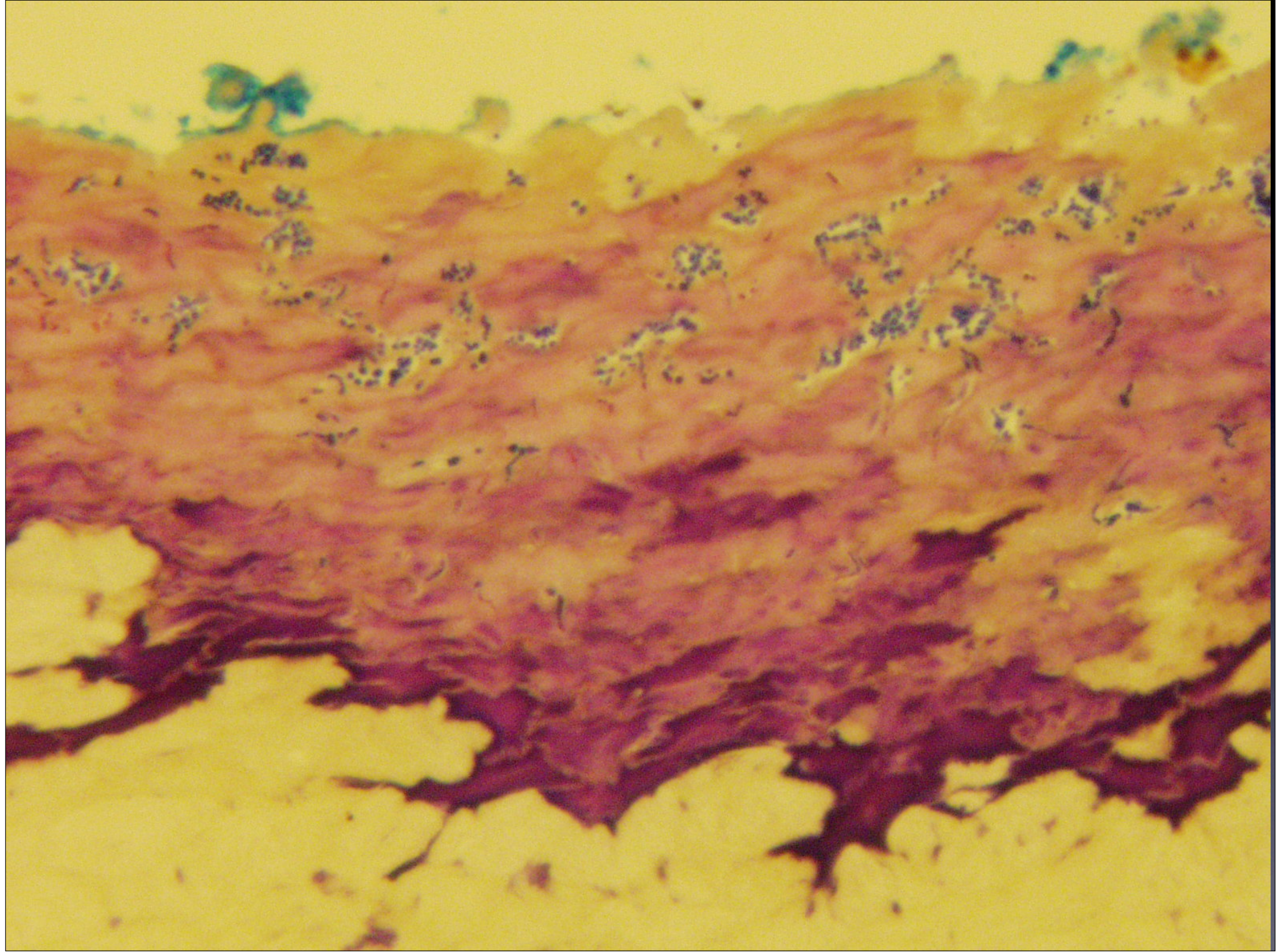
Invisible Dermatoses

Paul K. Shitabata, M.D.
Dermatopathology Institute









Pitted Keratolysis

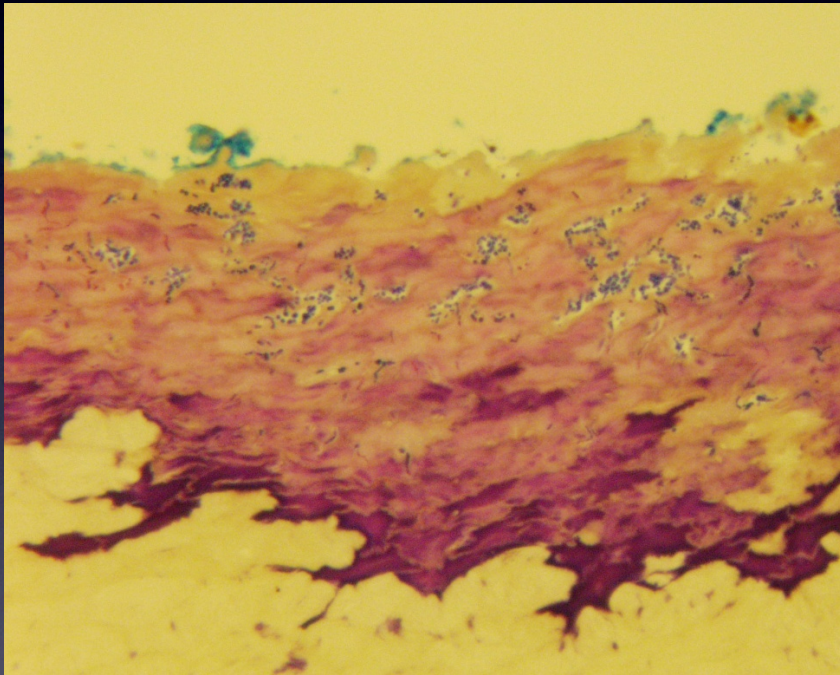


Clinical



- Discrete pits or craterlike lesions on the plantar surfaces
- Range from 1 to 7 mm in diameter and are similar in depth
- Some pits have a brownish color that may give the feet a dirty appearance
- Most cases are asymptomatic
- Hyperhidrosis is often noted on the feet
- Typically malodorous

Histopathology

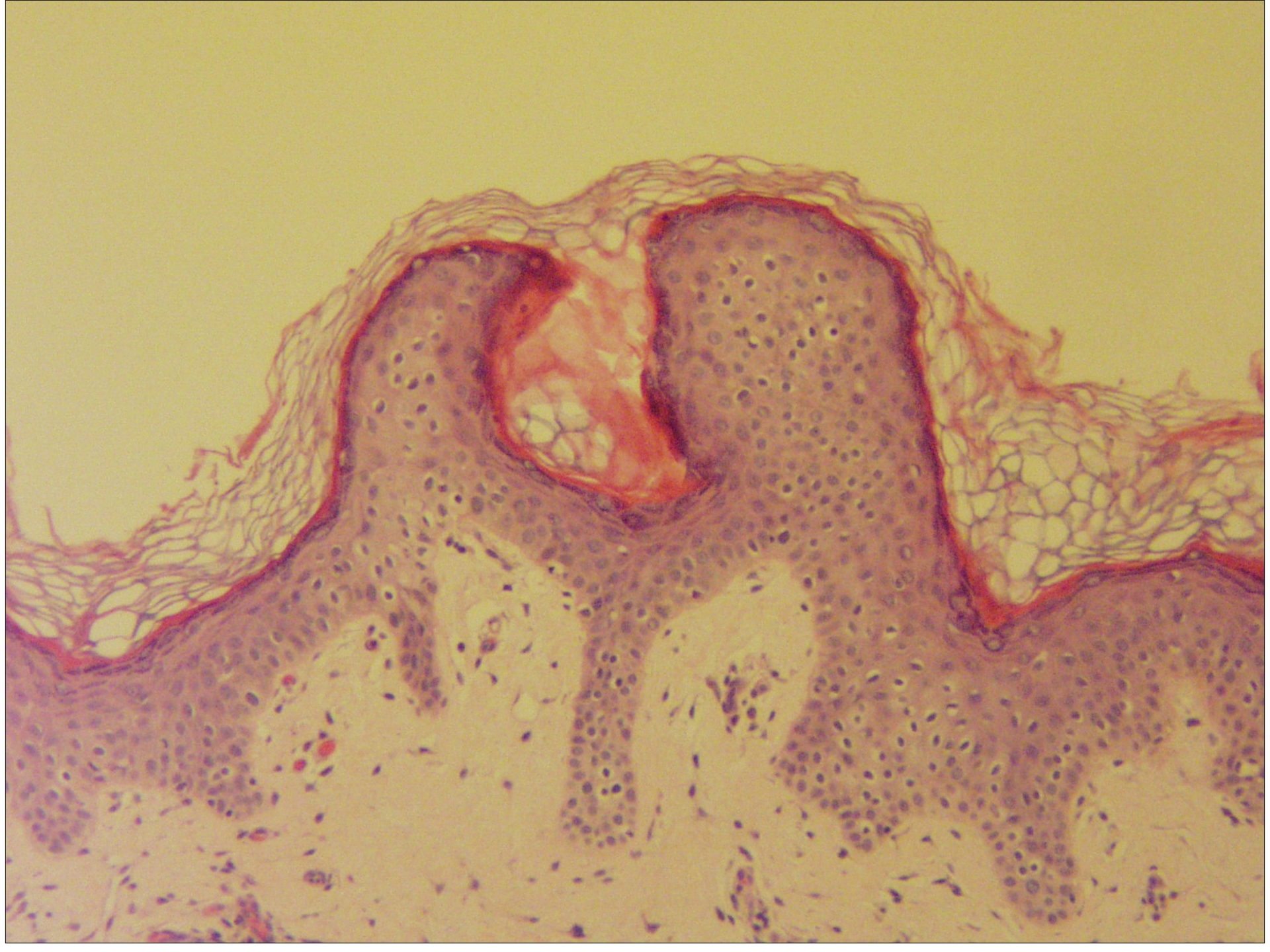


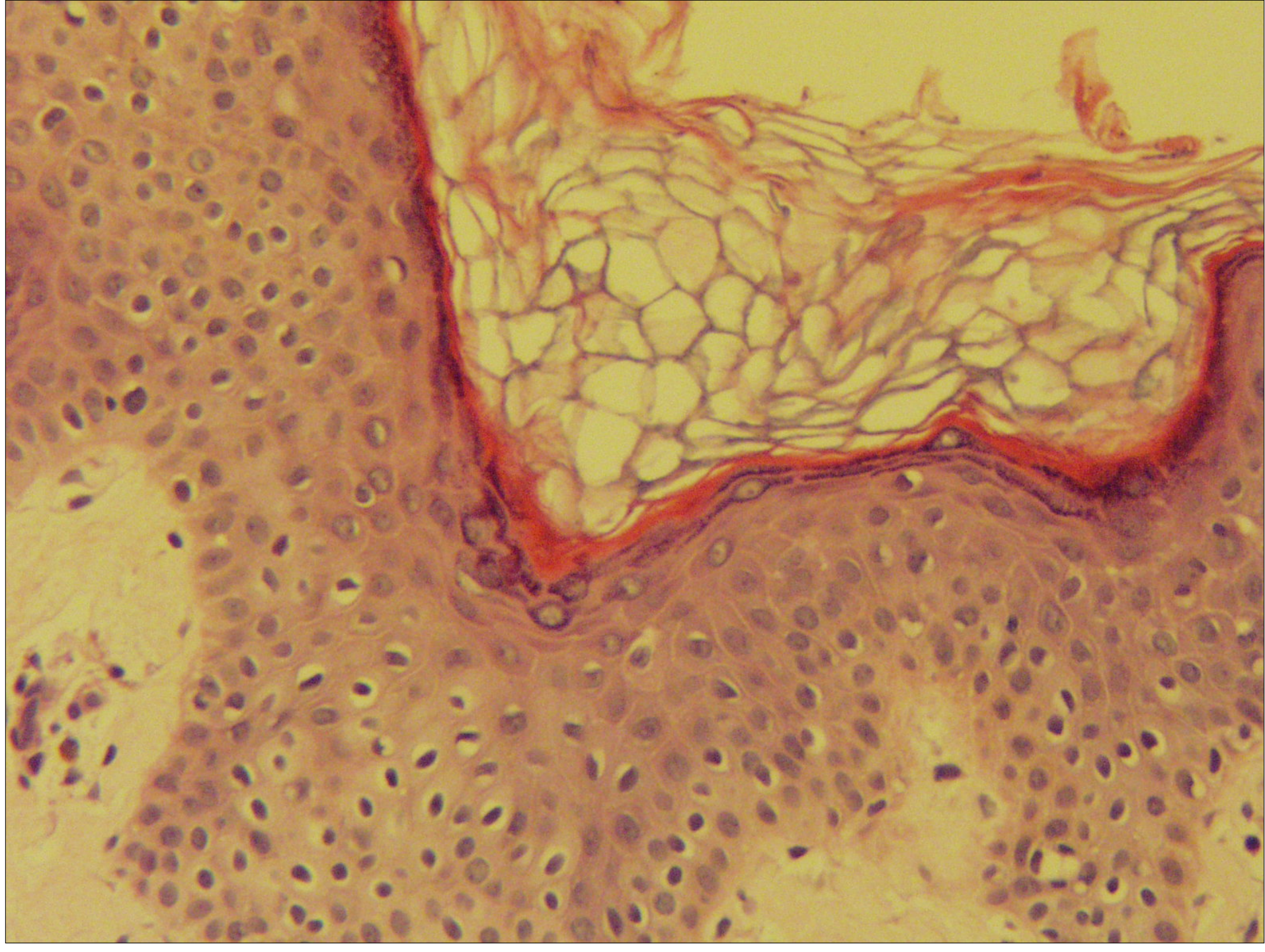
- *Corynebacterium* genus Gram-positive, pleomorphic, aerobic rods
- Bacteria can hydrolyze keratin
- Hyperhydration greatly enhances growth of corynebacteria on the feet
 - Pitted keratolysis developed in 53% of 387 military volunteers whose feet remained wet for 3 or more days

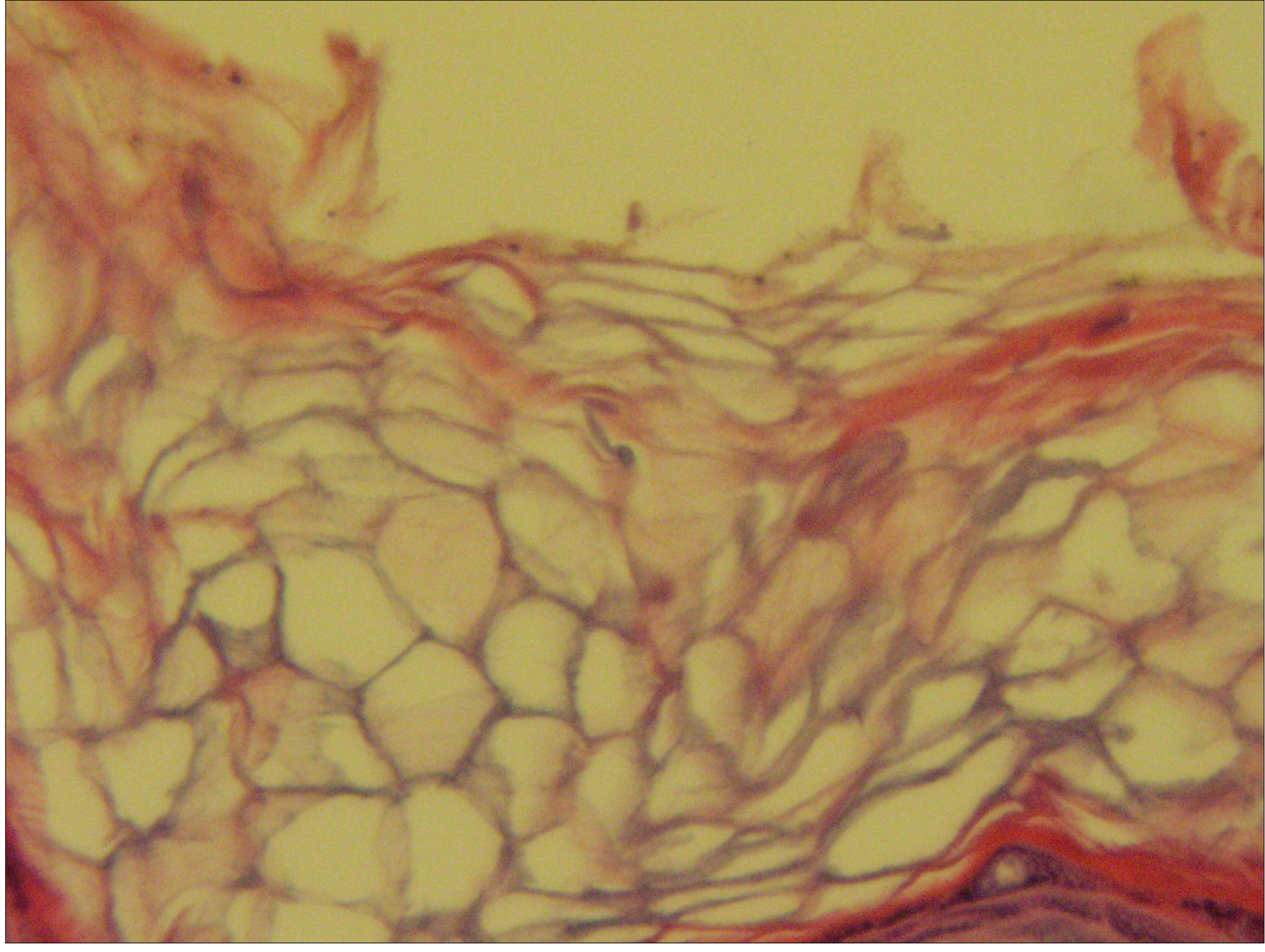
Laboratory

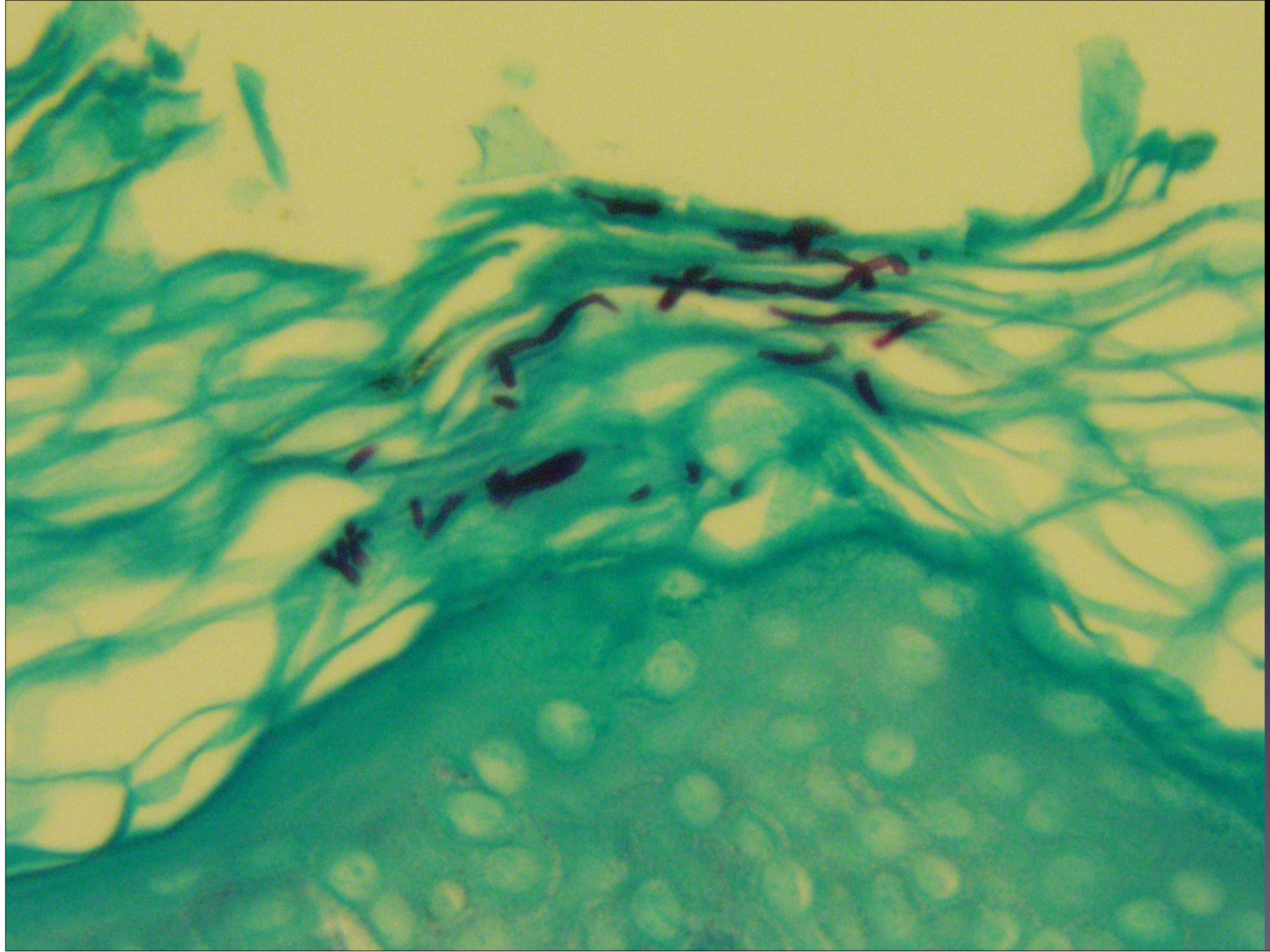


- Wood's Lamp shows characteristic coral red fluorescence
- Fluorescent examination of the patient's intertriginous areas may be helpful
 - Other corynebacteria-induced infections such as erythrasma and trichomycosis axillaris commonly coexist









