PEPTAXEL®
Skin Biopsy and Dermoscopic Evaluation

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In collaboration with
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Case 1

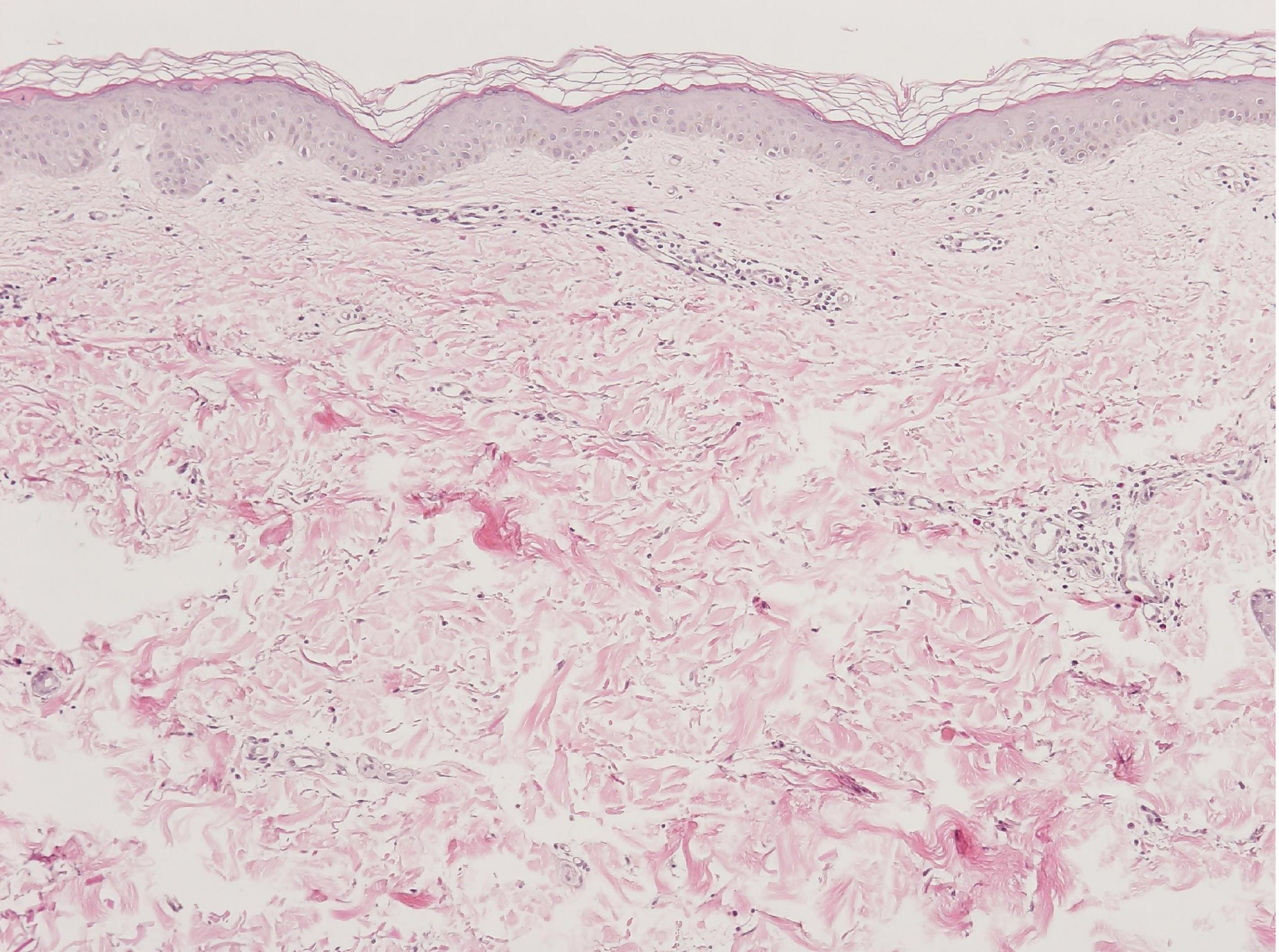
Method
PEPTAXEL® was applied to the inner upper arm of three subjects.
Skin biopsies were performed at Day 1, Day 2, and Day 3 post-treatment to assess spicule presence and tissue response.

case 1

Day 1 Post-Treatment

Spicules are observed penetrating the full thickness of the epidermis, without epidermal spongiosis.

Inflammatory cell infiltration is observed around blood vessels, including eosinophils.

