

What do I treat? Is it pyoderma or allergy?

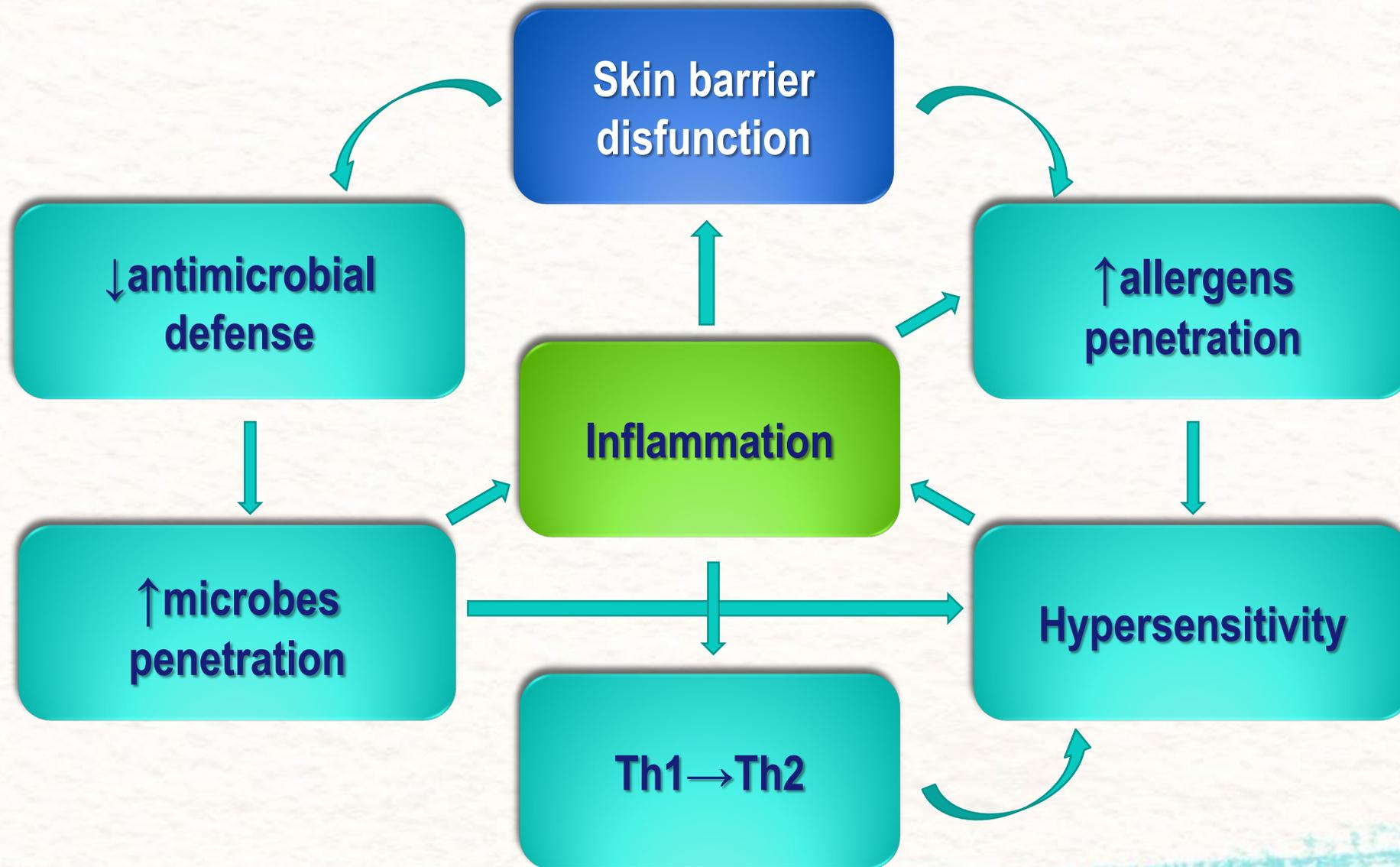
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What we are going to talk about:

- What is the relationship between allergy and pyoderma? What is primary and what is secondary problem?
- Which skin lesions tell us about allergy? How do they form?
- Which skin lesions tell us about pyoderma? How do they form?
- Clinical situations: trying to classify them.

Atopic dermatitis etiology



Патология иммунной системы или кожного барьера?