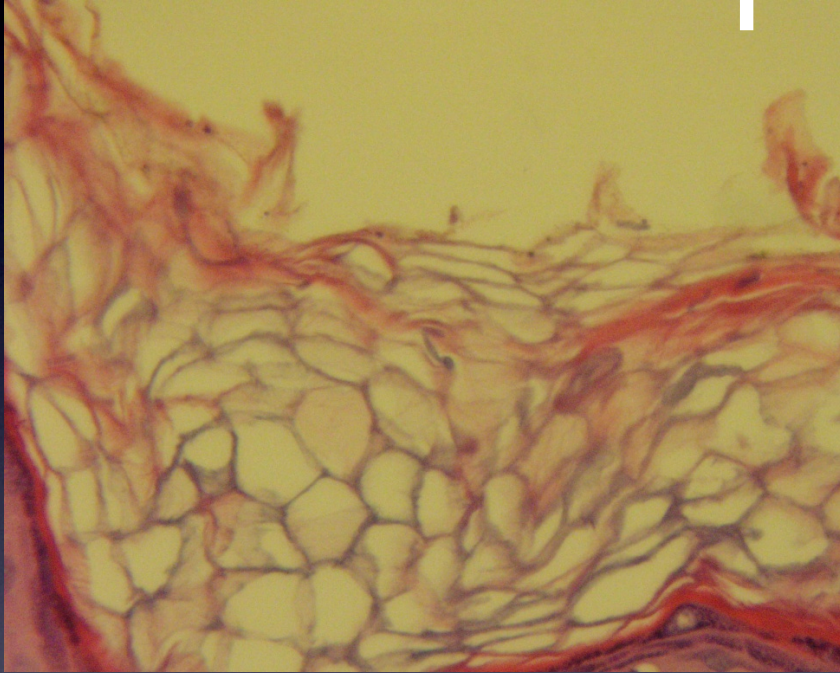
Tinea Versicolor

Tinea Versicolor

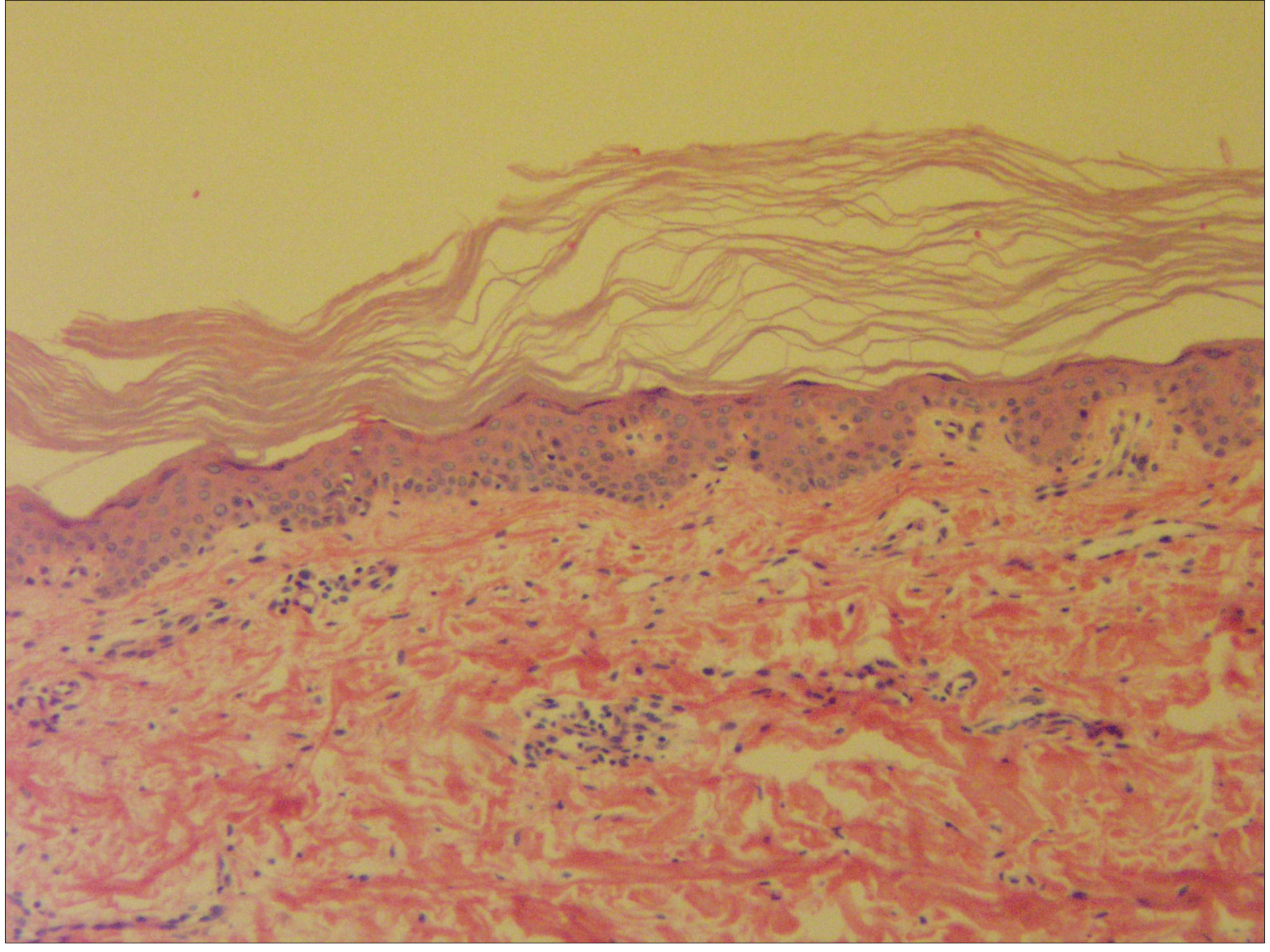


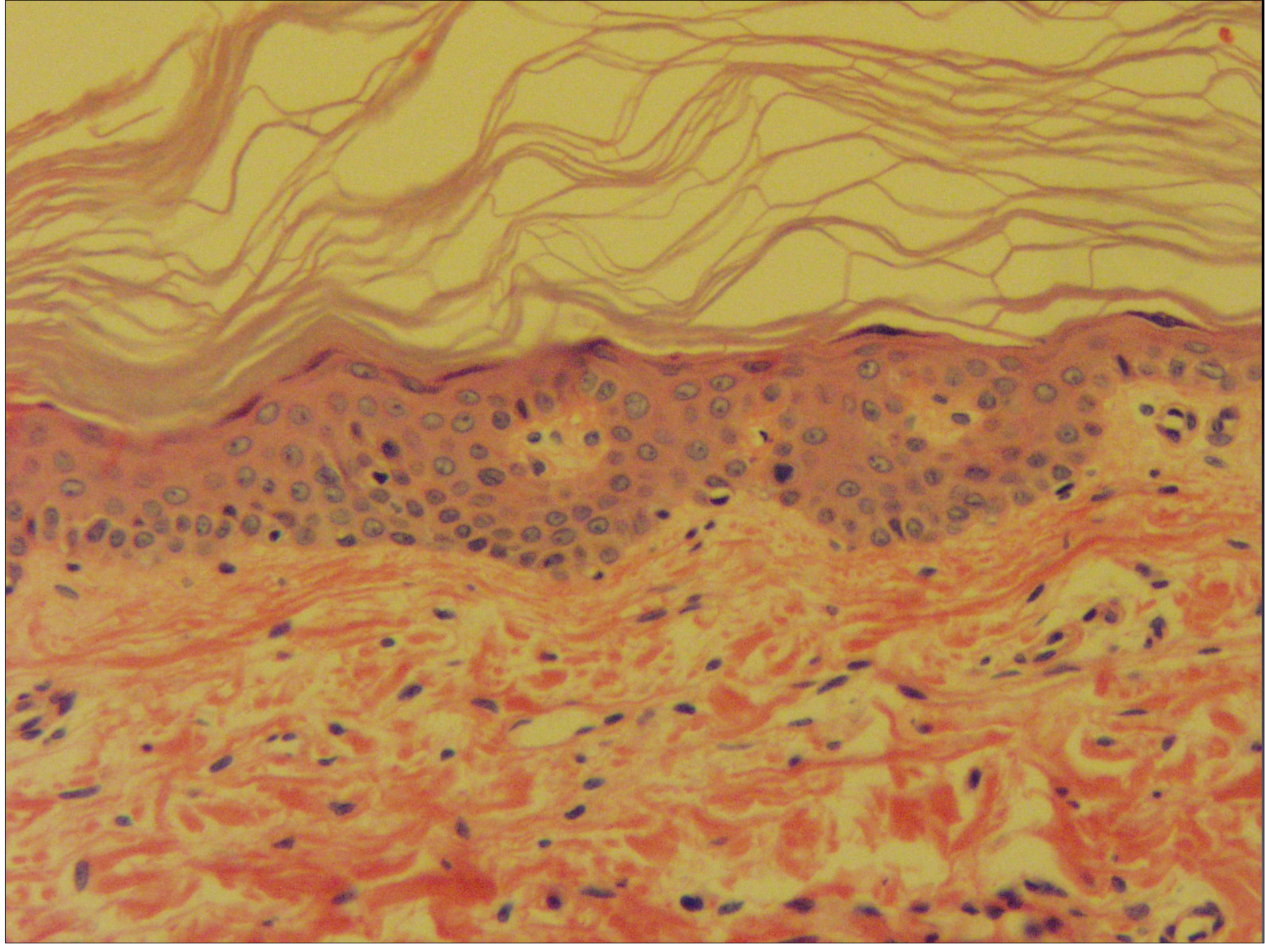
- Small and scaly white-to-pink-to-tan-to-dark spots
- Upper arms, chest and back, and may sometimes appear on the neck and face
- Prevents the skin from tanning normally

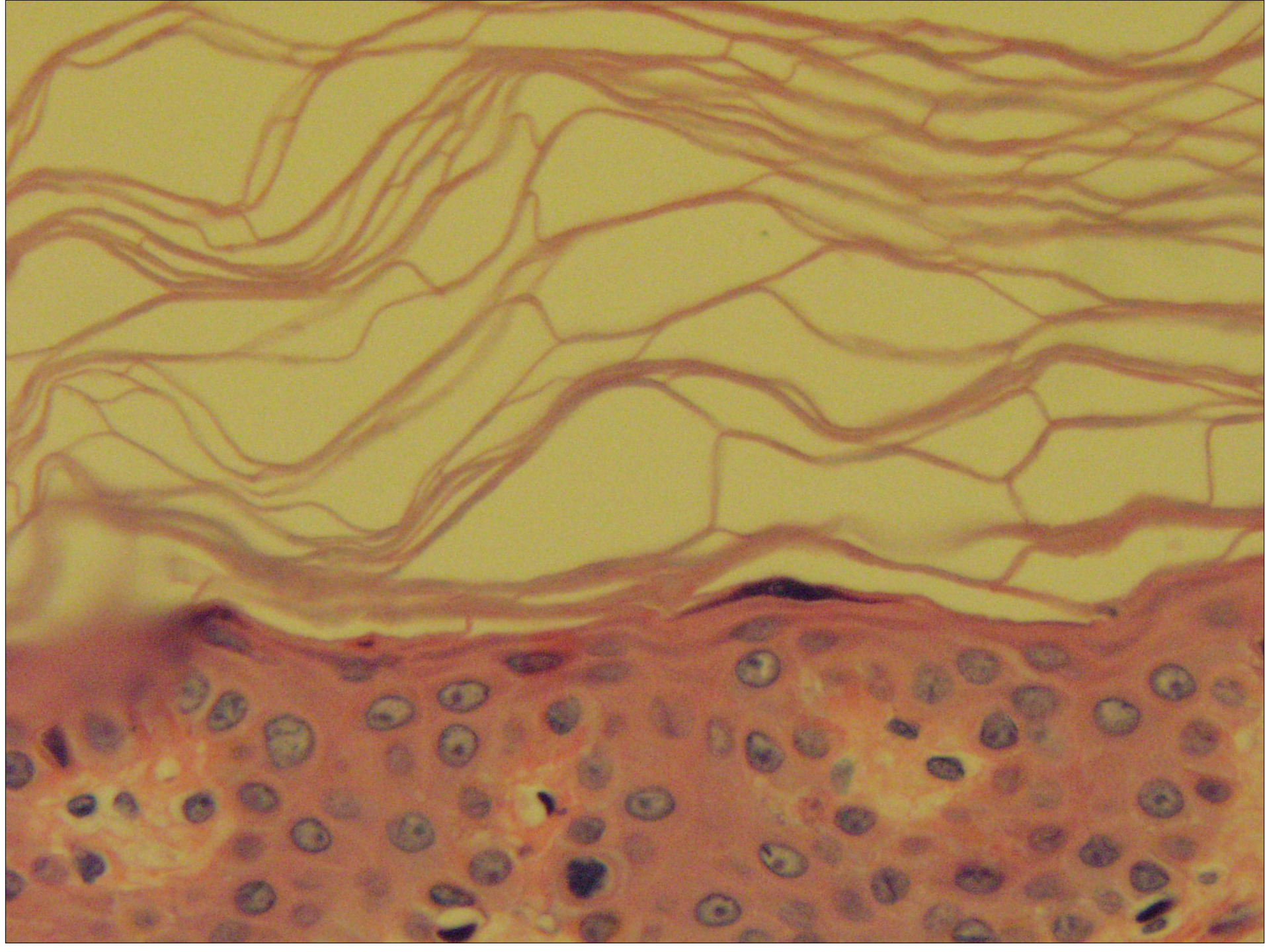
Histopathology



- May have minimal changes in stratum corneum
- Rarely sandwich sign
- PAS/GMS to confirm

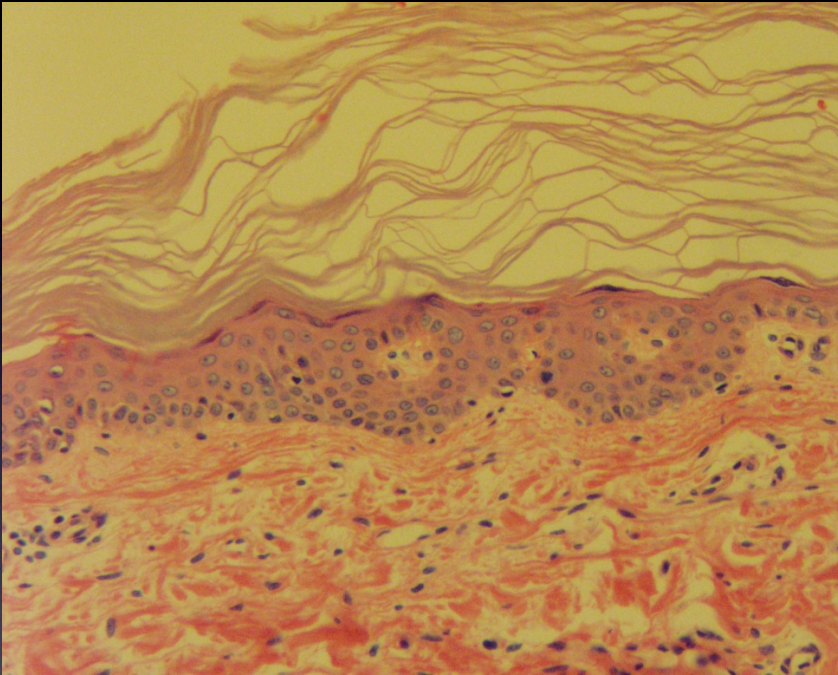






Ichthyosis

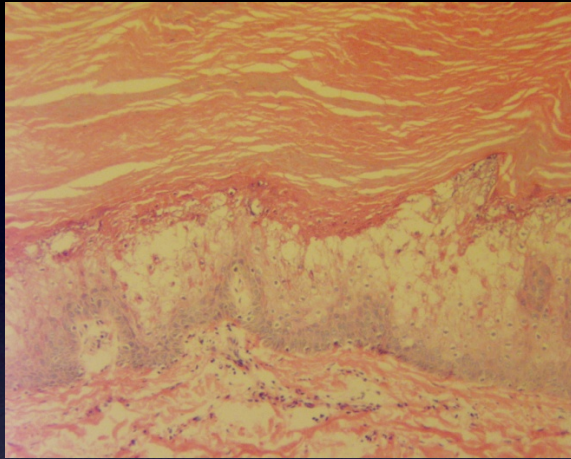
Histopathology



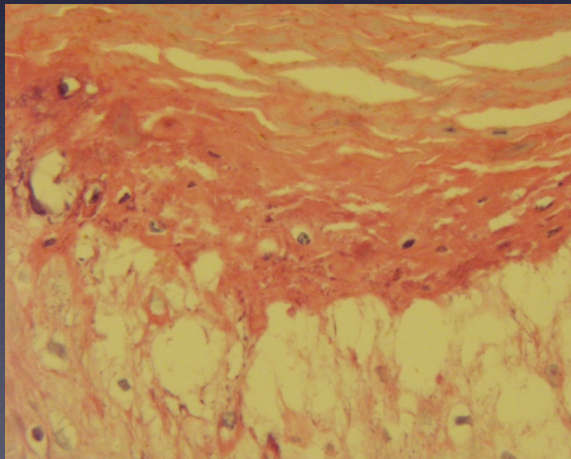
- Normal orthokeratosis
- May vary with compact hyperkeratosis
- Rarely melanin pigment incontinence
- Minimal inflammatory infiltrate