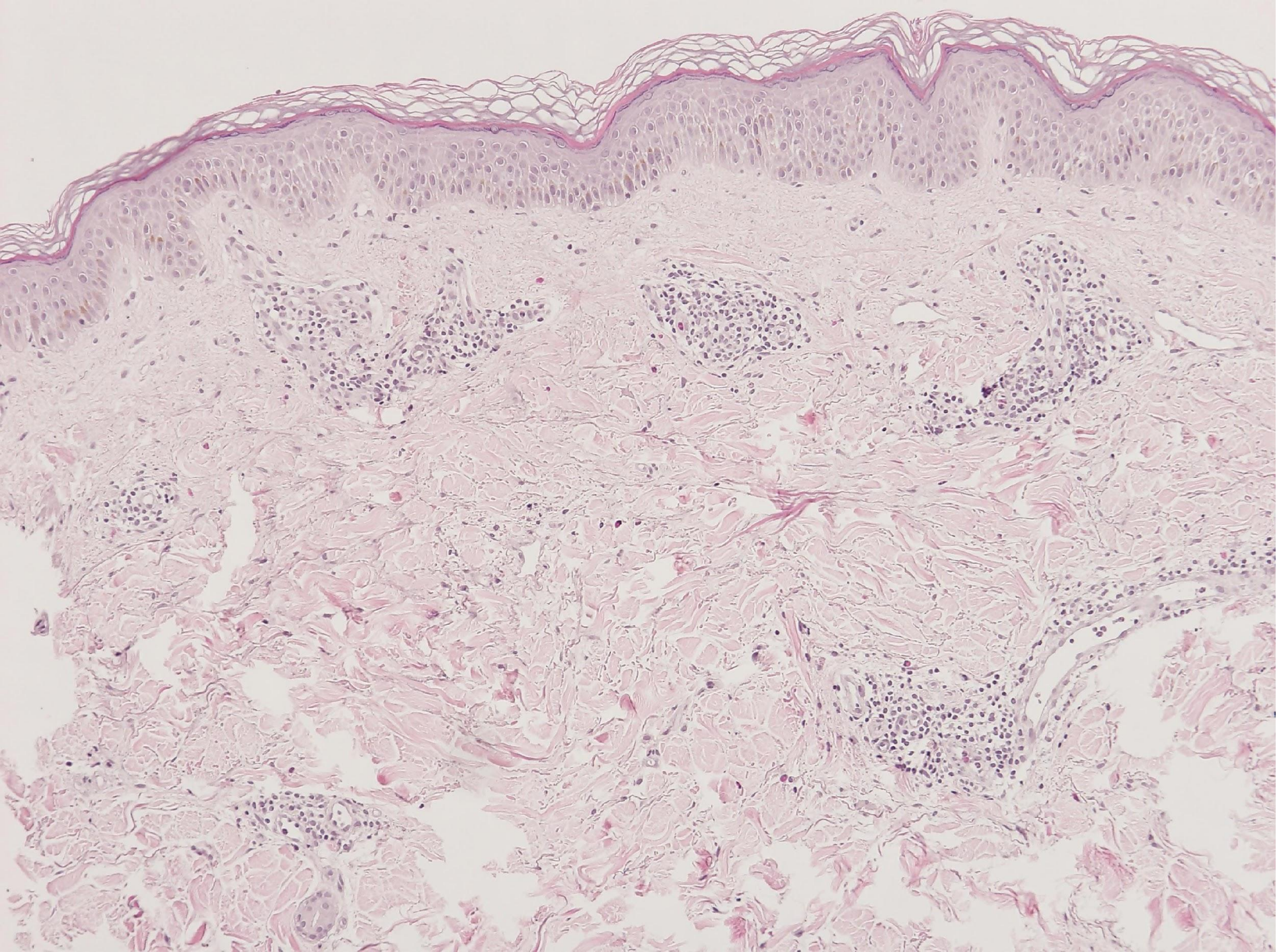


case 1

Day 2 Post-Treatment

Most spicules are no longer observed.

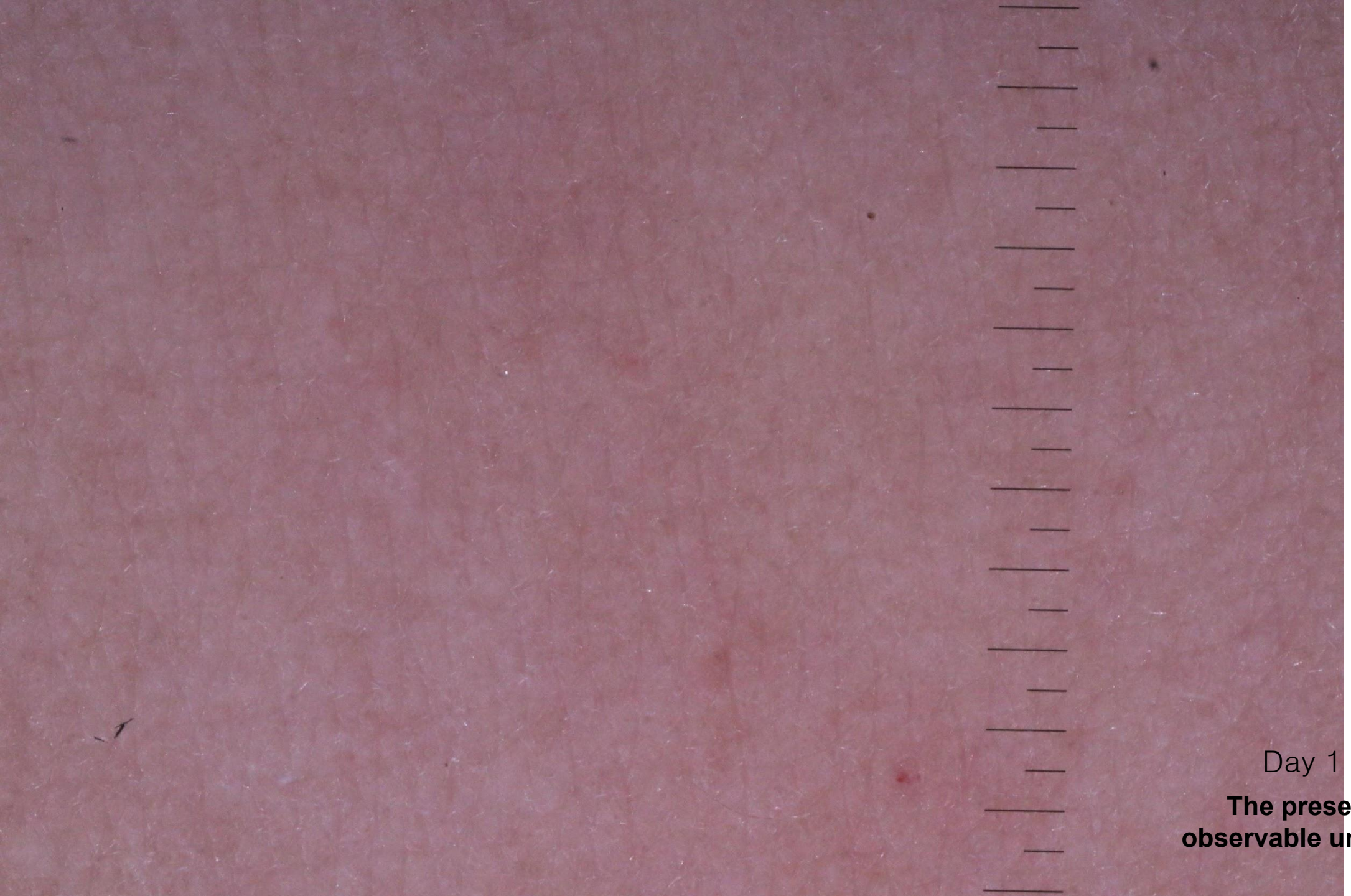
The degree of inflammatory cell infiltration around blood vessels is reduced.



case 1

Day 3 Post-Treatment

Inflammatory cell infiltration around blood vessels is still observed.