- ↓ IFN γ ,
- ↓ IL-10,
- ↑ TSLP → ↑ Th2,
- ↑ IL-4,
- IL-5,
- IL-13,
- IL-31,
- ↑ IgE...
- ↑ transepidermal water loss
- Defect of lipid lamellae in epidermis
- ↓ ceramides (1, 2/10, 3, 5/8, 9)
– Possibly inflammation-induced
- ↓ filaggrin expression / function
– Possibly inflammation-induced
- ↓ CLDNs expression in tight junctions
- Changes in corneodesmosine profile expression after challenge with allergen.

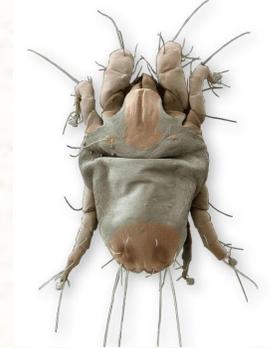
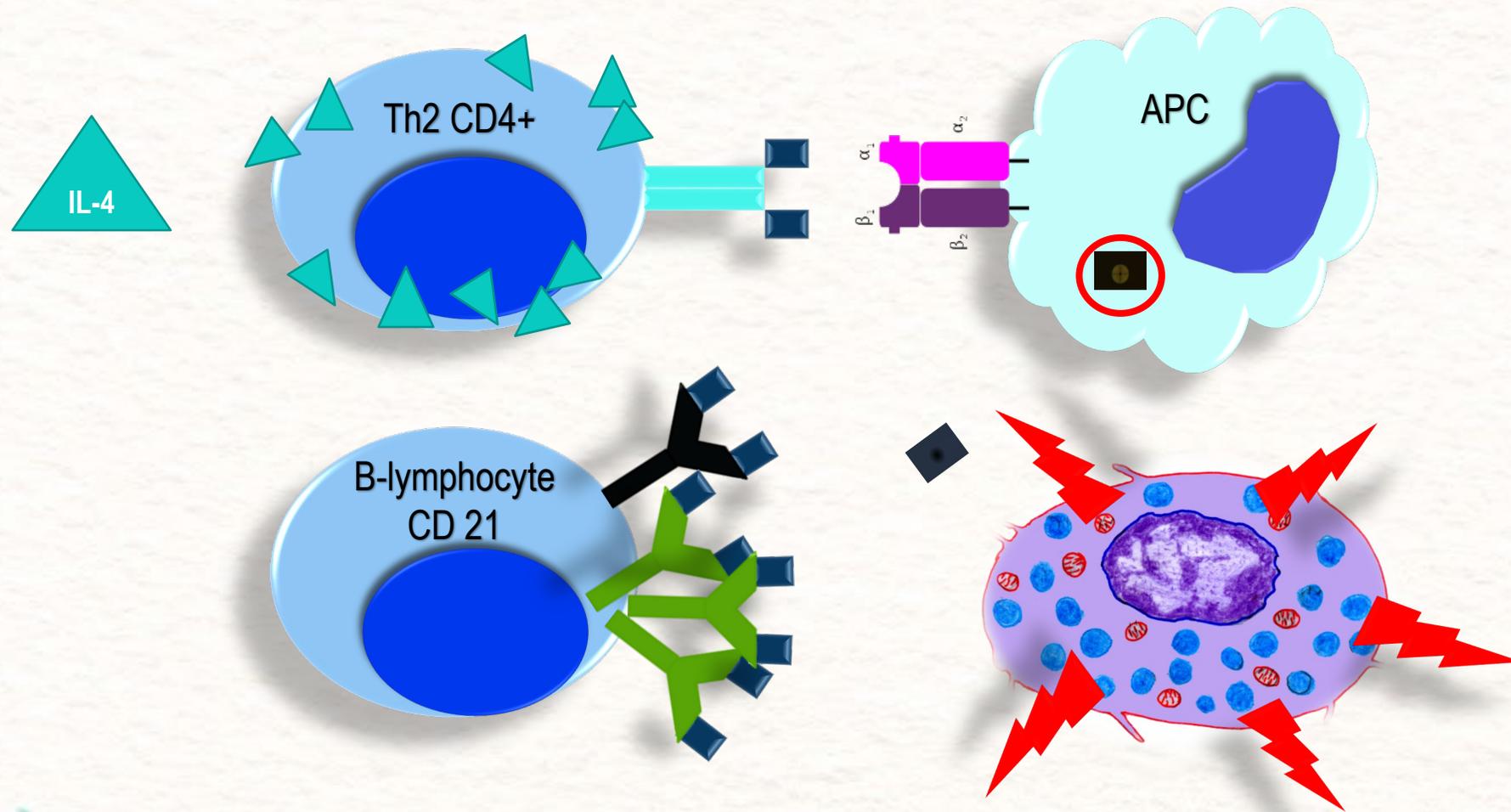
Distinguishing pyoderma
from allergy

What is allergy?