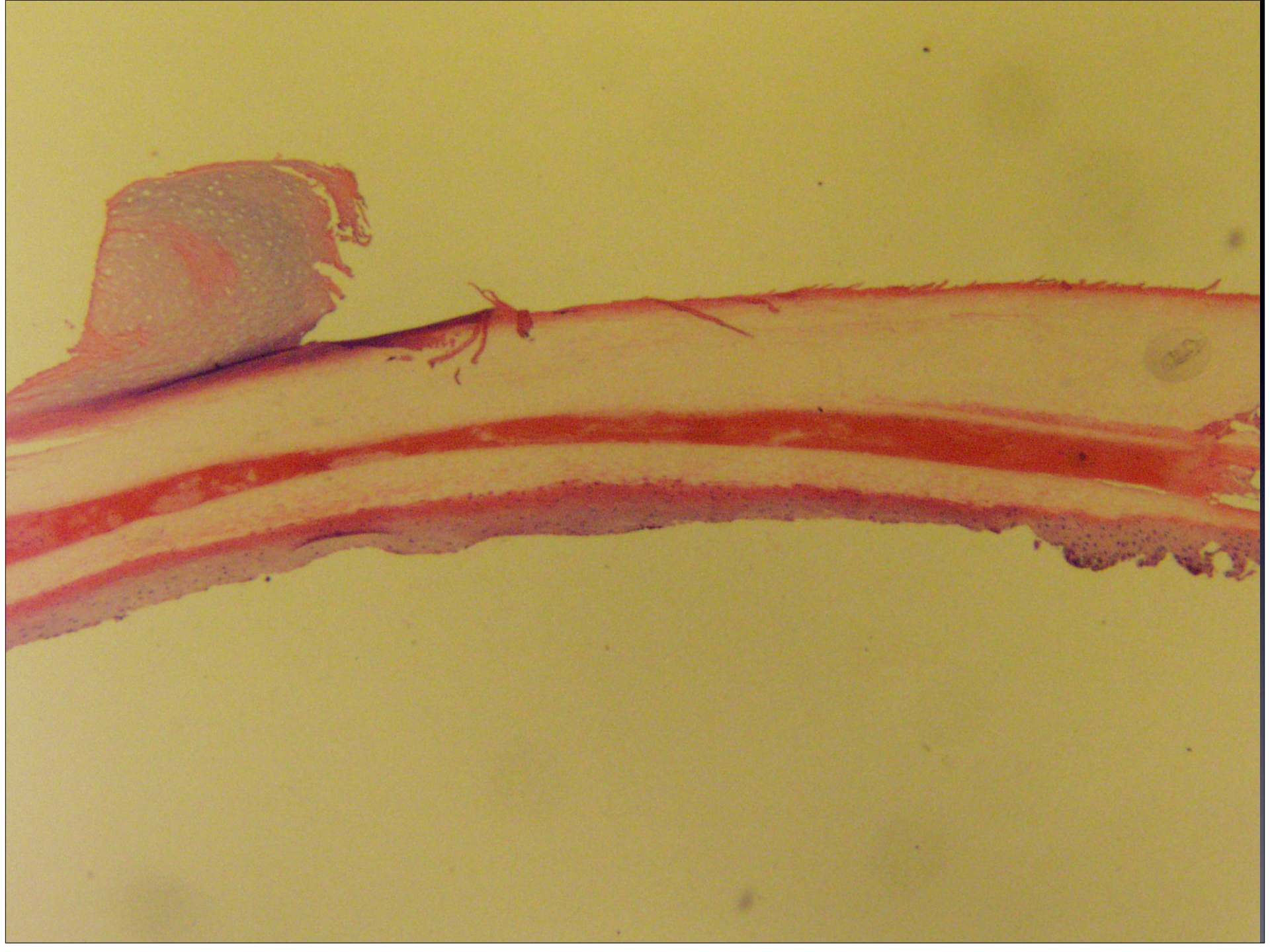


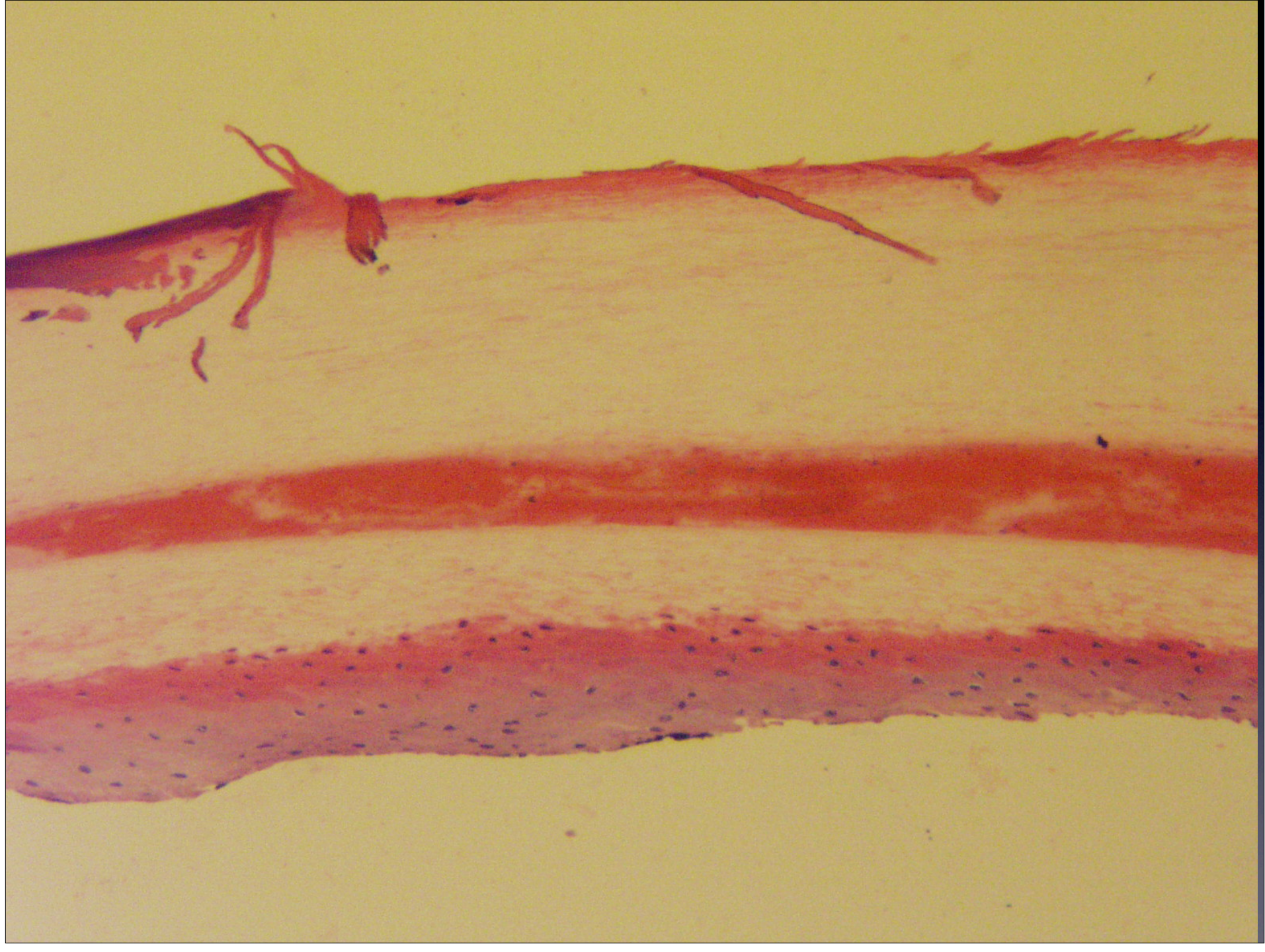
DDX

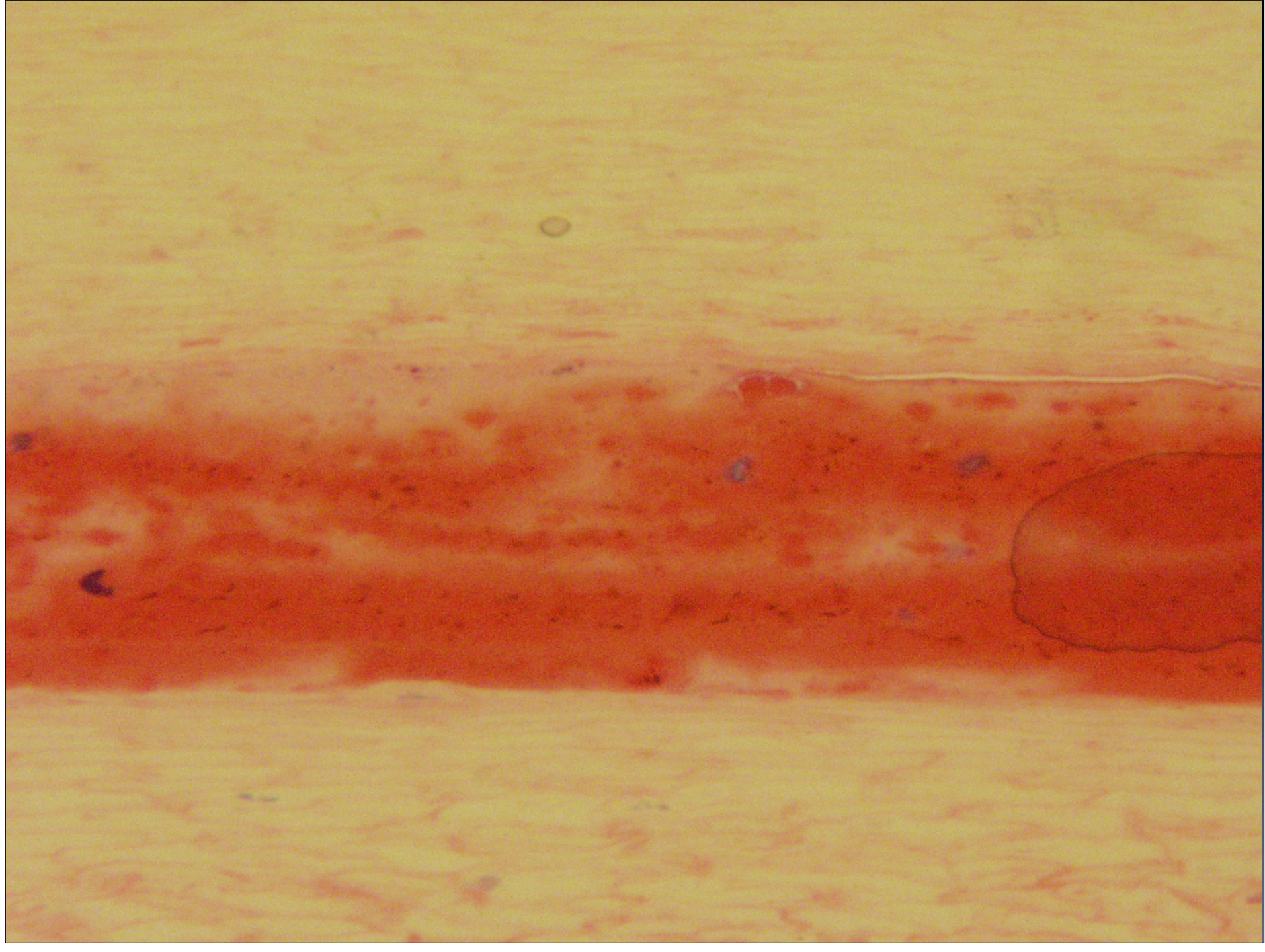


- Rule out congenital ichthyosiform erythroderma









Calcaneal Petechiae

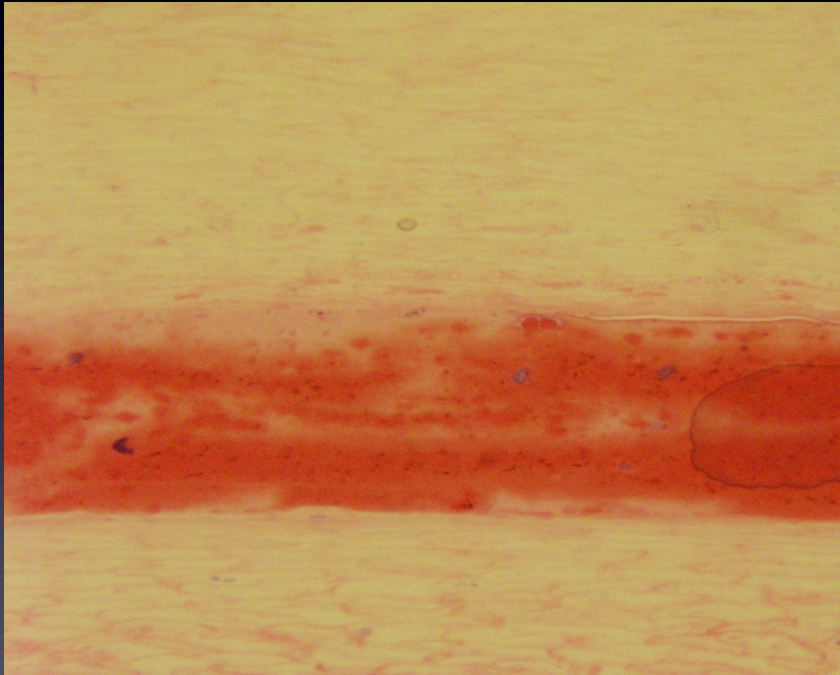


Clinical

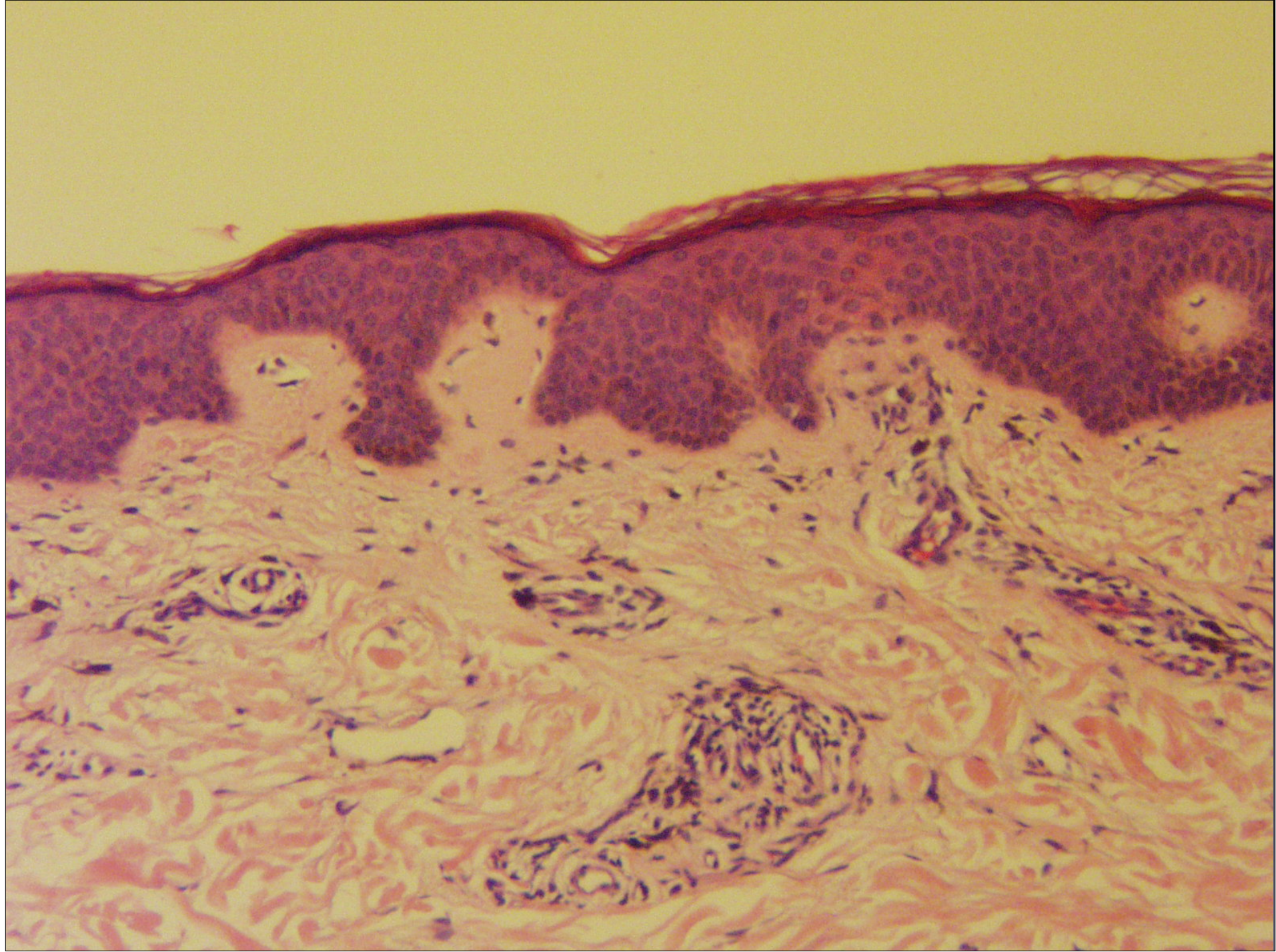


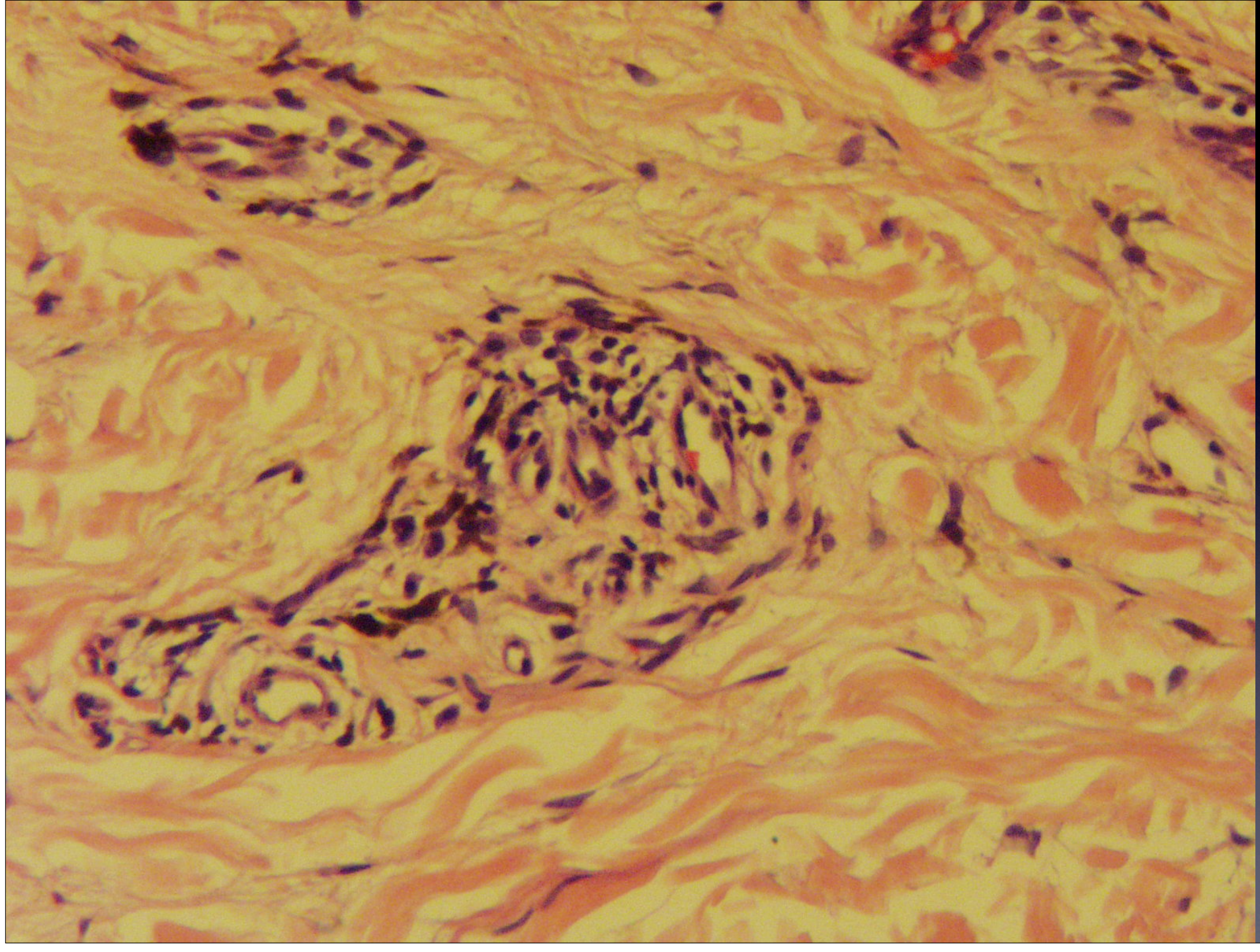
- Self-limited, asymptomatic, trauma-induced darkening of the posterior or posterolateral aspect of the heel that occurs primarily in young adult athletes
- Clinically insignificant
- Similar lesion termed black palm (tache noir) has been described on the thenar eminence in weightlifters, gymnasts, golfers, tennis players, and mountain climbers