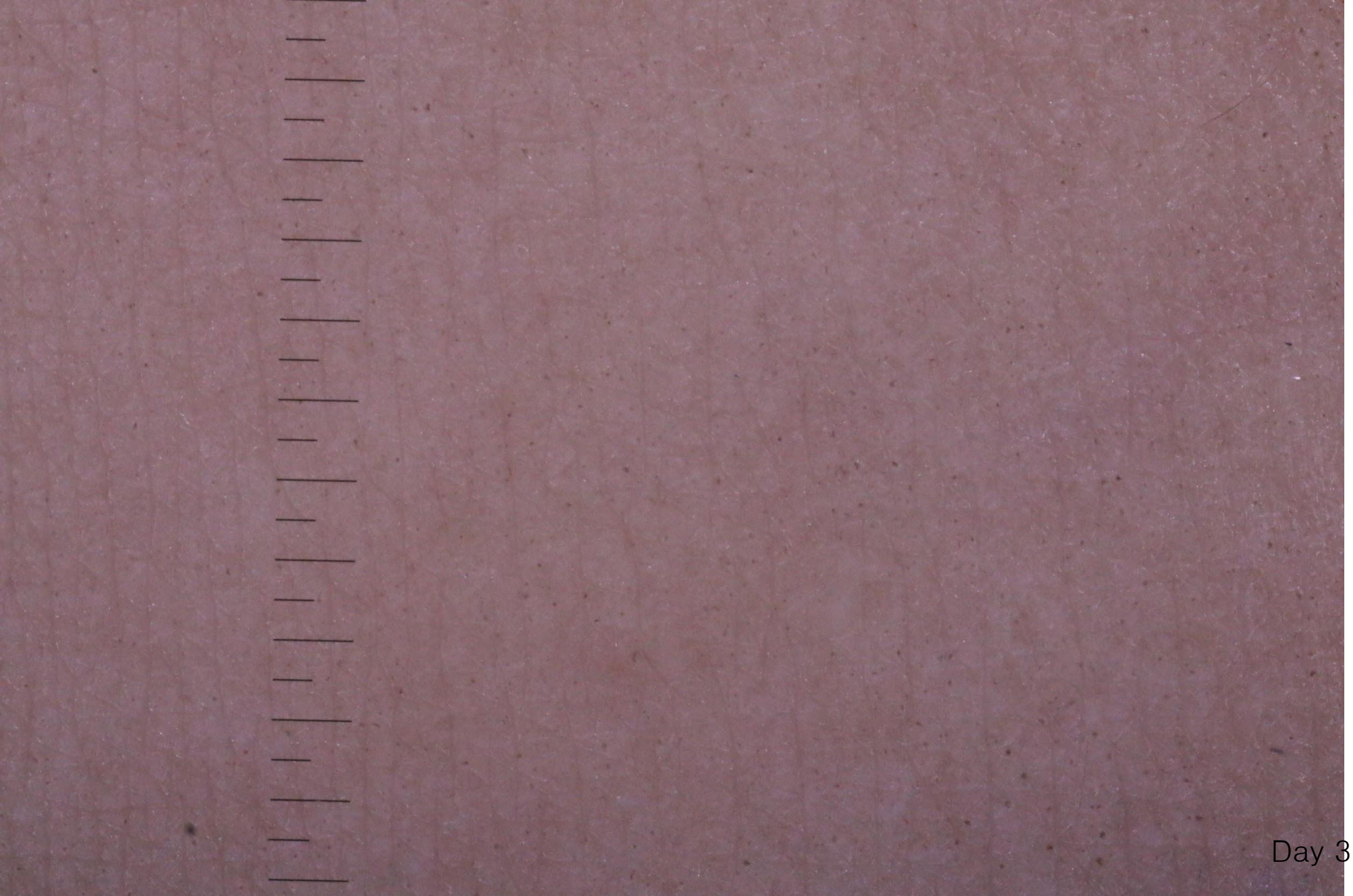
case 1

Day 1 Post-Treatment

The presence of spicules is observable under dermoscopy.