- Reaction of hypersensitivity



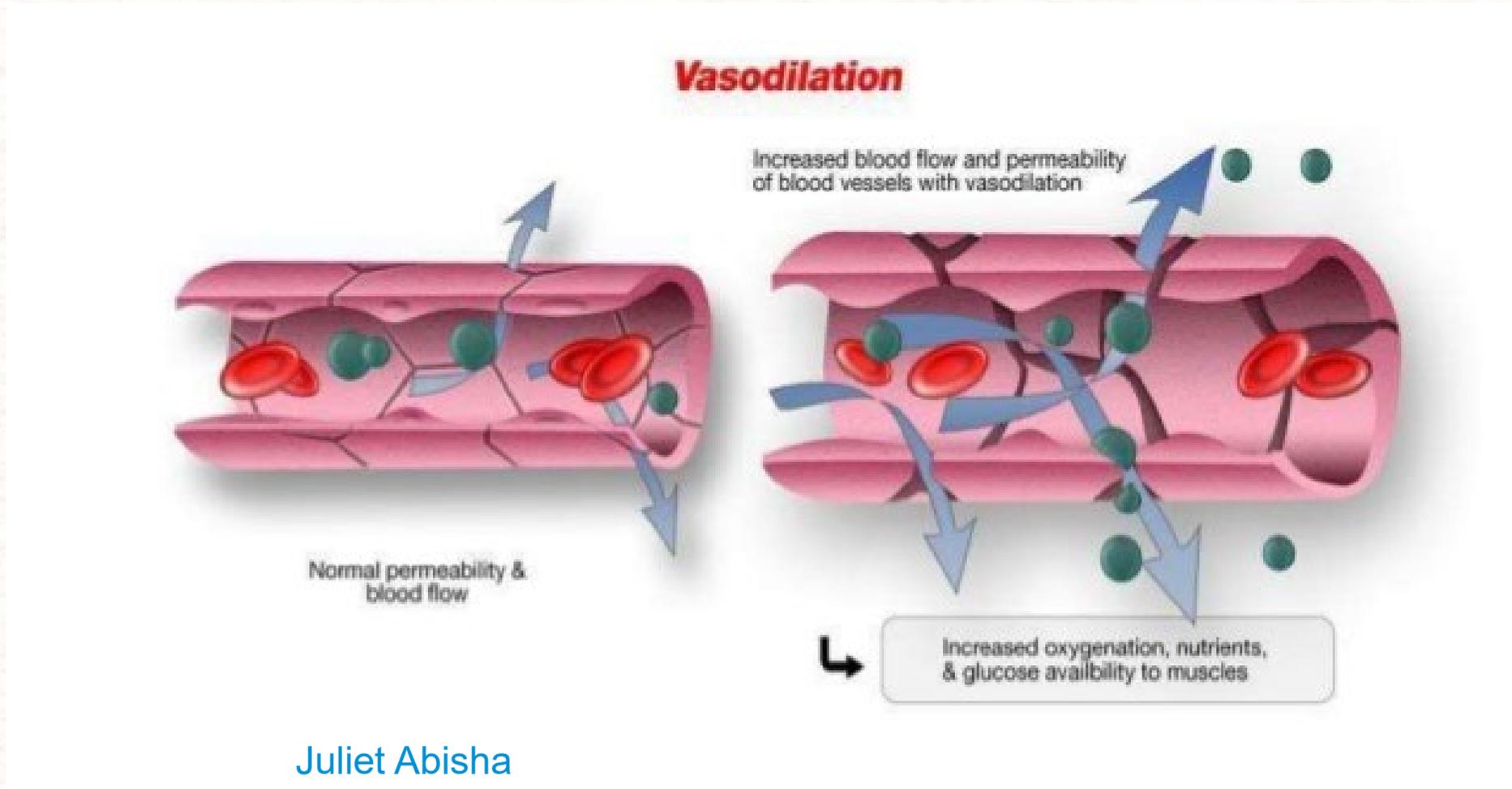
Type 1 hypersensitivity reaction



Proinflammatory cytokines – what are they needed for?