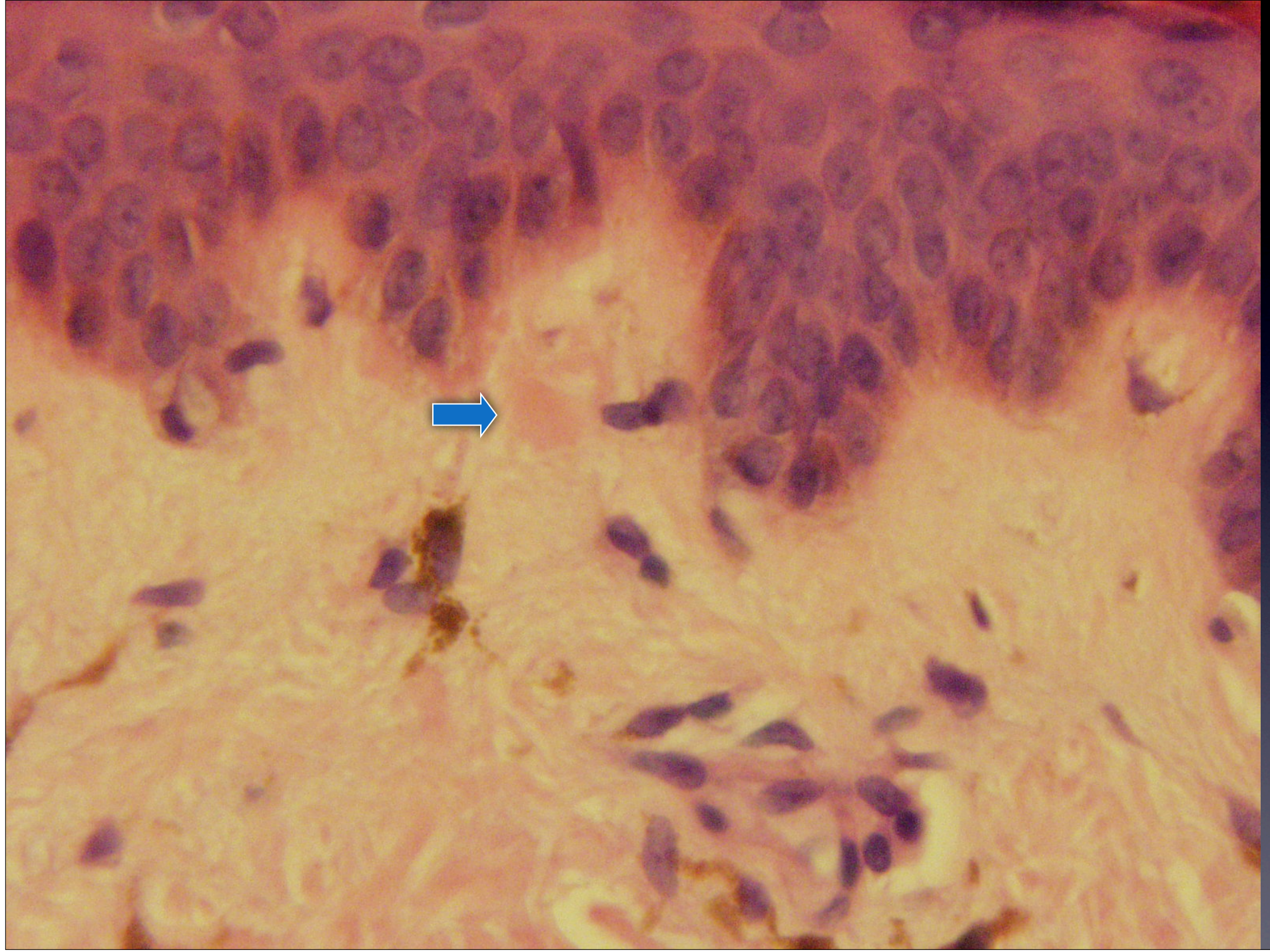
Histopathology

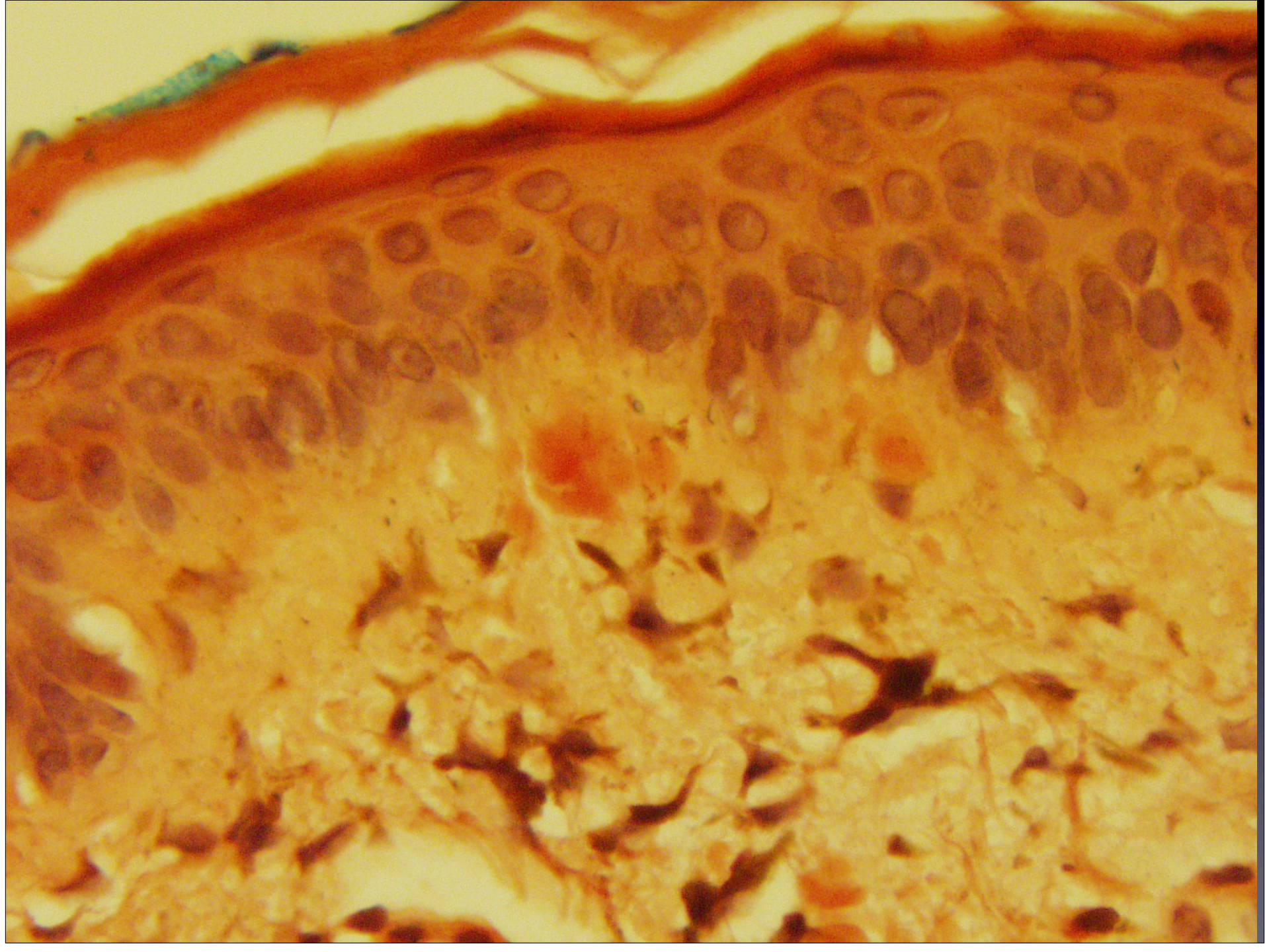


- Intracorneal collection of rbc in various stages of degeneration
- May only have hemosiderin pigment
- Usually linear arrangement
- Rule out concomitant melanocytic neoplasm, tinea









Macular Amyloidosis

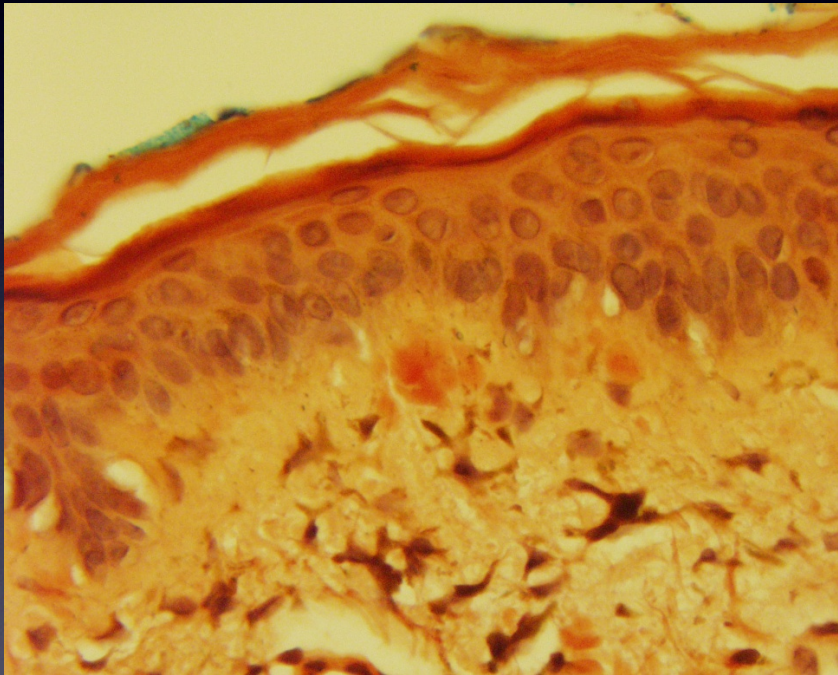
Clinical



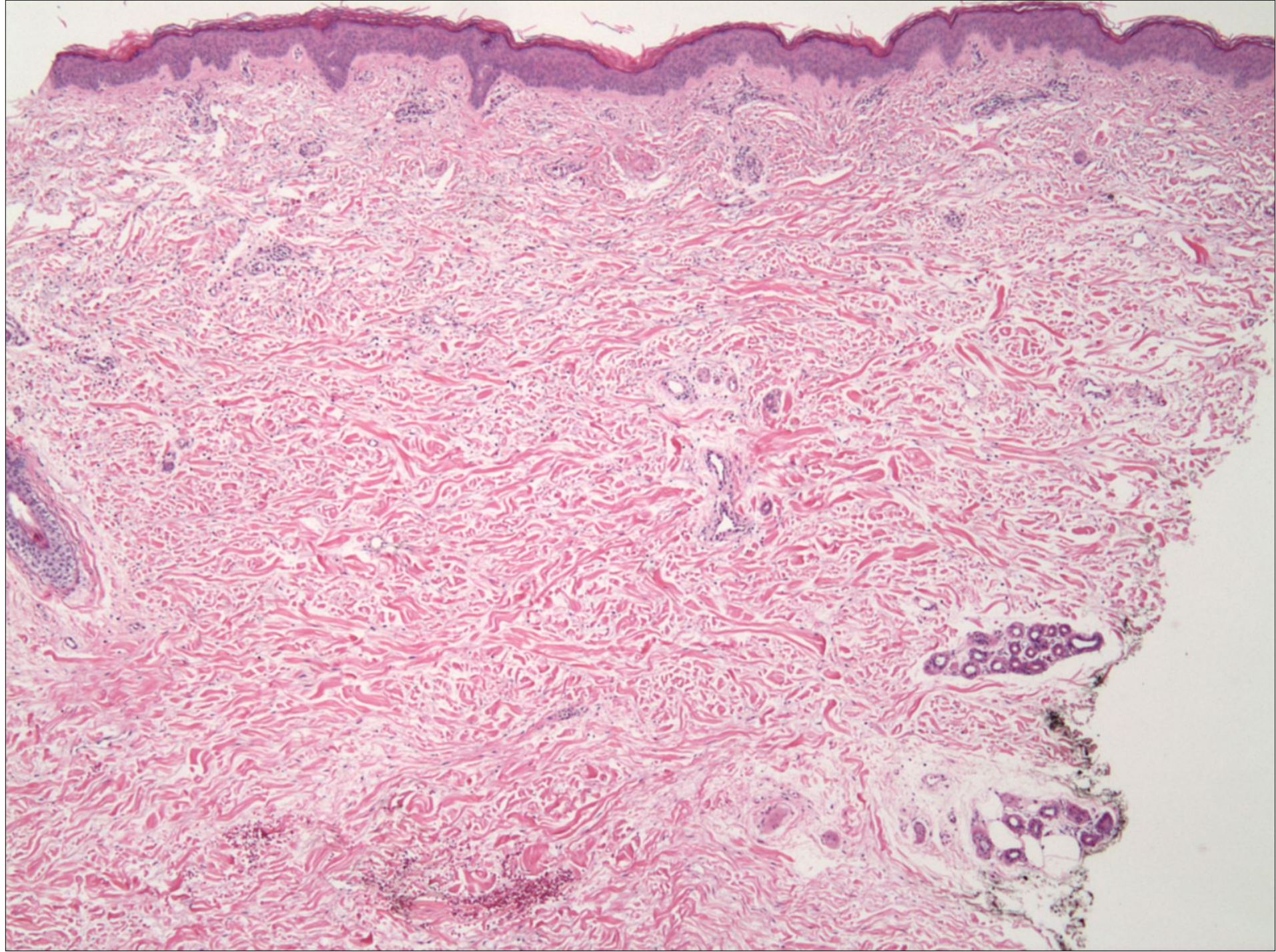
- Pruritic eruption that is variable in severity often hyperpigmented
 - Small dusky-brown or grayish pigmented macules distributed symmetrically over the upper back and, in some patients, the arms
 - About 50% have reticulated or rippled pattern of pigmentation
- Nylon Towel Dermatitis

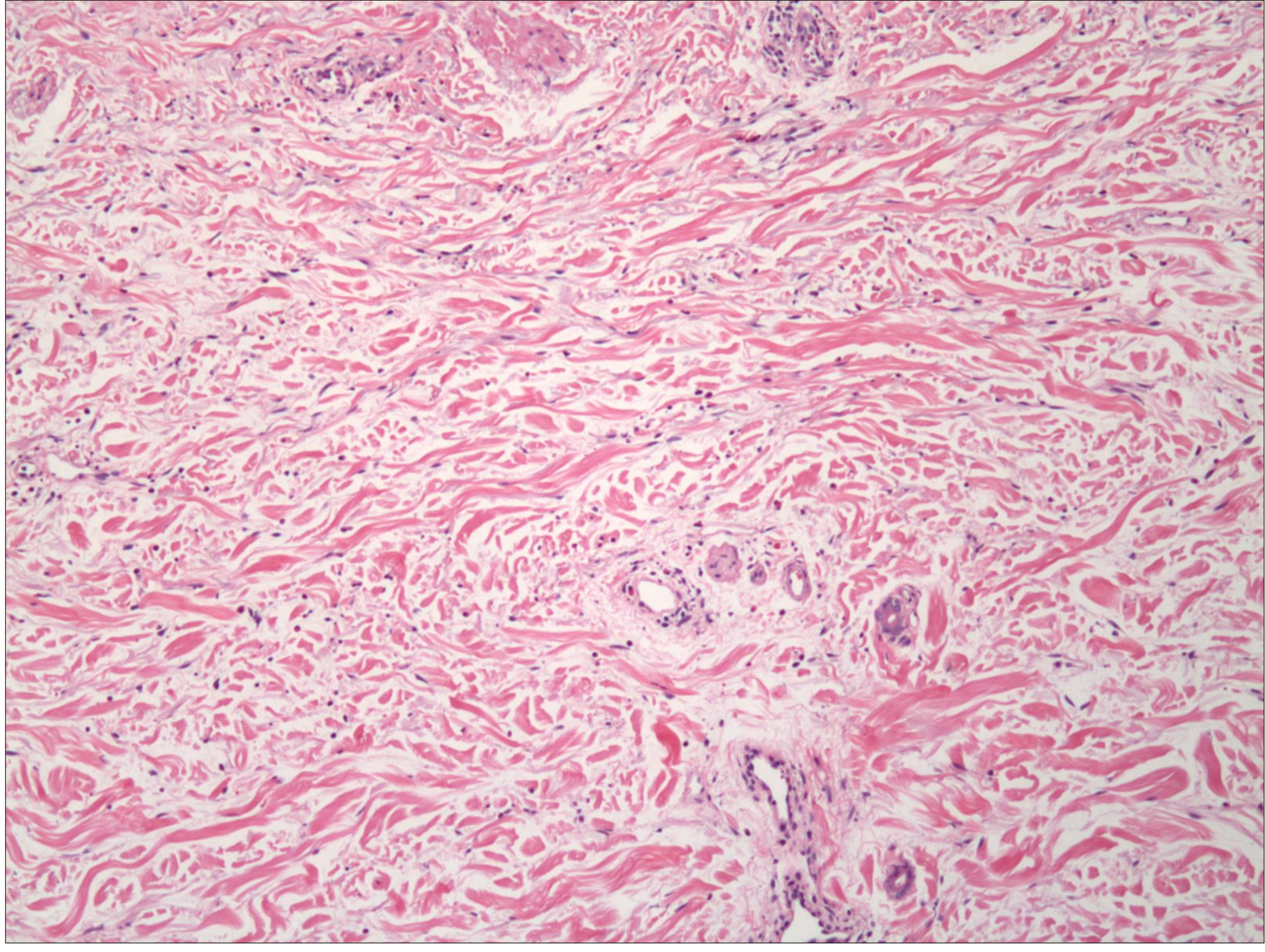


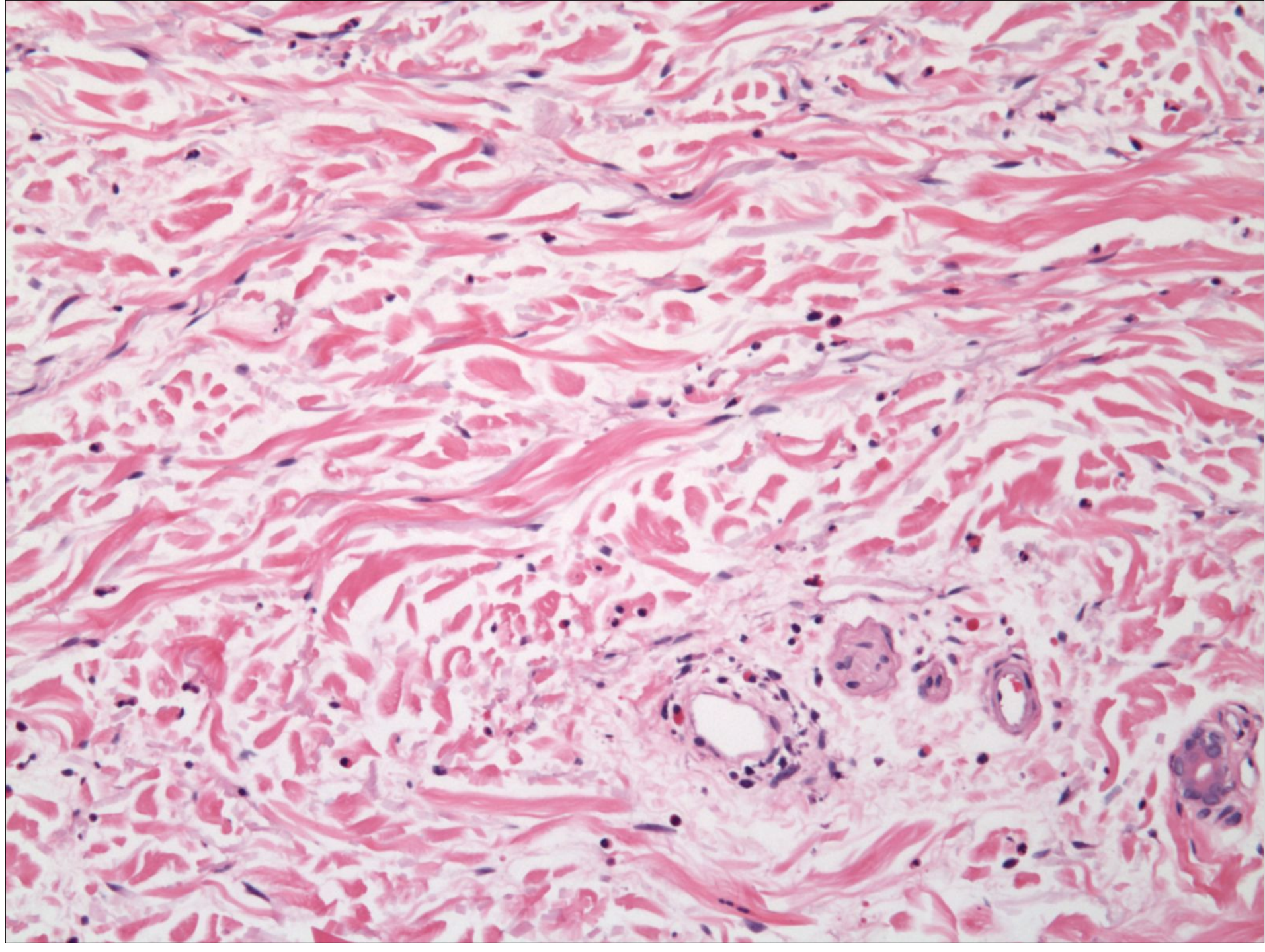
Histopathology

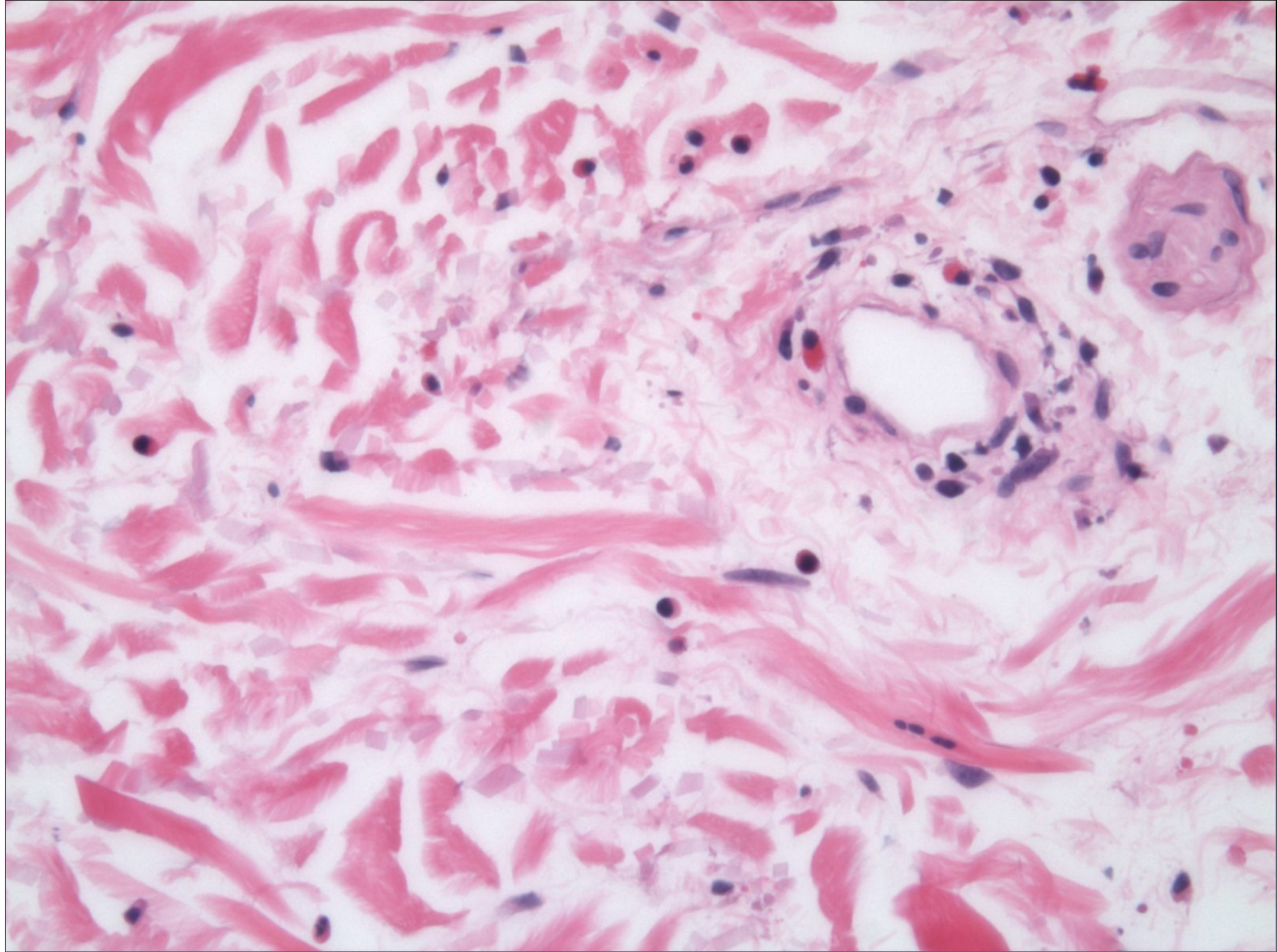


- Amyloid stains
 - Congo-red stain
 - Periodic acid-Schiff (PAS)
 - Methyl violet
 - Crystal violet
 - Cotton dyes (pagoda red, Sirius red)
 - Fluorescent dyes (thioflavin-T and Phorwhite BBU)
- Amyloid deposits are usually found within the dermal papillae
 - Globular, resembling colloid bodies, and may be in contact with basal cells at the DEJ