case 1

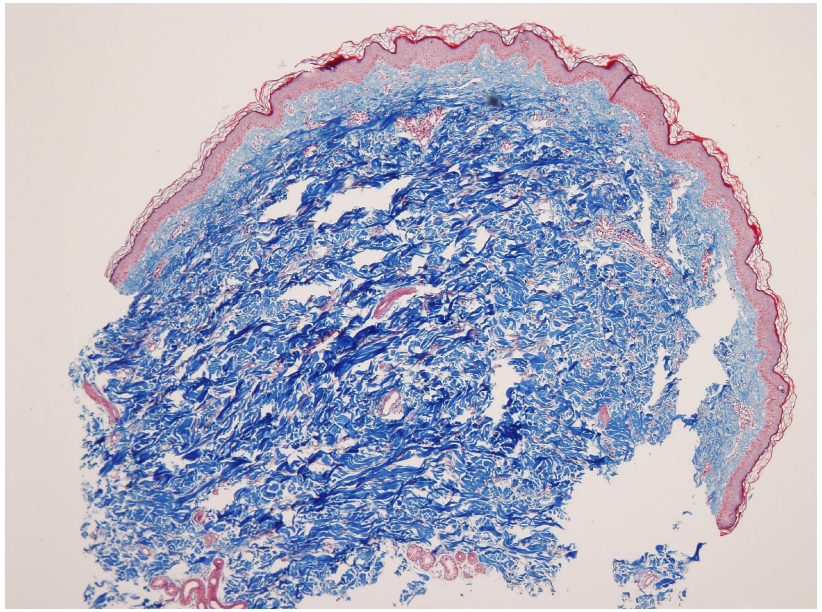
Day 2 Post-Treatment



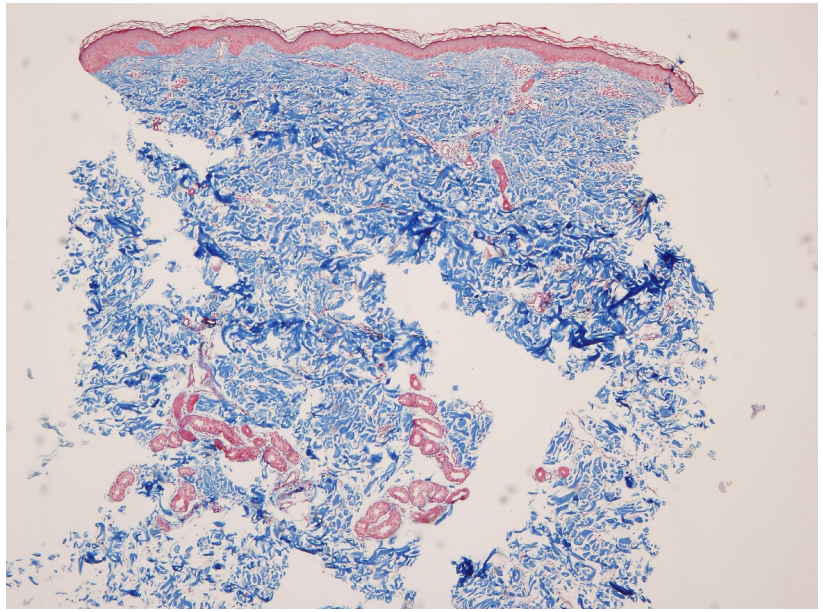
case 1

Day 3 Post-Treatment

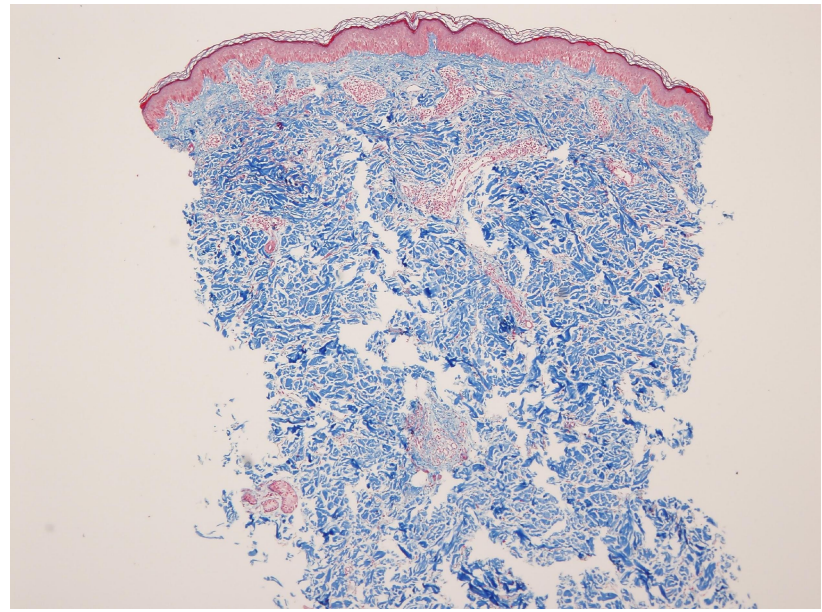
case 1



D1

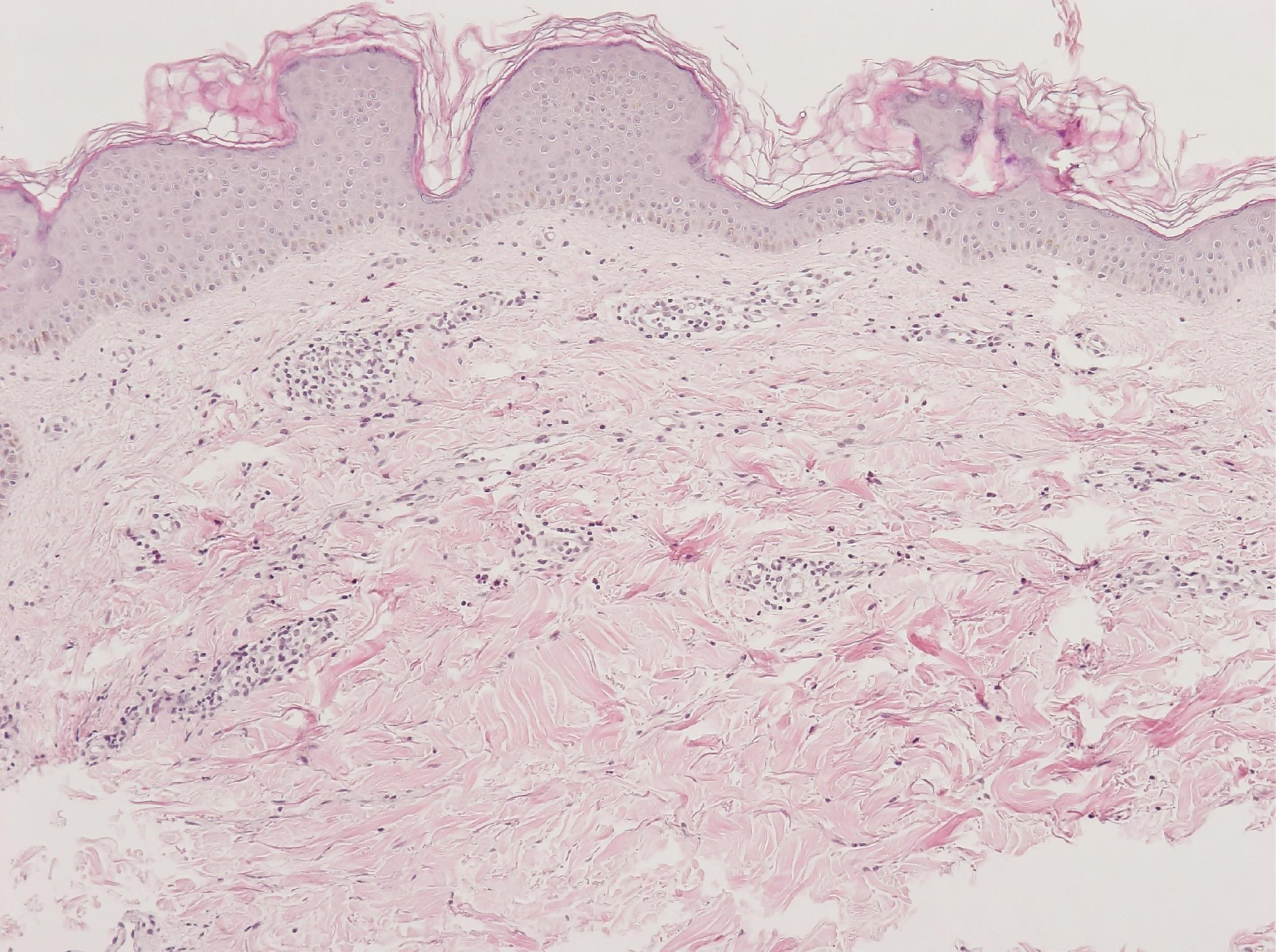


D2



D3

Case 2