- To require leucocytes and macrophages
- But leucocytes are in the vessels.... And they quickly run by...

Inflammation



Primary allergic skin lesions

Erythema (diffuse)

Pruritus

Secondary allergic skin lesions

Excoriations

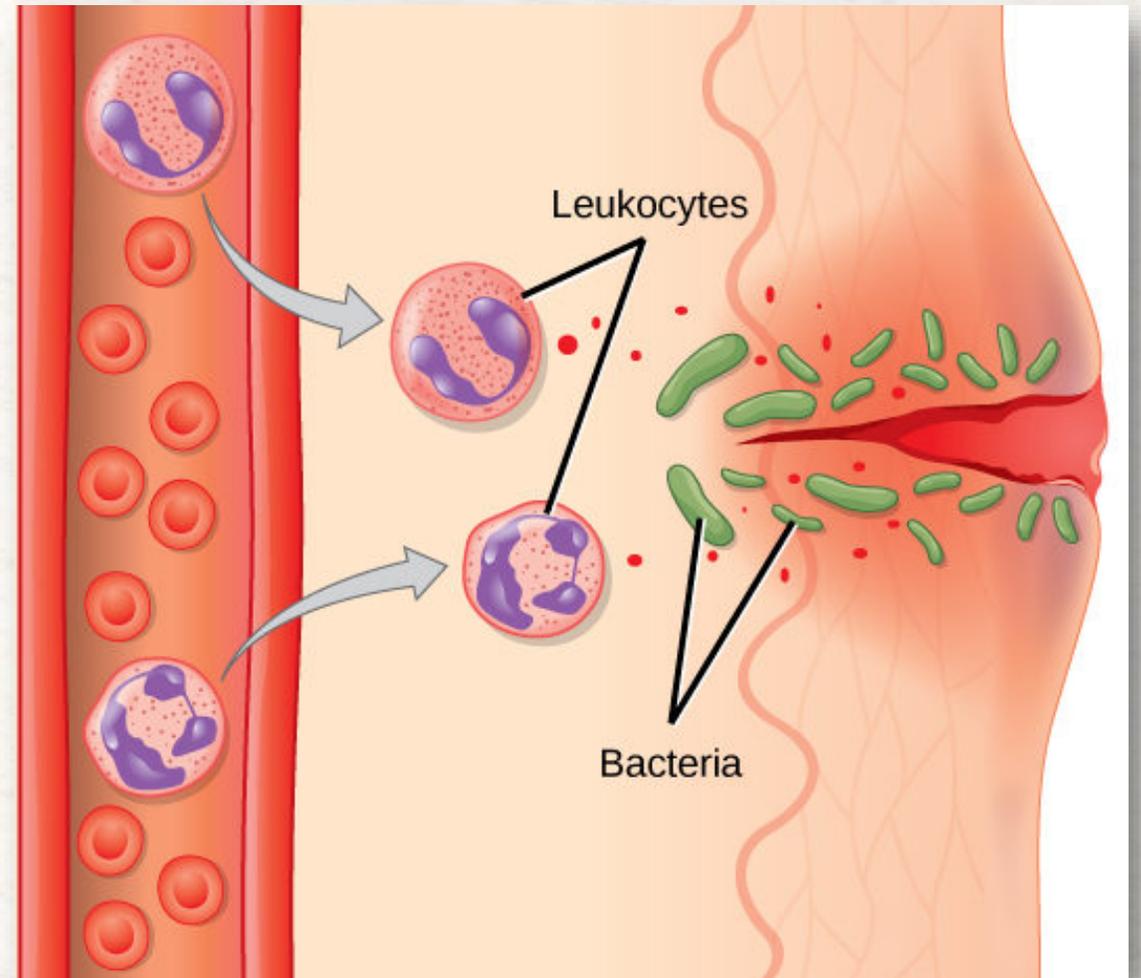
Lichenification

Secondary allergic skin lesions

Self-induced alopecia

What is pyoderma?