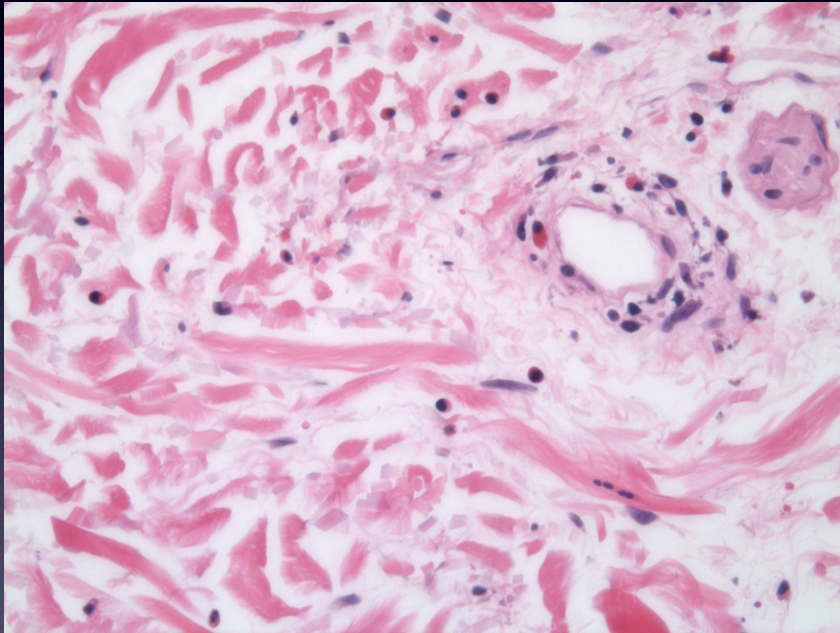
Urticaria

Clinical

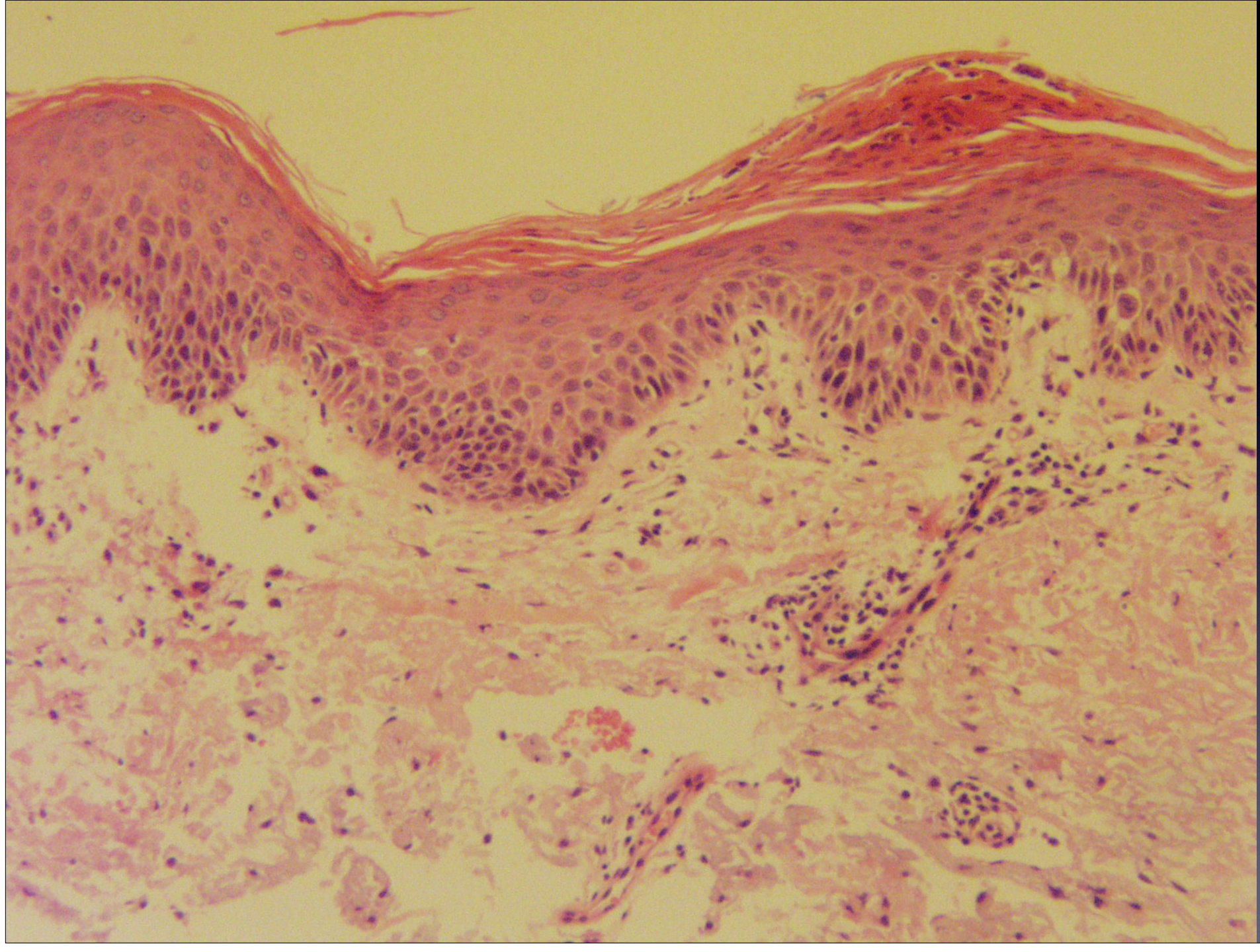


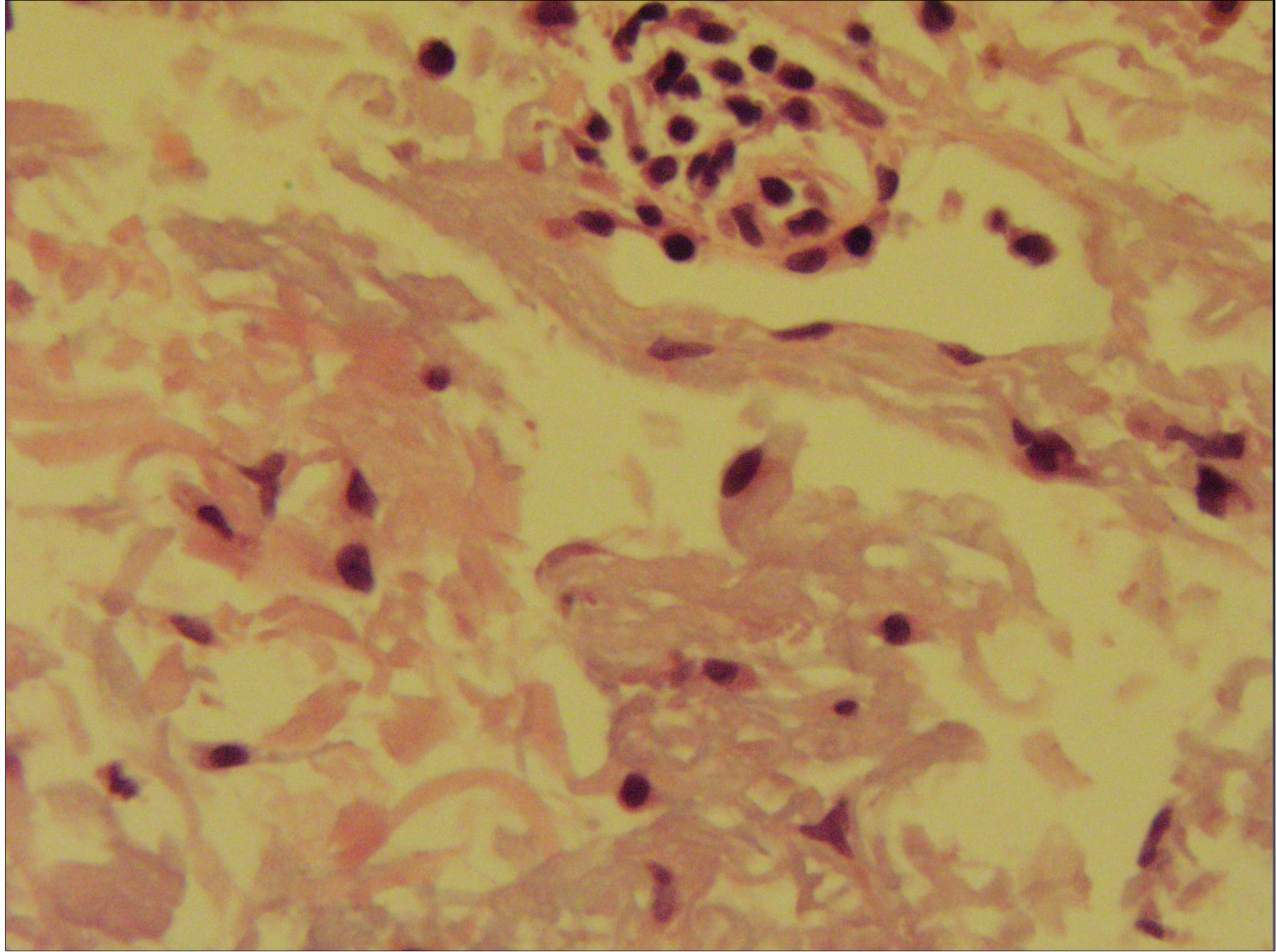
- Lasts a few hours before fading without a trace
 - New areas may develop as old areas fade
 - Vary in size from as small as a pencil eraser to as large as a dinner plate and may join together to form larger swellings
 - Usually are itchy, but may also burn or sting
- 10-20 percent of the population will have at least one episode in their lifetime
 - Usually disappear quickly in a few days to a few weeks. Occasionally, a person will continue to have hives for many years

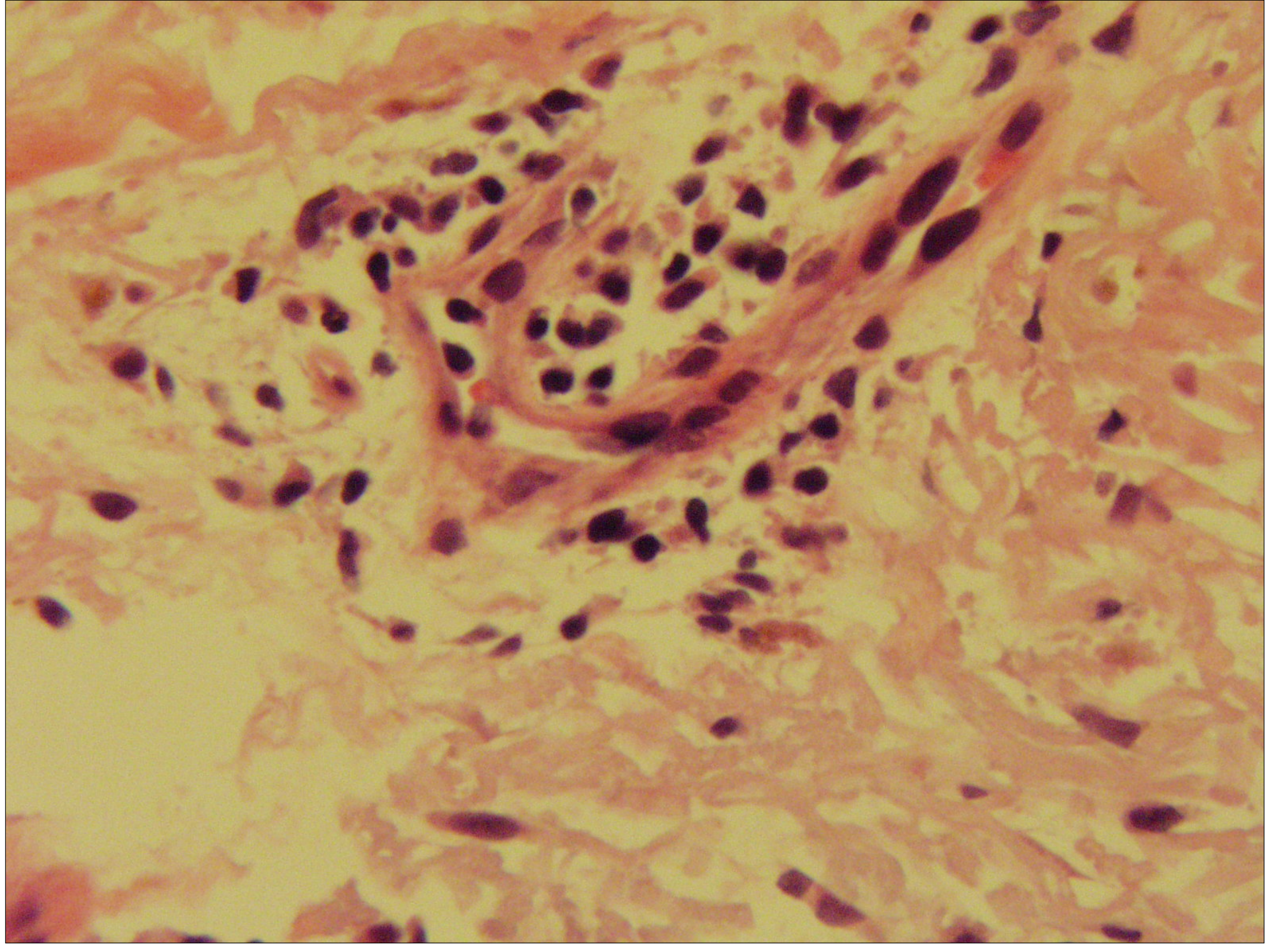
Histopathology

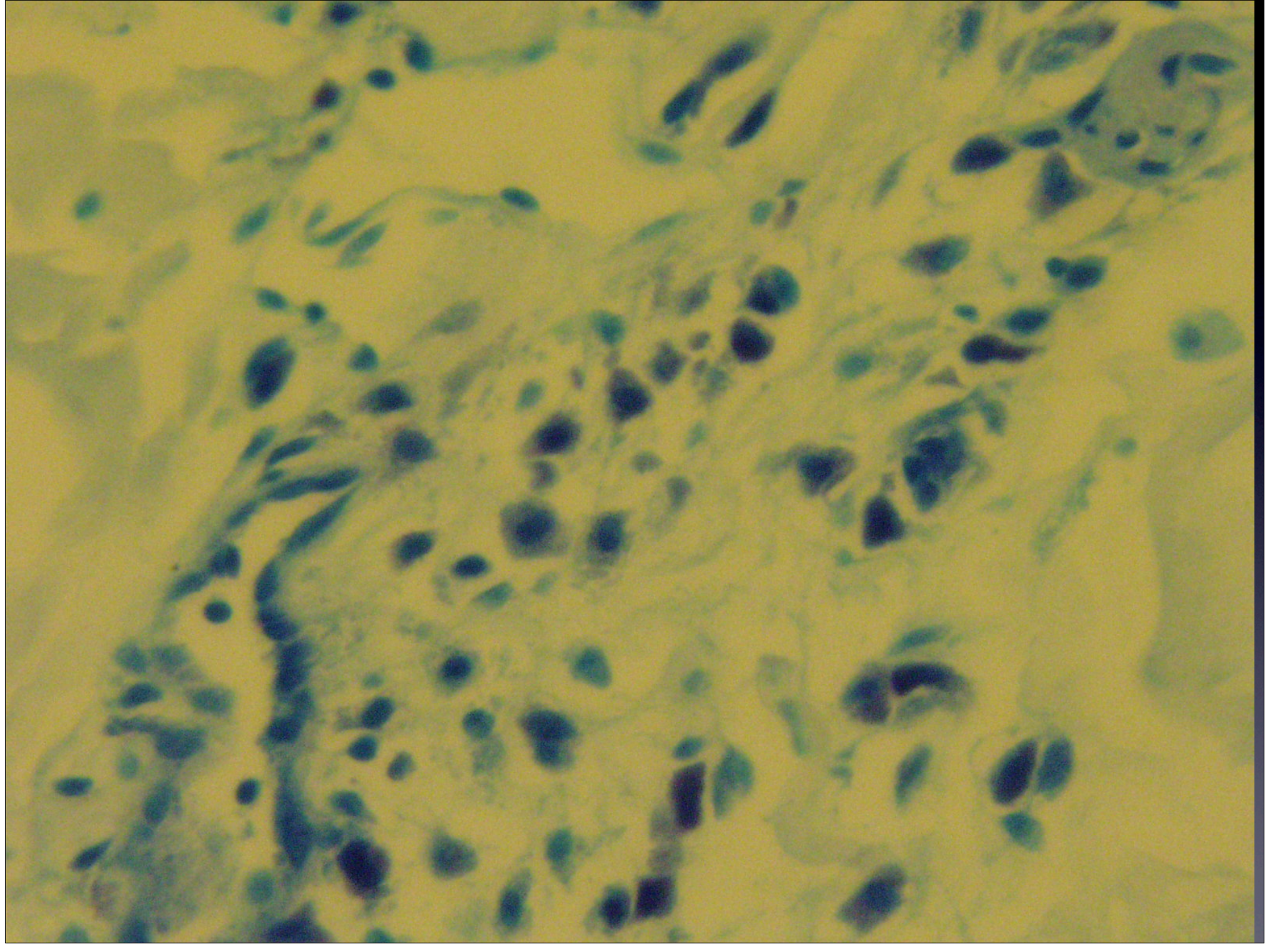


- Paucicellular
- Papillary dermal edema with scattered neutrophils and eosinophils
- Chronic or persistent lesions may have increased infiltrate
- Always rule out vasculitis