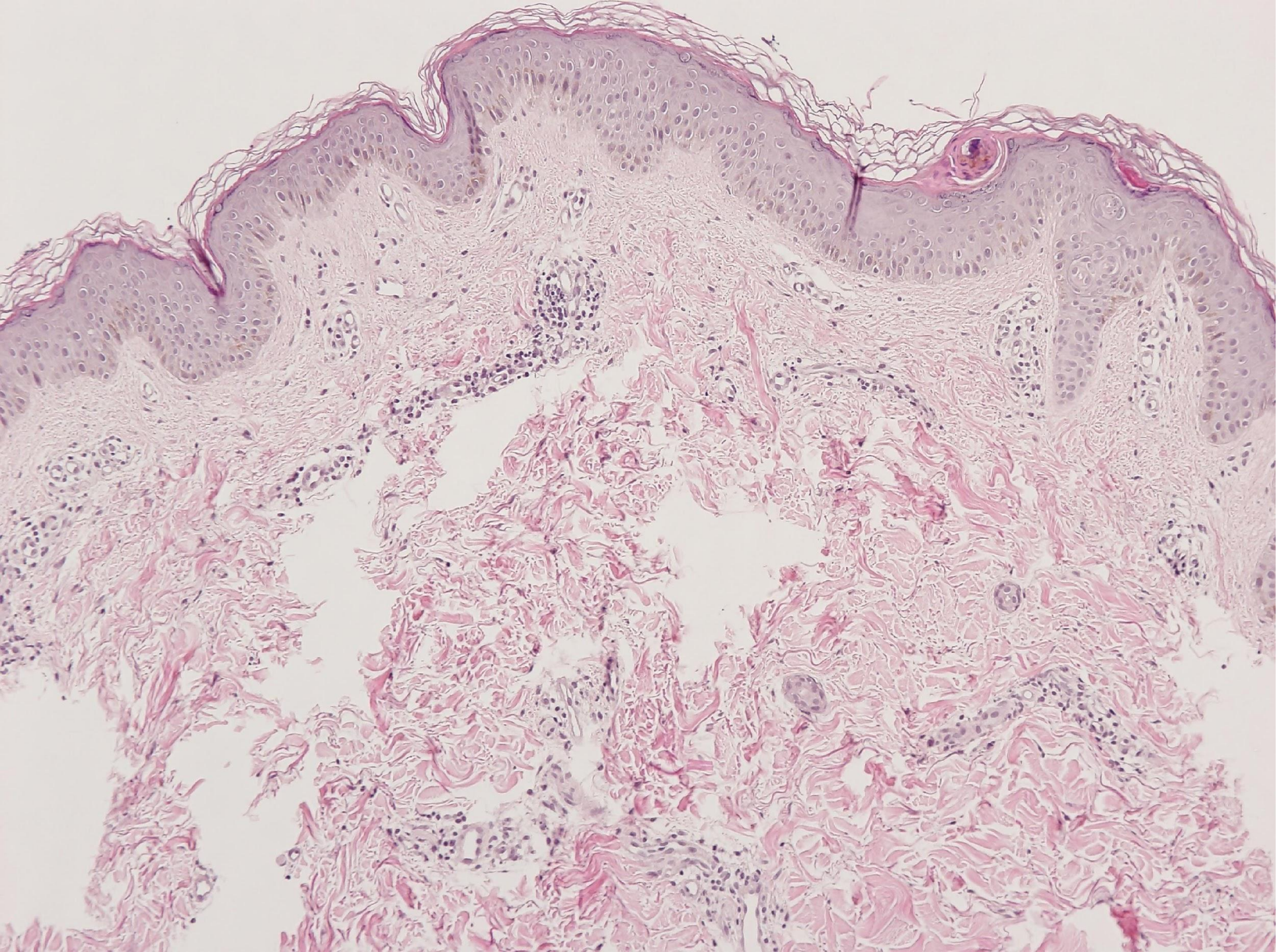


case 2

Day 1 Post-Treatment

Inflammatory cell infiltration is observed around blood vessels.

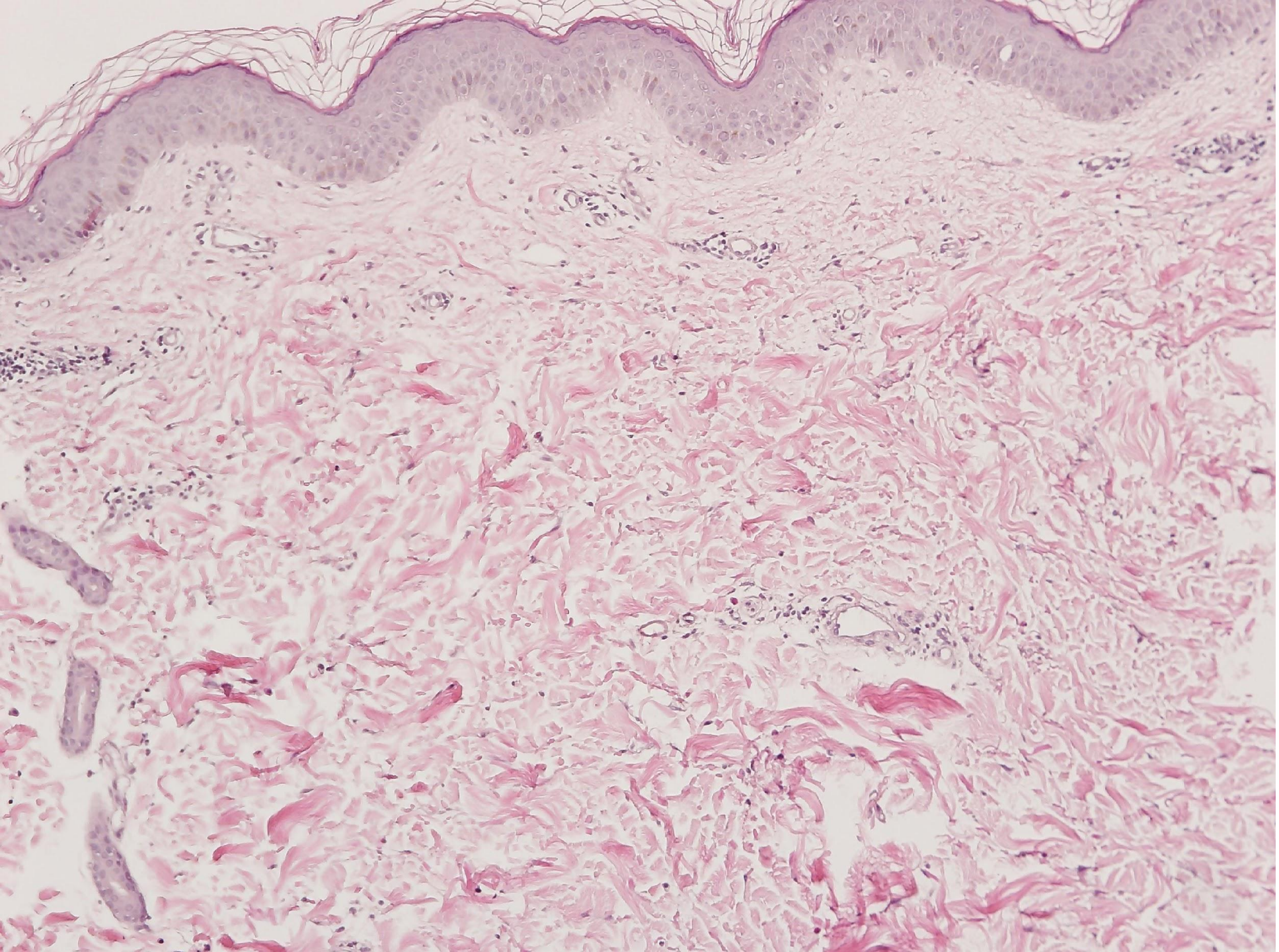
The infiltrate consists mainly of lymphocytes, with eosinophils also observed, similar to Case 1.