- Bacterial purulent skin inflammation
- ALWAYS SECONDARY!!!



Lumen, Biology

Primary pyoderma skin lesions

Papule

Pustule

Primary pyoderma skin lesions

Plaque

Nodule and abscess

Secondary pyoderma skin lesions

Crust

Erosion/ulcer and epidermal collarette

Secondary pyoderma skin lesions

Spontaneous focal/multifocal alopecia

Draining tract

Clinical situations

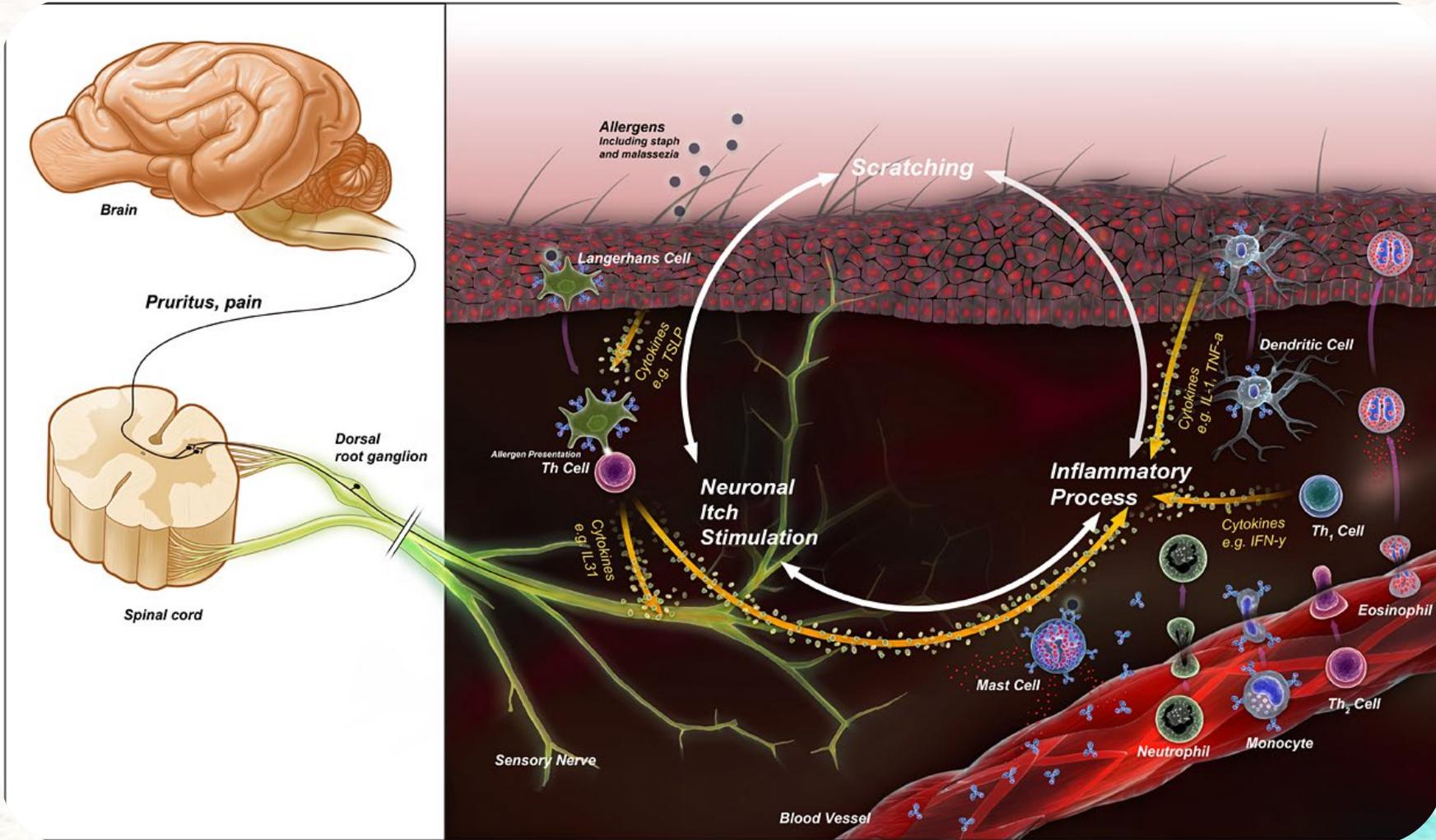
1. Obvious allergy + superficial pyoderma

- Control of inflammation will likely control pyoderma
 - Steroids / apoquel
 - Topical antiseptics
- Sometimes weak response to AB is secondary to severe inflammation
 - Cytology +/- culture!
- We can start a diagnostic work up now
- If pruritus/inflammation are well controlled, pyoderma does not recur.