Brachioradial Pruritis



Clinical



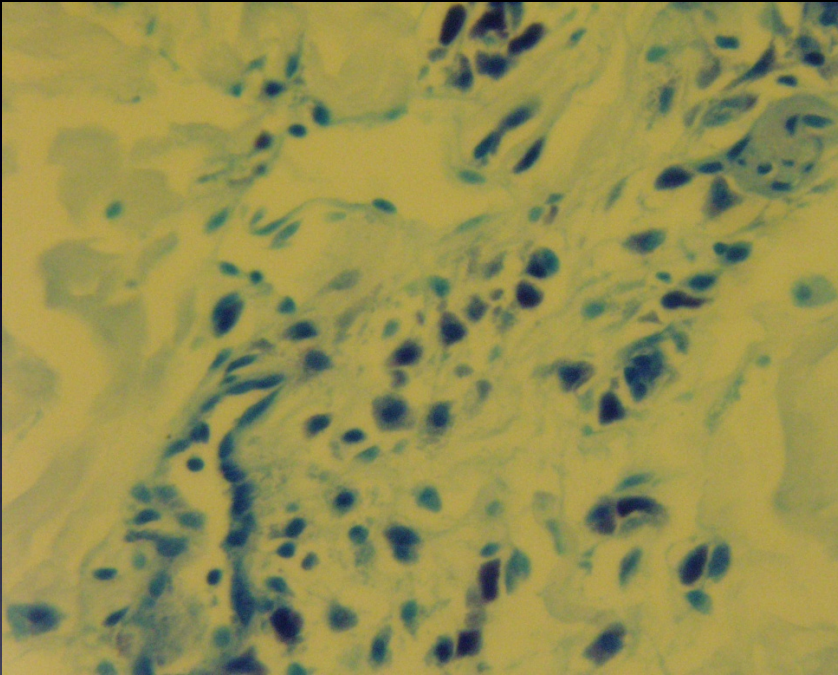
- Itch, burning and/or changed sensation arise in the areas of skin on either or both arms
 - Most commonly affected area is the mid-arm
 - Affected skin may appear entirely normal
 - Changes may arise from rubbing and scratching purpura and ecchymoses



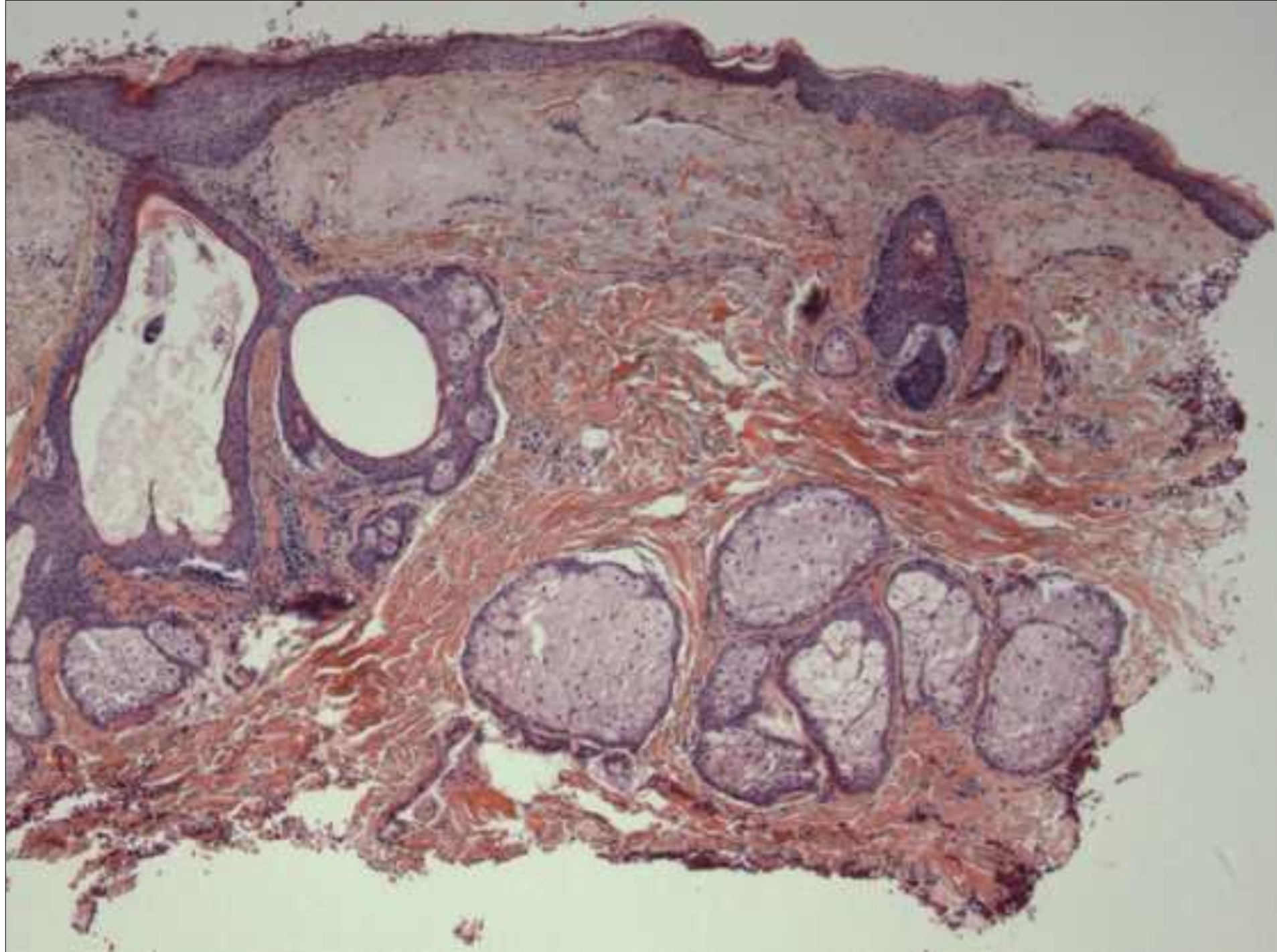
- 22 patients with BRP-II had cervical spine radiographs
 - The radiographs showed cervical spine disease that could be correlated with the location of pruritus in each of these 11 patients
- **CONCLUSIONS**
 - Patients with BRP may have underlying cervical spine pathology

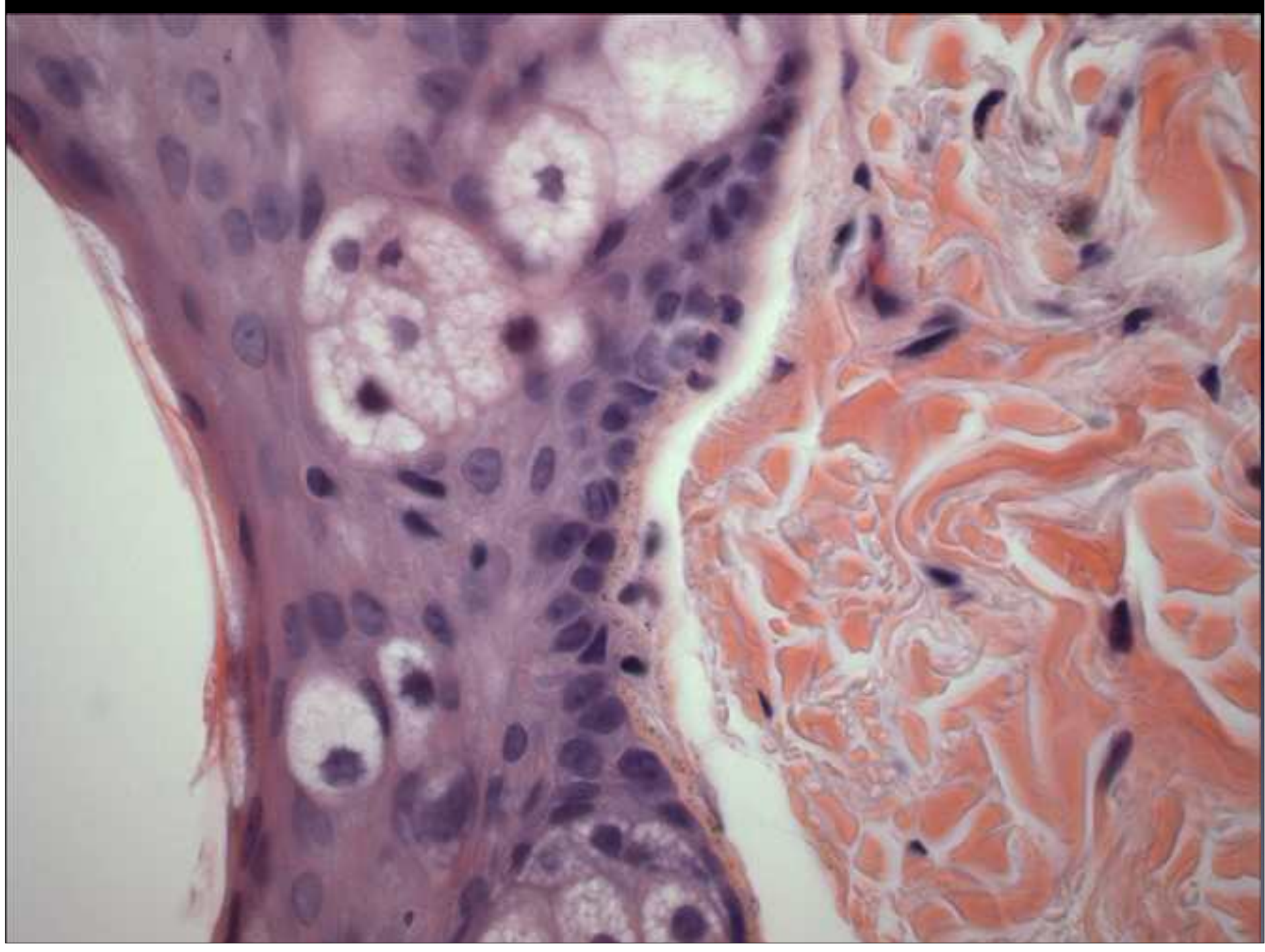
J Am Acad Dermatol 2003 Apr;48(4):521-4

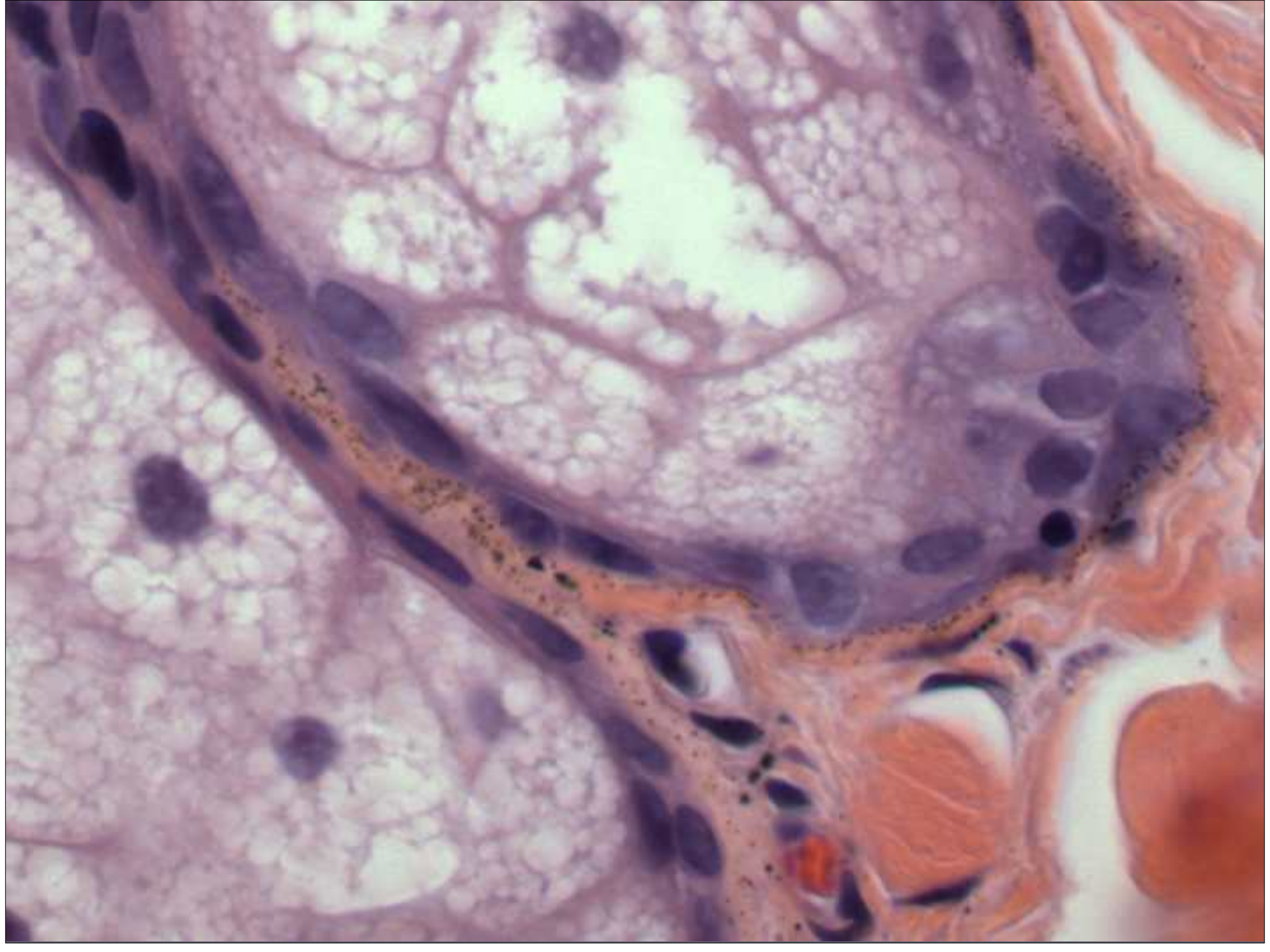
Histopathology

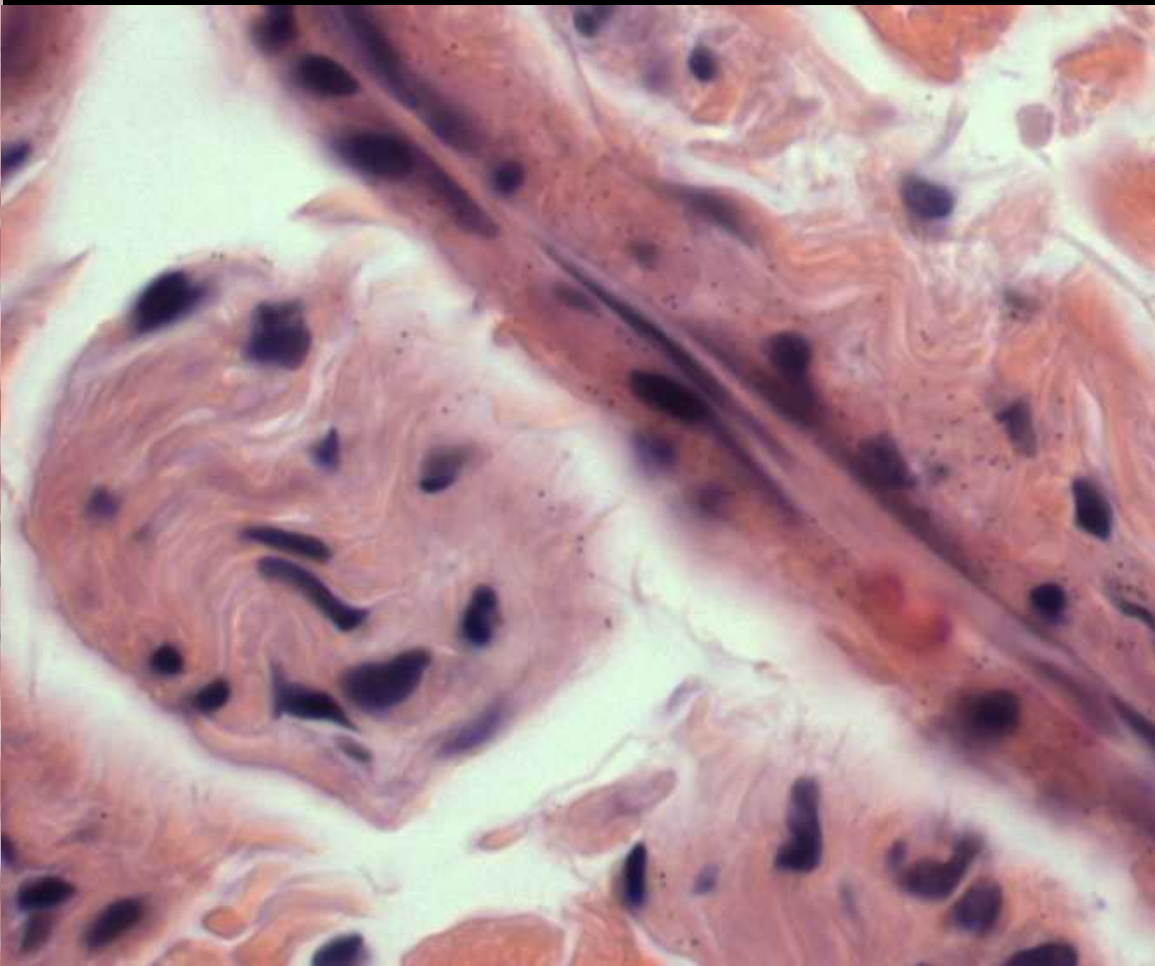
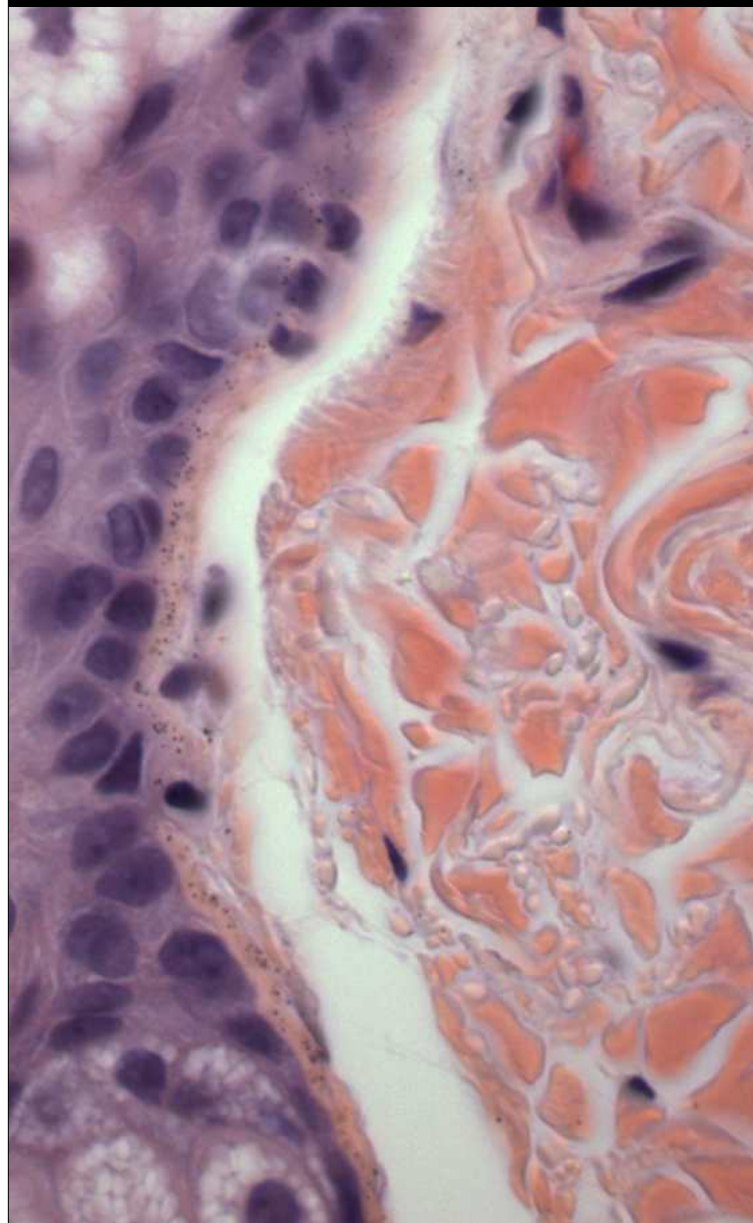


- Non-specific epidermal changes, depending upon patient scratching
- Scant superficial perivascular and interstitial infiltrate of mixed mast cells and rare eosinophils
- Giemsa or Leder stain to confirm
- Rule out urticarial bullous pemphigoid or pemphigus vulgaris









Argyria

Clinical



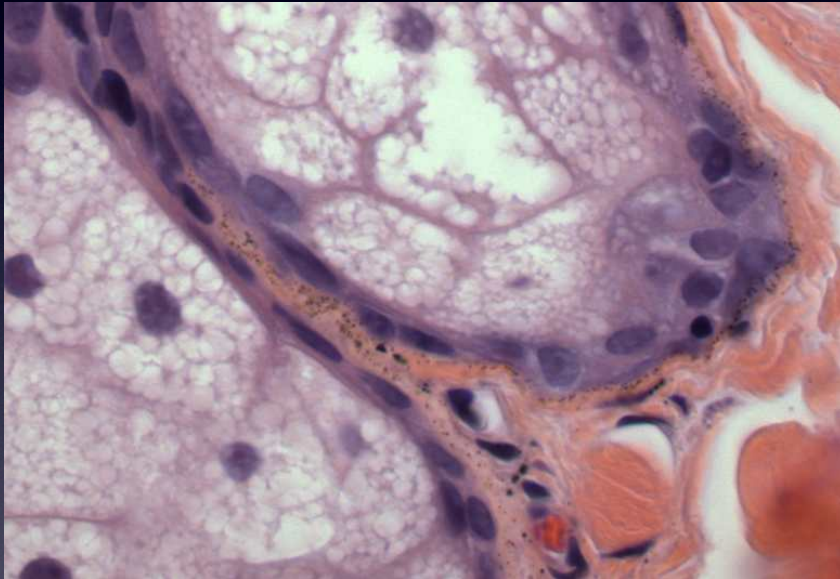
- Gray to gray-black staining of skin and mucous membranes produced by silver deposition
- Early gray-brown staining of the gums develops, later progressing to involve the skin diffusely
- Slate-gray, metallic, or blue-gray color and may be clinically apparent after a few months to years
- Viscera tend to show a blue discoloration, including the spleen, liver, and gut