case 2

Day 2 Post-Treatment

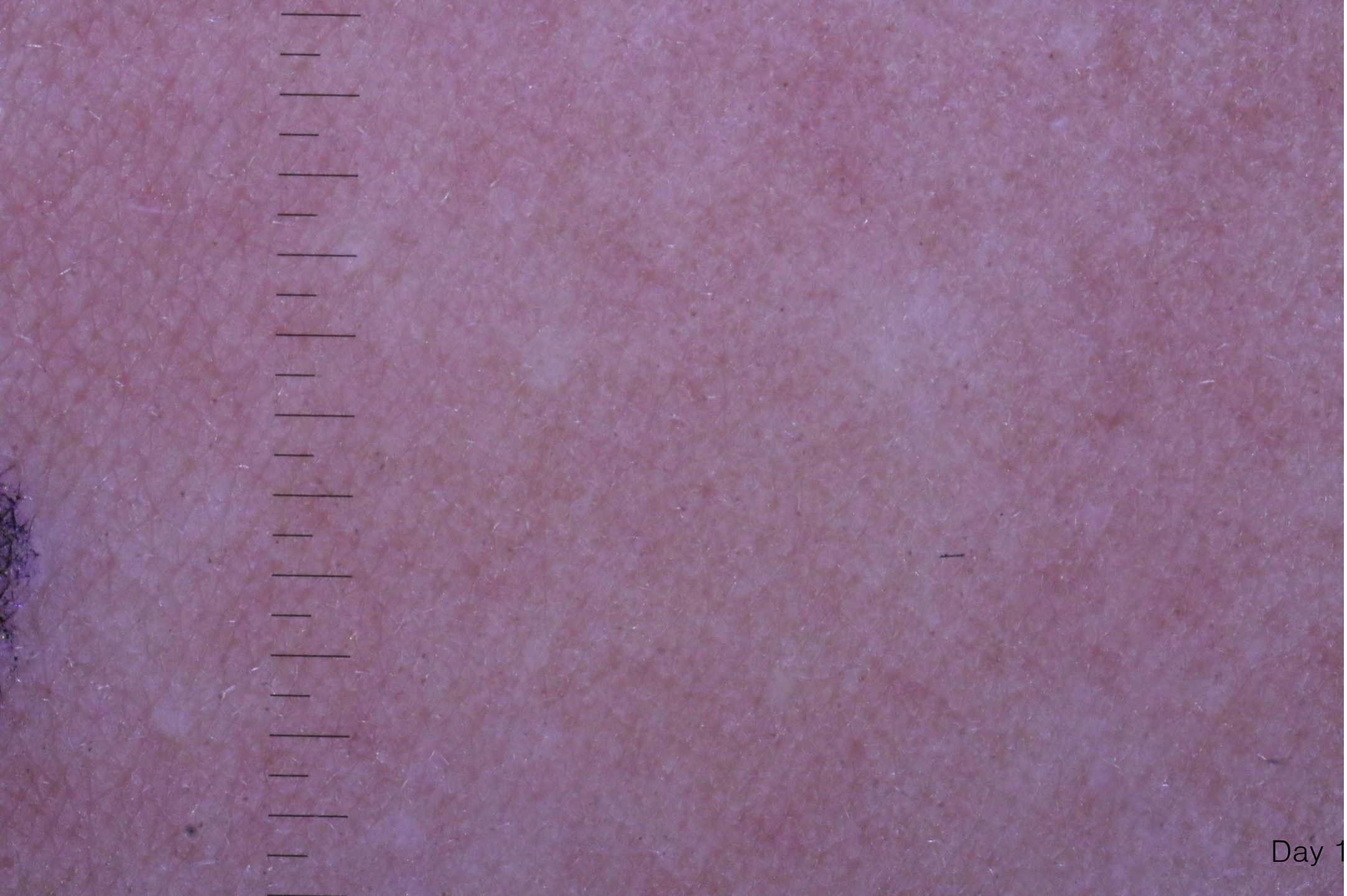
Some spicules remain visible on day 2 for this case



case 2

Day 3 Post-Treatment

Inflammatory cell infiltration is markedly reduced compared to Day 2.