2. Obvious allergy + Lichenification + pyoderma doesn't respond to AB!

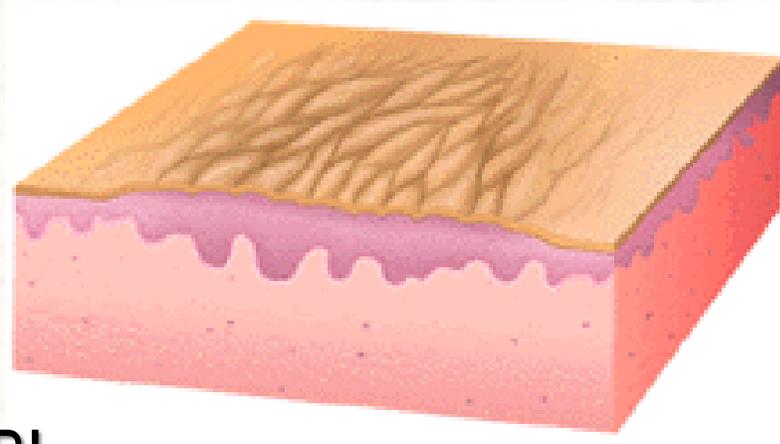
- Lichenification:

“Pruritus witch cycle”



2. Obvious allergy + Lichenification + pyoderma doesn't respond to AB!

- Lichenification:



- Don't use systemic AB!
 - Topical antiseptics (shampoo, sprays)
- Steroids – until skin is back to normal
 - Apoquel – may be needed longer course
- Possibly it is better to postpone the diagnostic work up.

3. Obvious allergy + deep pyoderma

- Systemic AB is required!
 - from 8-12 weeks or longer
- Steroids / apoquel / cyclo – risky –
close control of pyoderma is difficult!
 - Better to start them later than AB
- Diagnostic work is usually postponed.

4. Likely allergy + superficial pyoderma

- Pyoderma does not directly related to the most inflamed areas
- Systemic AB may be needed
 - What if pyoderma hides the allergy signs?
- Diagnostic work up can be started
 - If there are other allergic areas on the body WITHOUT pyoderma
- It is not clear for the future – would the antiallergic treatment prevent pyoderma recurrence.

5. Likely allergy + deep pyoderma

- Systemic AB in needed
 - From 8-12 weeks and longer
- Are there any areas with only allergic clinical signs without pyoderma lesions?
 - If yes – we can start a diagnostic work up
 - If not – the diagnostic work up should be postponed
- Sometimes anti-inflammatory treatment required in the beginning (pododermatitis)
- It is important for prognosis to understand a mechanism of pyoderma development in the patient.

6. Just pyoderma. No allergy clinical signs.

- Treat pyoderma and reexamine the patient again:
 - If there are allergy symptoms - diagnostic work up
 - If there are no allergy symptoms – look for other possible diseases signs
 - If there are no any symptoms – observation, would pyoderma relapse and when?

7. Recurrent pyoderma. No allergy clinical signs.

- Is hypothyroidism possible?
- Has demodicosis been checked?
- Reevaluate a diagnosis
- Could it be subclinical allergic patient?
 - Check frequency and seasonality of pyoderma relapses
 - Diagnostic work up can be performed based on the duration of remission period.

7. Recurrent pyoderma. No allergy clinical signs (2).

- Staphylococcal lysate / vaccine???
- Antiinflammatory therapy?
- Topical antiseptics in remission
- Can we restore the barrier function?
 - Fatty acids
 - Phytosphingosines
 - Moisturizers
- ASIT???

Summary

- It is crucial to distinguish allergy and pyoderma lesions
- Pyoderma is always secondary, but not always to allergy
- Systemic AB is not always needed in pyoderma cases
- In cases of deep pyoderma or chronic skin changes the allergy diagnostic work up may be postponed.
- A combination of antimicrobial and anti-inflammatory treatment can differ between the patients.