Pathogenesis

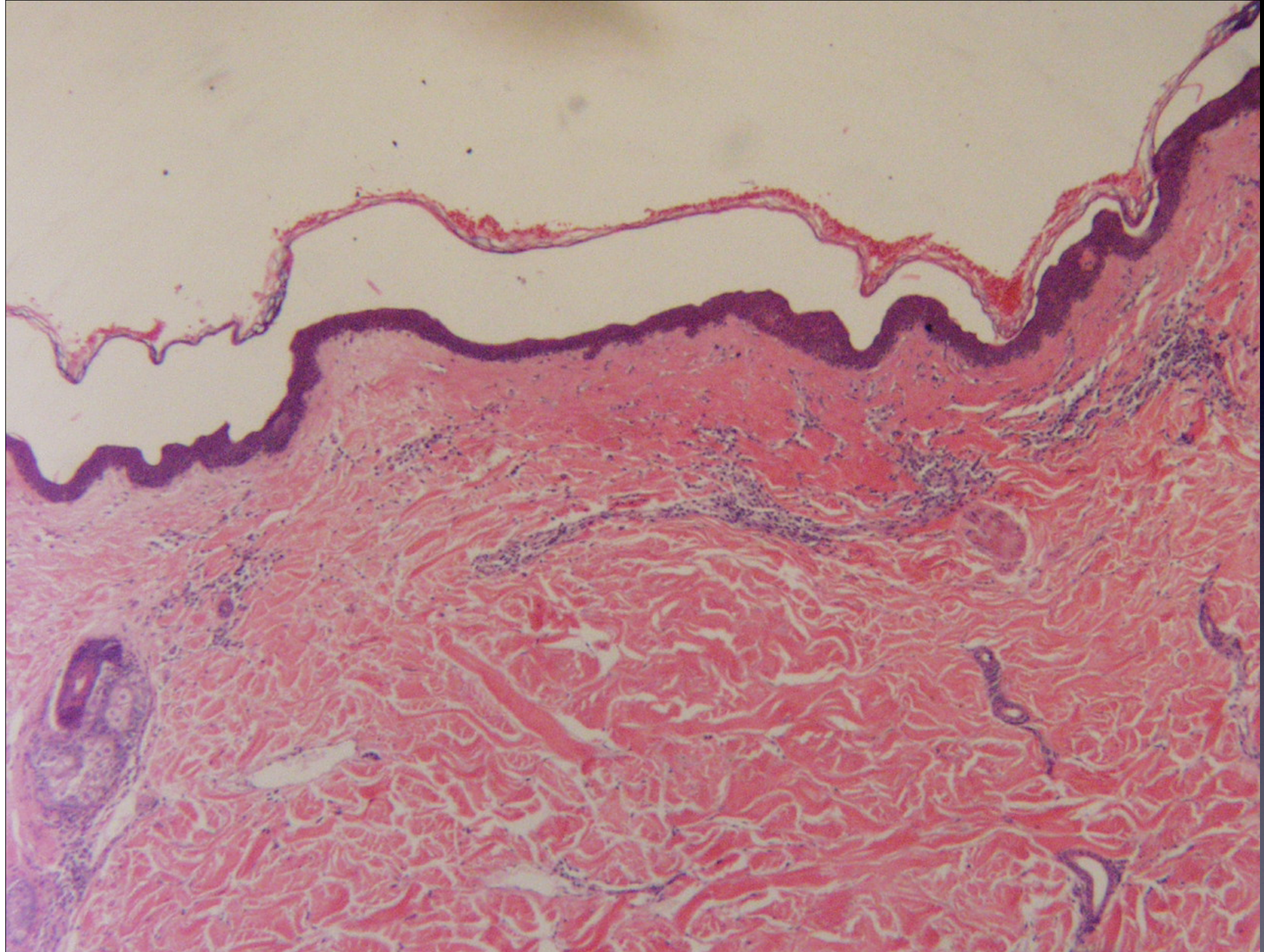


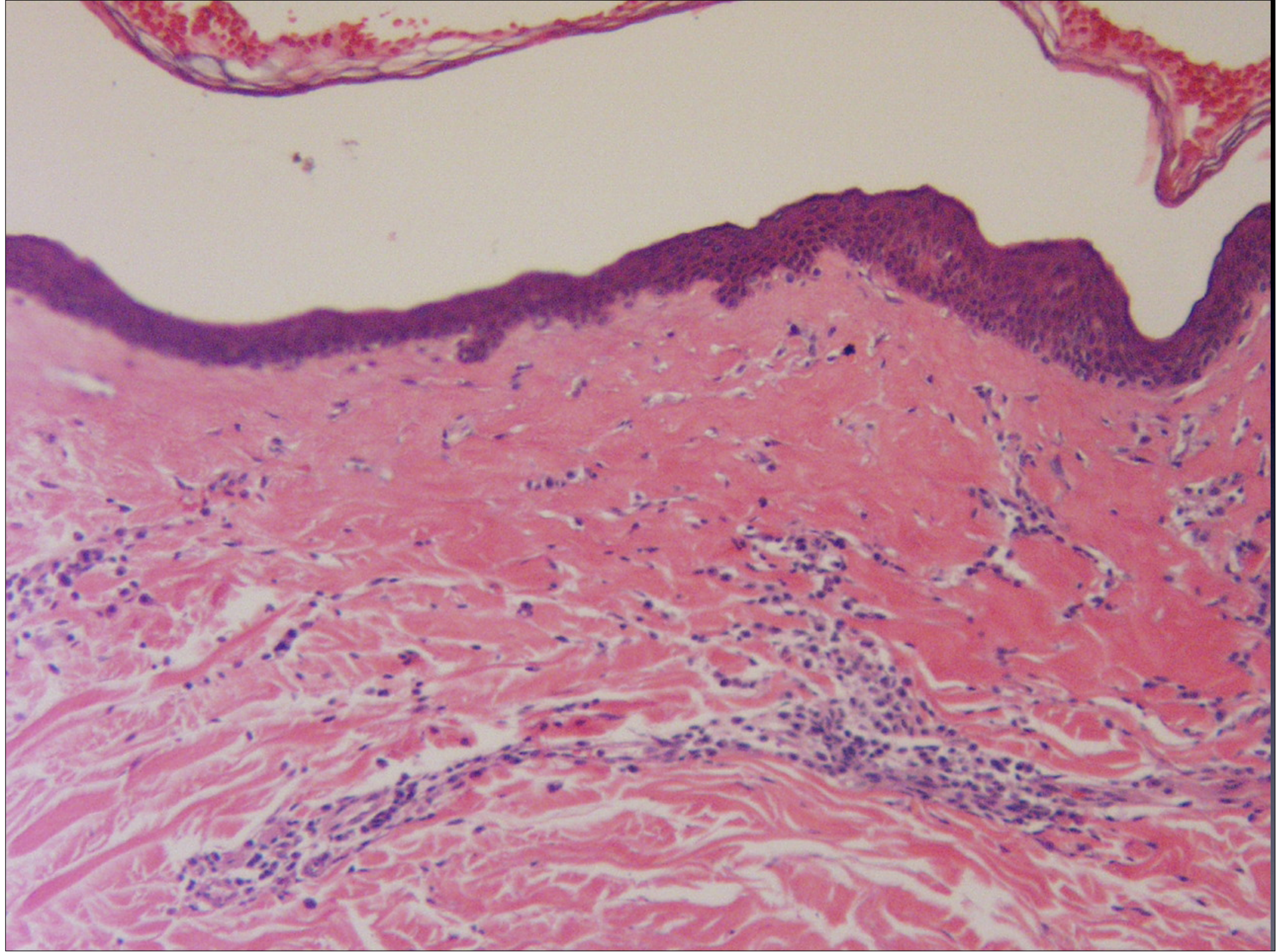
- Long-term systemic treatment with silver salts containing drugs
 - Silver protein suspension for chronic gastritis or gastric ulcer, or as nose drops
 - Colloidal silver dietary supplements are marketed widely for cancer, AIDS, diabetes mellitus, and herpetic infections
 - Occupational disease in workers who prepare artificial pearls or who are employed in the cutting and polishing of silver
- Smallest amount of silver reported to produce generalized argyria in humans ranges from 4-5 g to 20-40 g.
 - Silver at 50-500 mg/kg body weight is the lethal toxic dose in humans
 - Normal human body contains about 1 mg silver

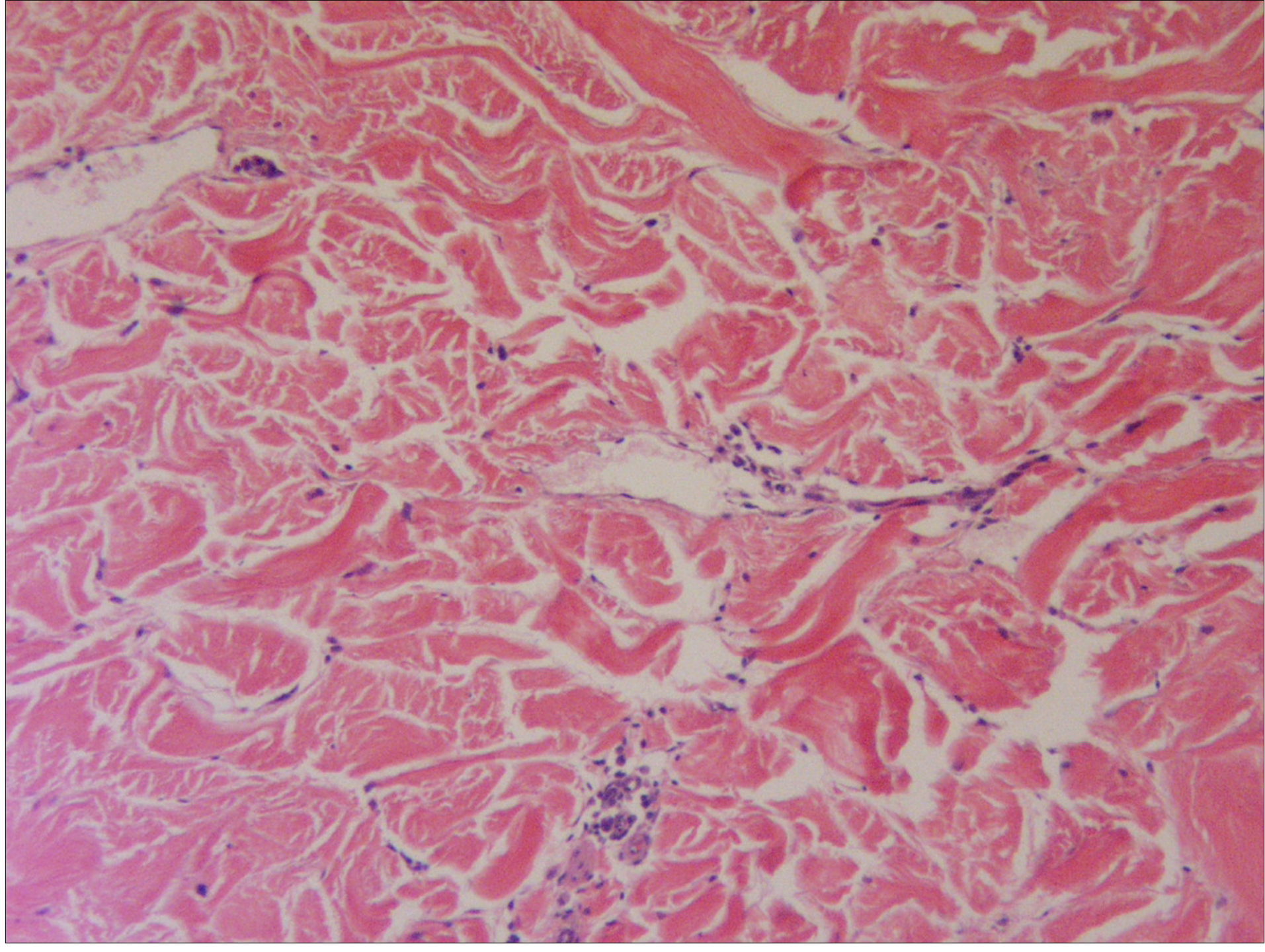
Histopathology

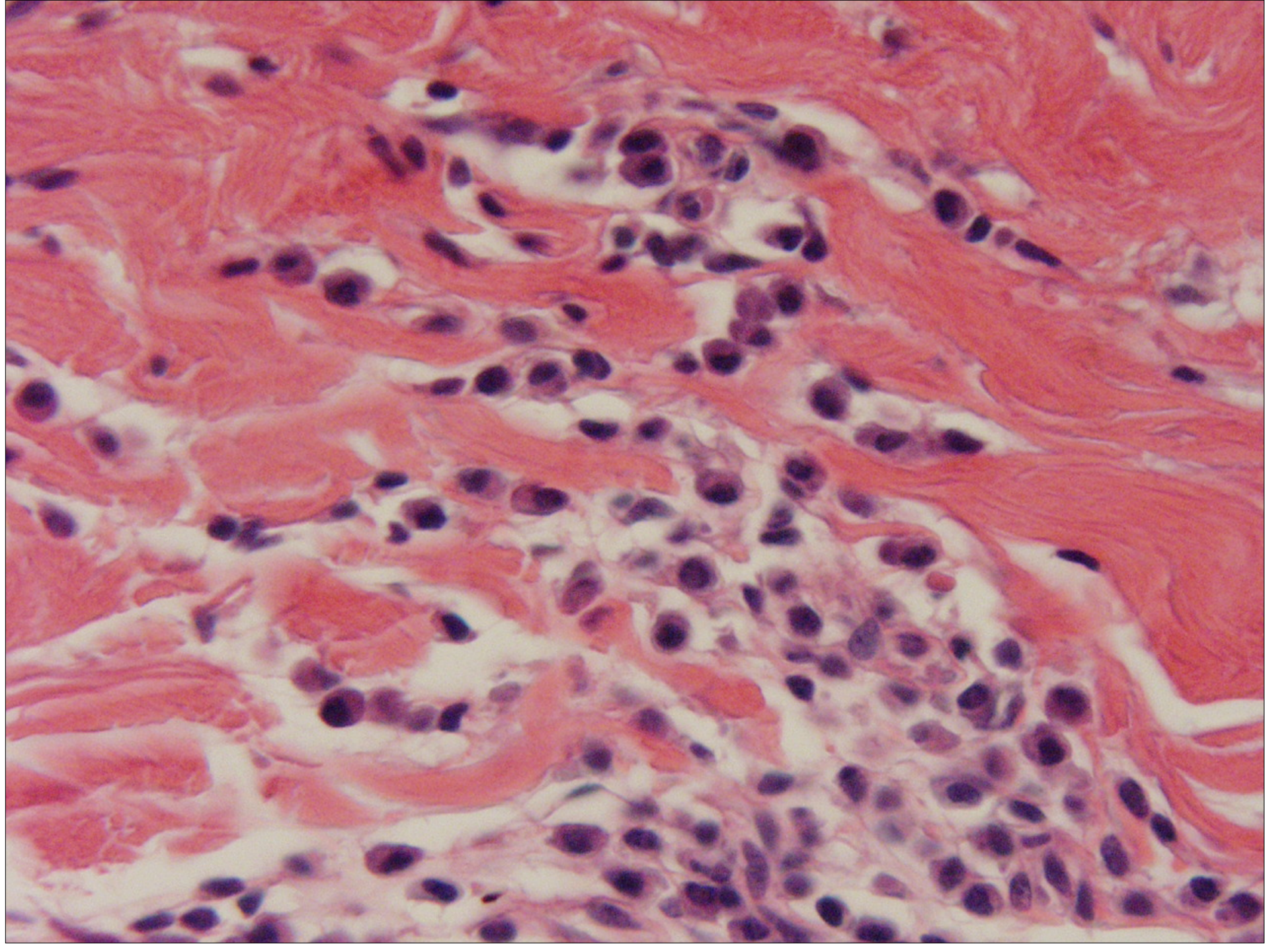


- Small, round, brown-black granules appear singly or in clusters
 - Spare both the epidermis and its appendages, appearing in greatest numbers in the basement membrane zone surrounding sweat glands.
 - Favor the connective tissue sheaths around pilosebaceous structures and nerves
 - Predilection for elastic fibers and are best visualized as strikingly refractile with dark-field illumination
 - An increase in the amount of melanin in exposed skin also appears to occur
- May decolorize the silver by placing histologic sections into 1% potassium ferricyanide in 20% sodium thiosulfate