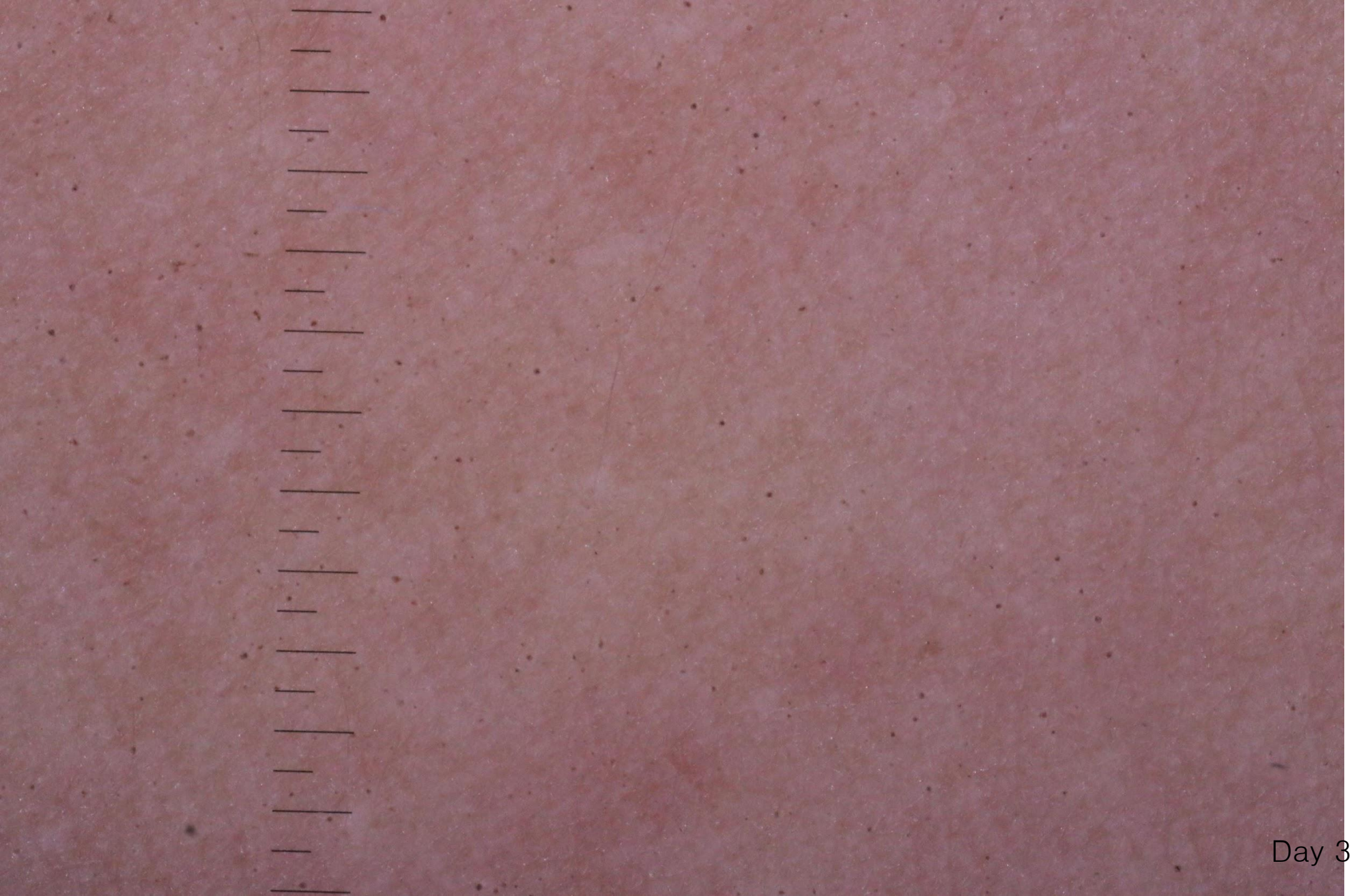


case 2

Day 1 Post-Treatment

case 2

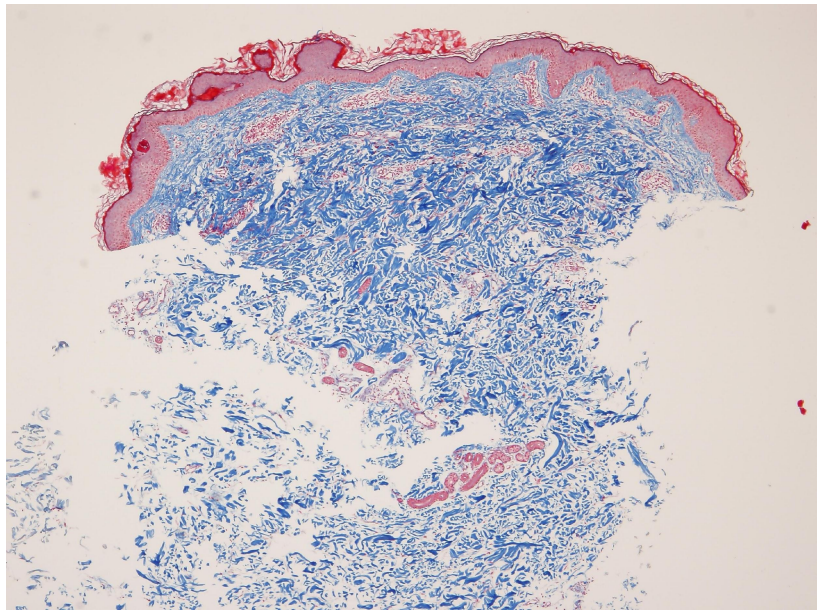
Day 2 Post-Treatment