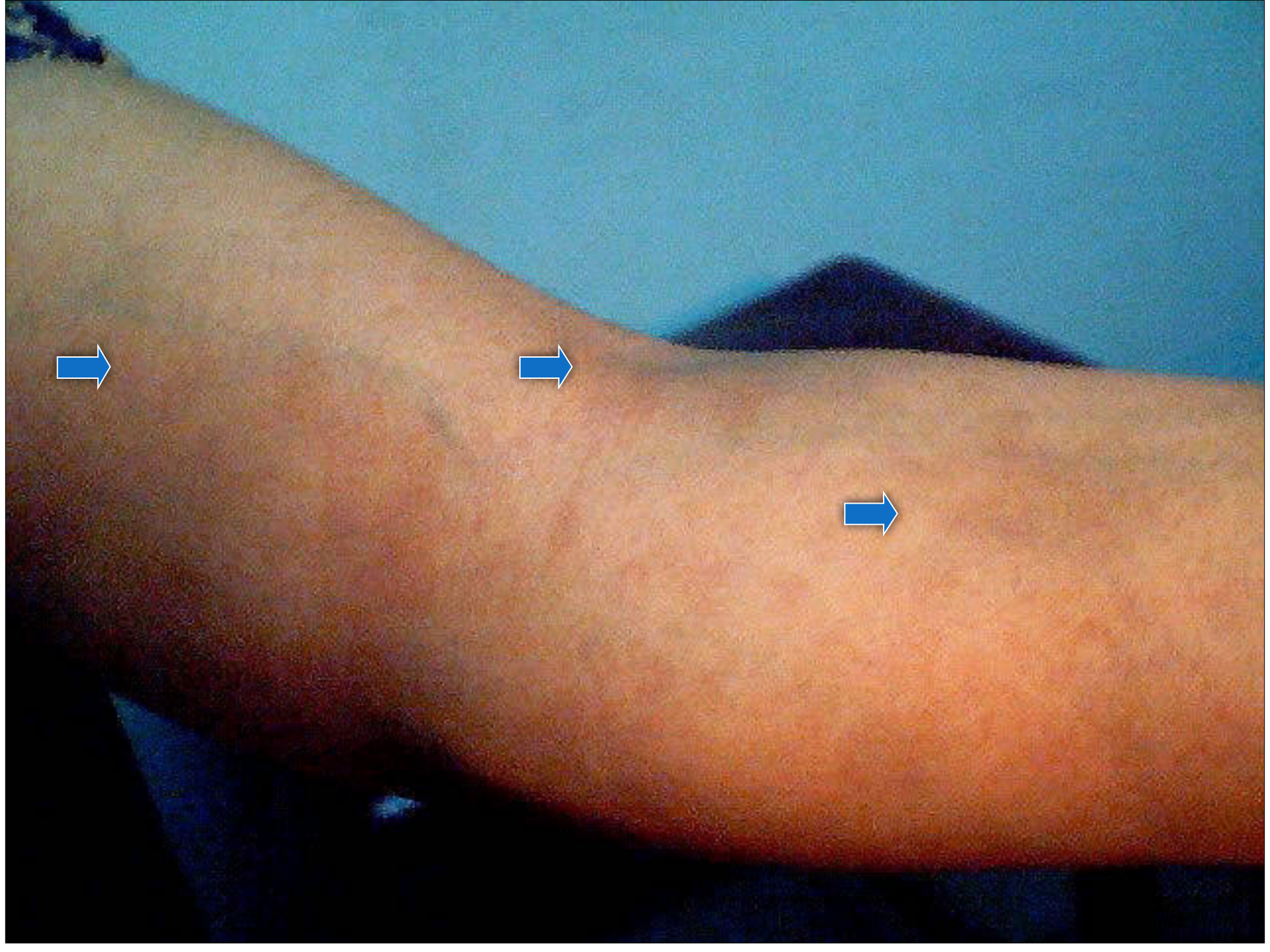








Morphea

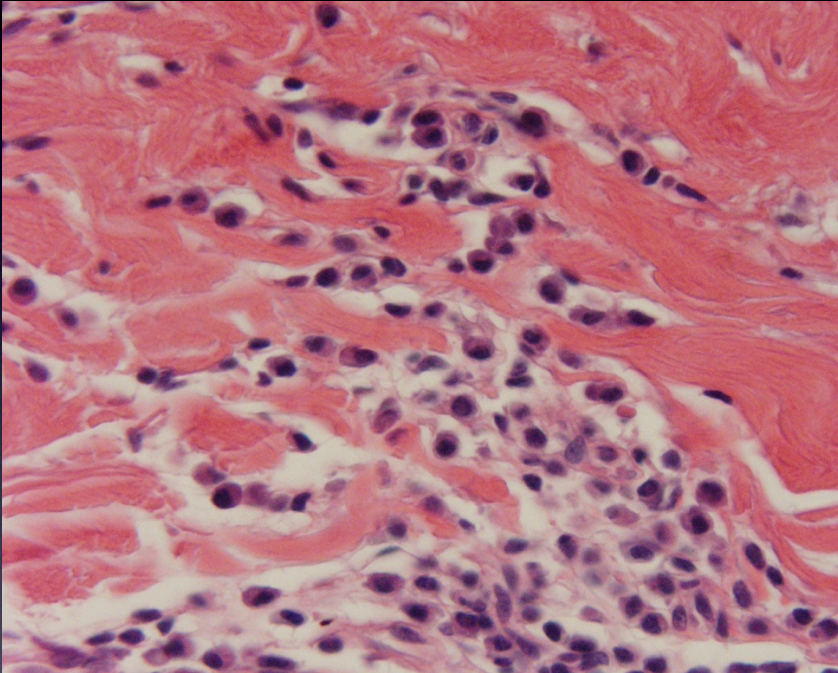


Clinical



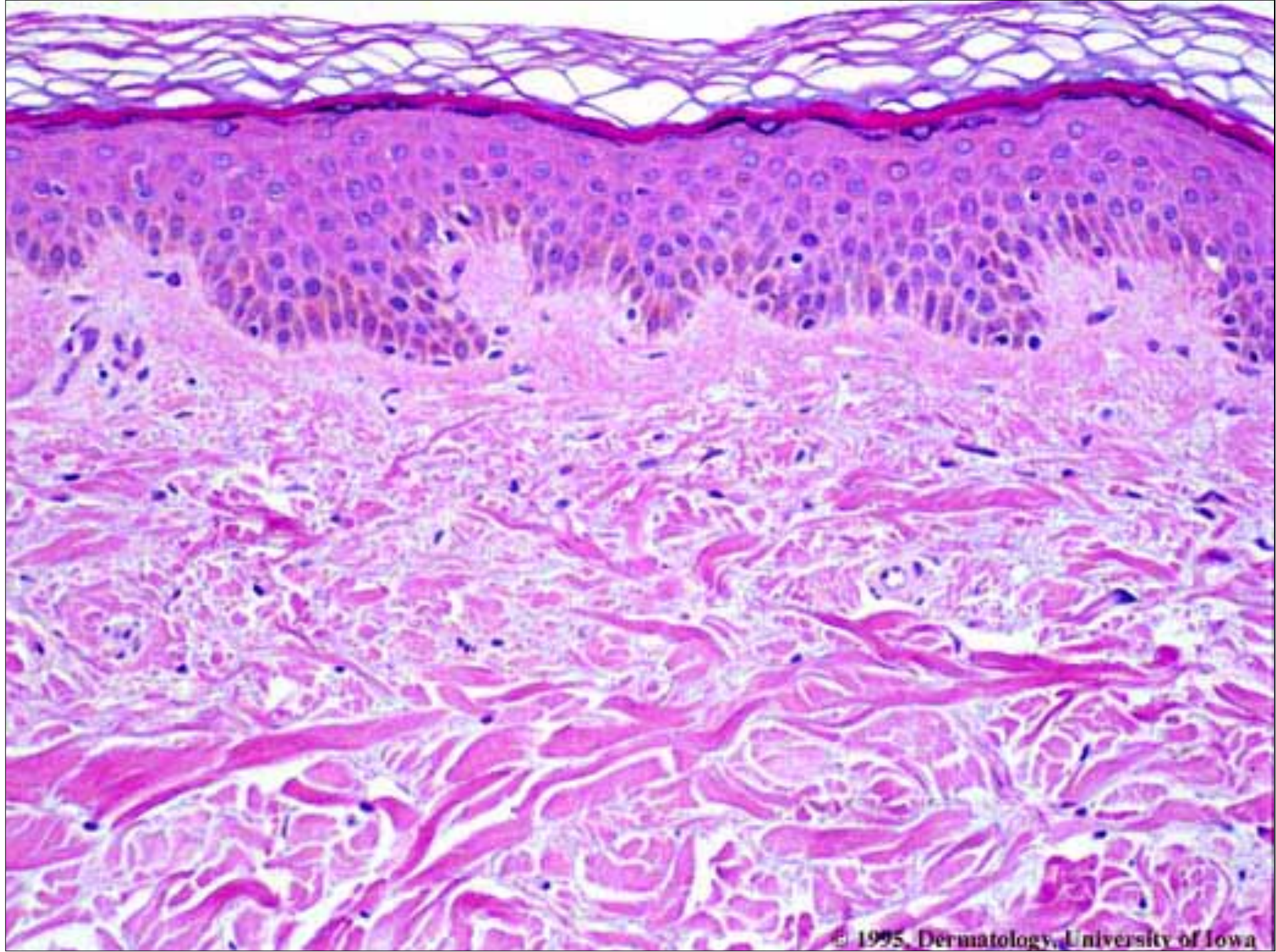
- Usually asymptomatic and onset of lesions is insidious
- Arthralgias occasionally localized to an affected extremity
- Deep morphea may be associated with arthralgias, arthritis, myalgias, and carpal tunnel
- En coup de sabre lesions of linear morphea
 - Can present with seizures, headache, and visual changes

Histopathology



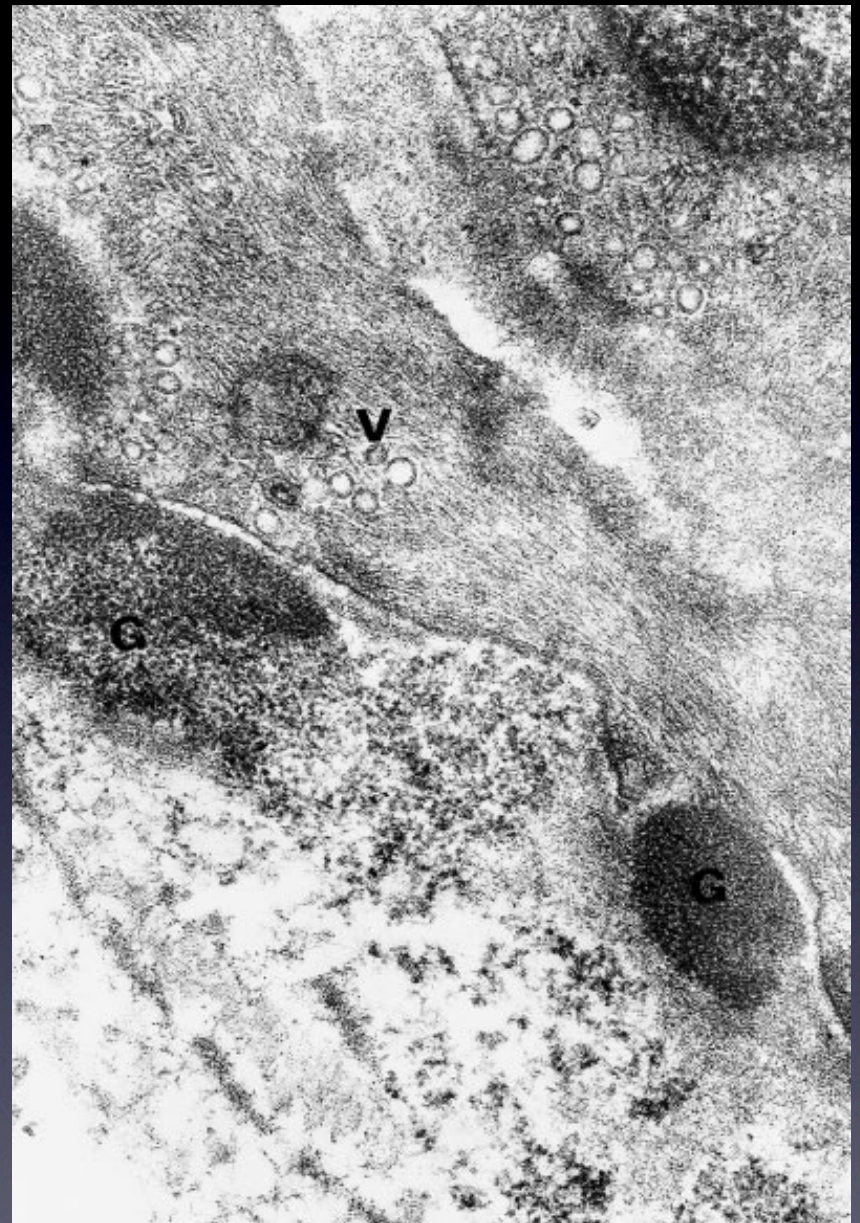
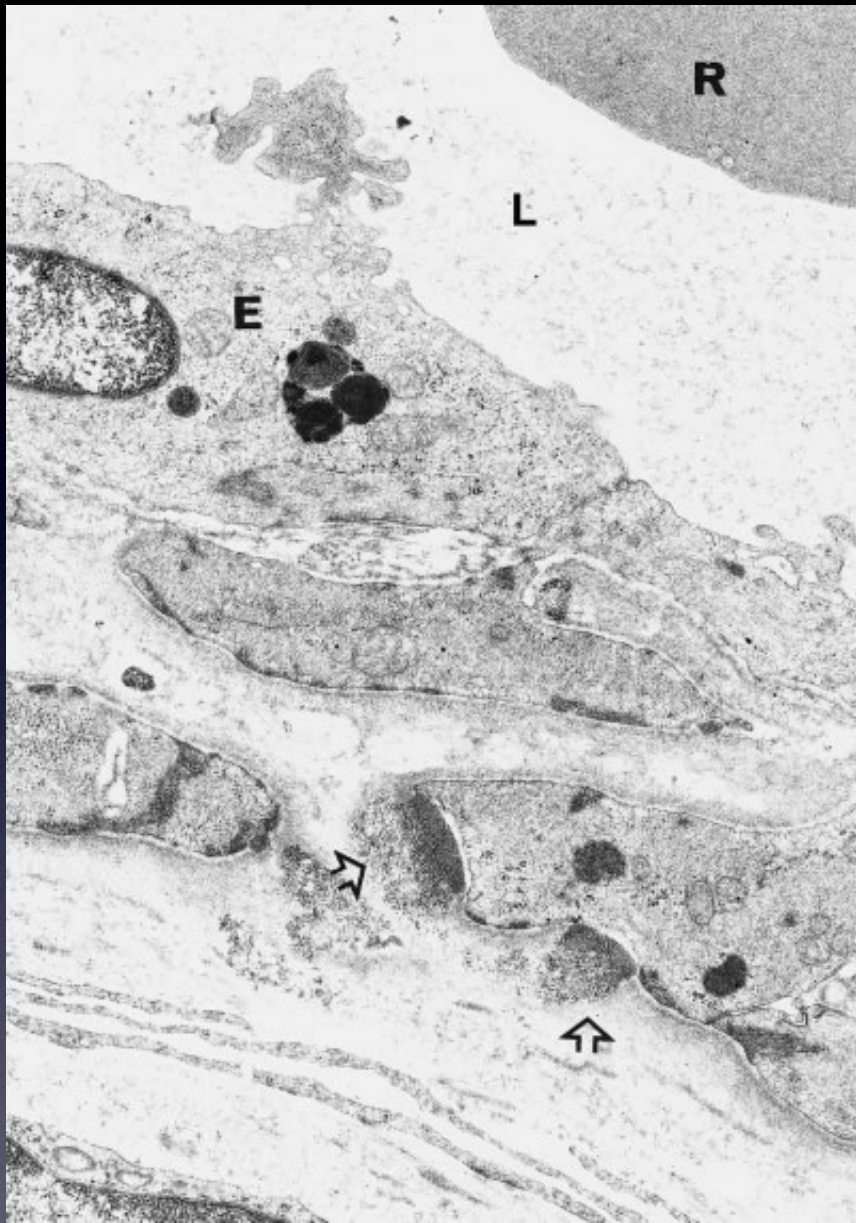
- Some cases need comparative biopsies of adjacent normal skin
 - Atrophoderma of Pasini and Peirini
- Inflammatory phase with plasma cells
- Decreased thickness of dermis
- Dermal sclerosis

The Ultimate Invisible Dermatitis!









CADASIL

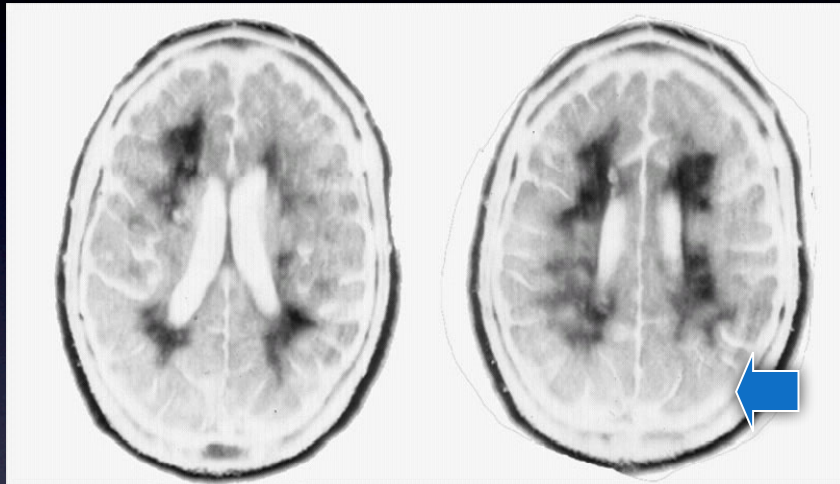
(Cerebral Autosomal Dominant Arteriopathy with Subcortical
Infarcts and Leukoencephalopathy)

Clinical



- Young adults, most symptoms by 60 yrs
- Migraines with or without an aura, mood disturbances, focal neurologic deficits, strokes, and dementia
- Recurrent subcortical ischemic events causing permanent deficits in as many as 2/3 of patients

CADASIL-MRI Findings

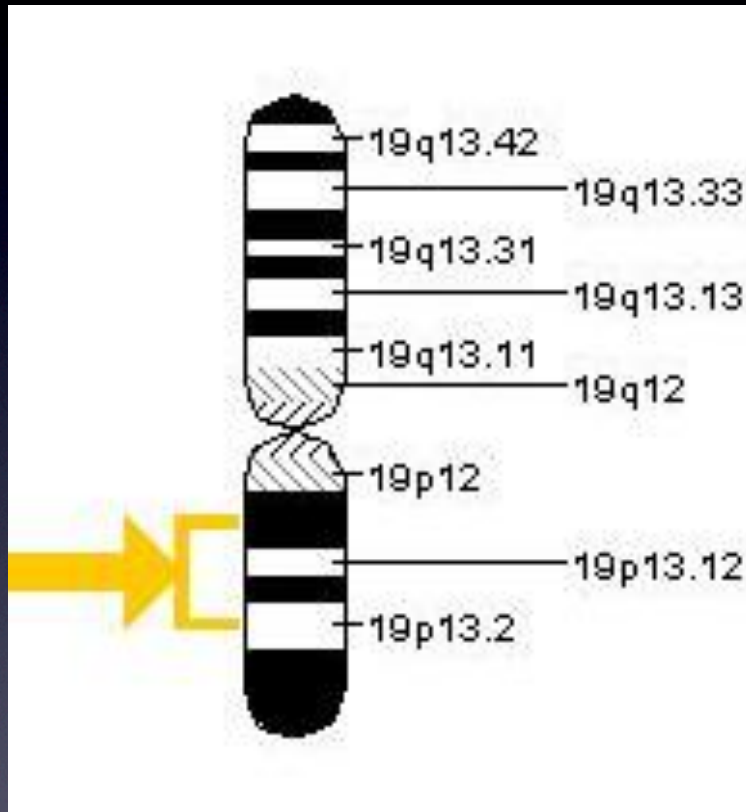


Normal

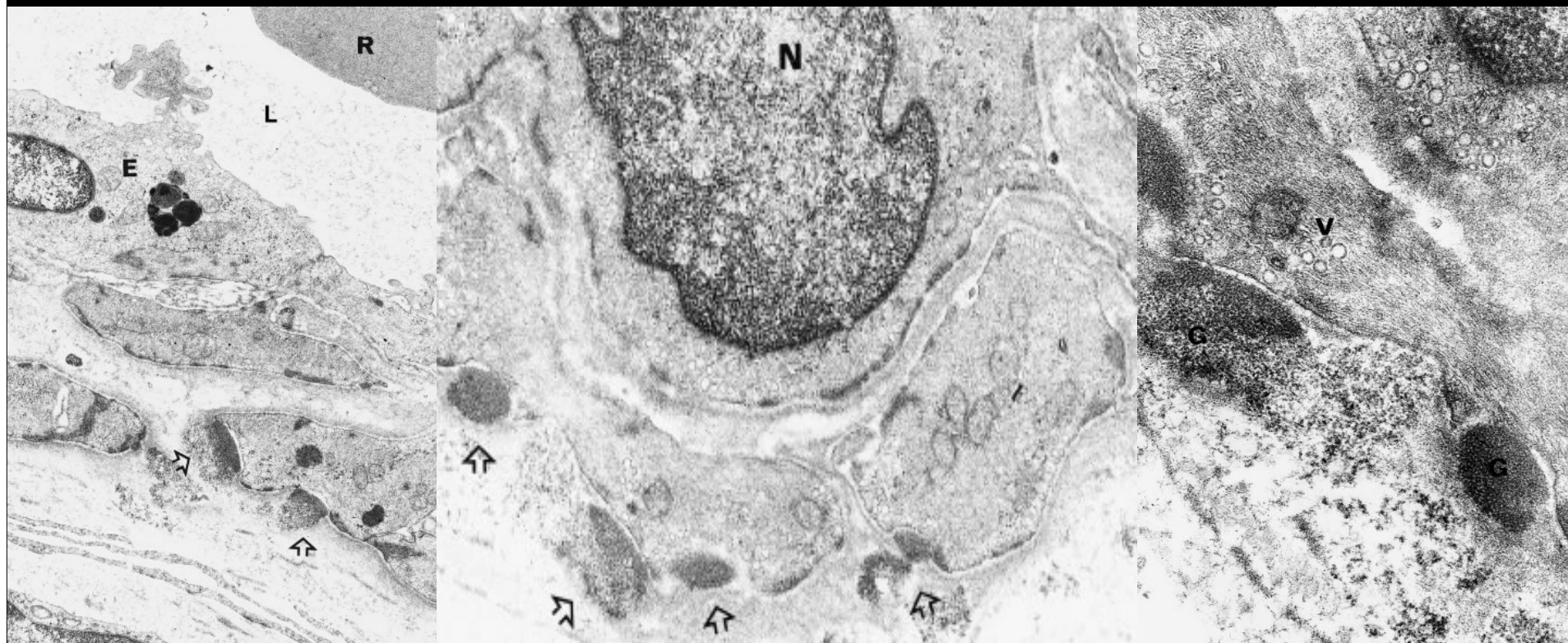
CADASIL

- Lesions usually symmetrically situated within the white matter and deep gray nuclei-periventricular white matter is preferentially involved
- Usually in the frontal lobe, temporal lobe, subinsular white matter, and internal and external capsules with relative sparing of the inferior frontal and occipital white matter in the early stages
- Brainstem affected in 45% of cases

Pathogenesis



- Mutations in the Notch 3 gene cause degeneration of vascular smooth muscle cells and multiple small infarcts in the white and deep gray matter of the brain
- Numerous areas, granular, electron-dense, osmiophilic material abutted vascular smooth muscle cells



Granular osmiophilic material abutting basement membrane of pericytes

Am J Dermatopathol. 2005 Apr;27(2):131-4. Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL): a hereditary cerebrovascular disease, which can be diagnosed by skin biopsy electron microscopy.

Ishiko A, Shimizu A, Nagata E, Ohta K, Tanaka M

Department of Dermatology, Keio University School of Medicine, Tokyo, Japan.

Questions



- The advantage of a bad memory is that one enjoys several times the same good things for the first time.

-- Friedrich Nietzsche