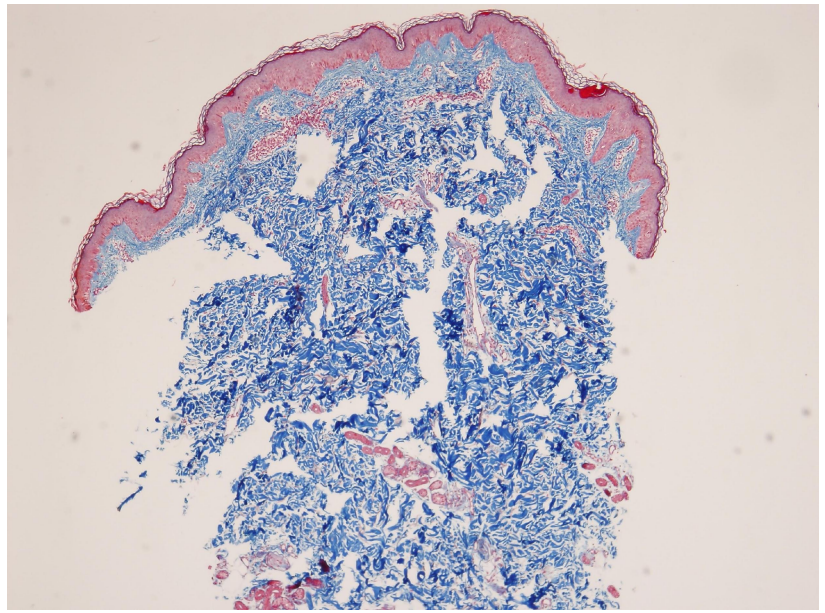
case 2

Day 3 Post-Treatment

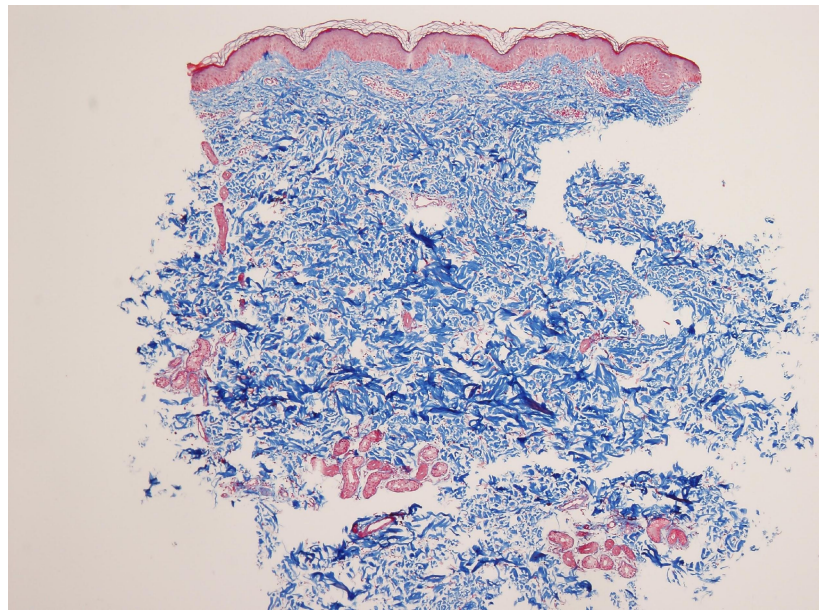
case 2



D1

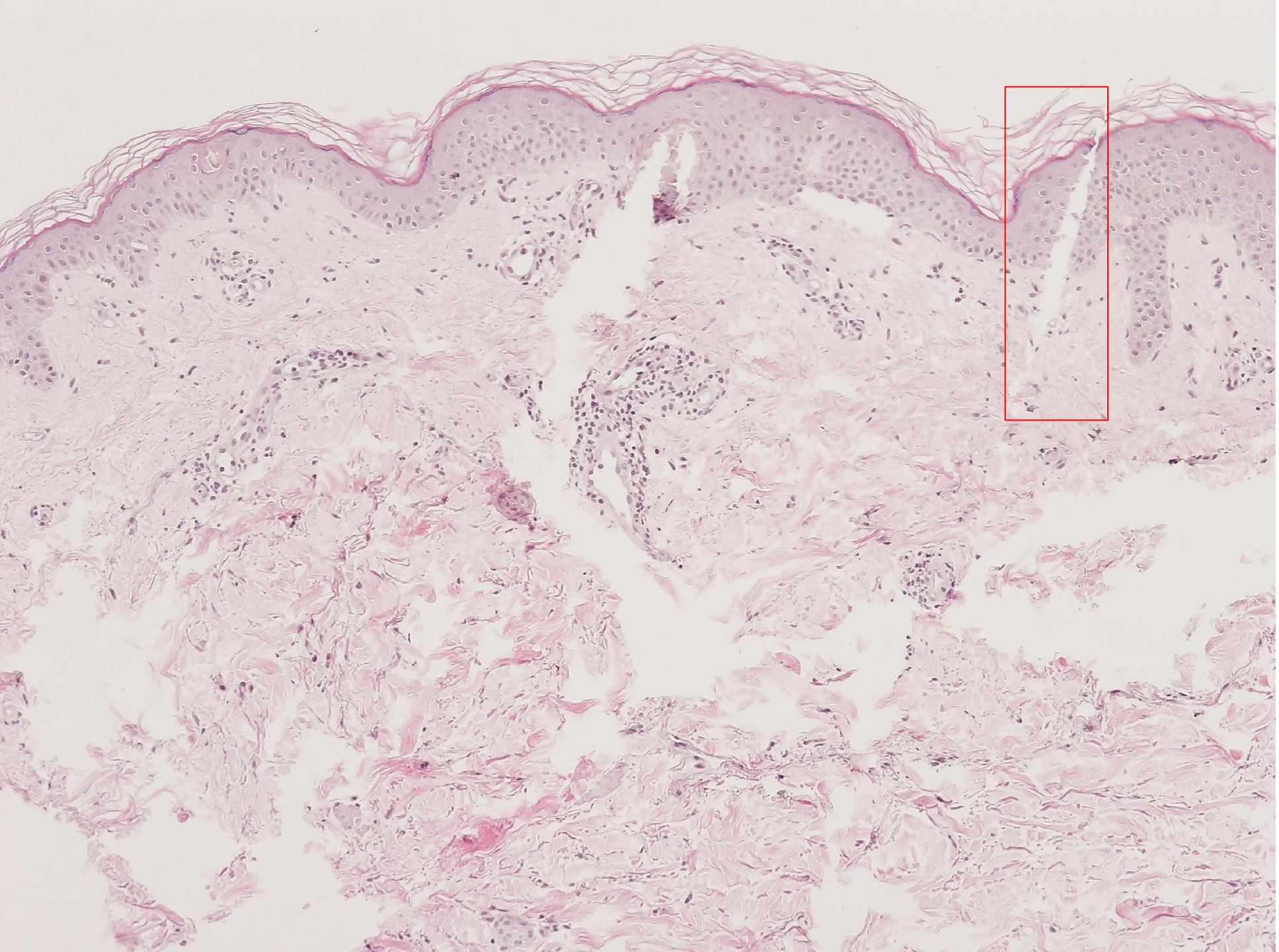


D2



D3

Case 3

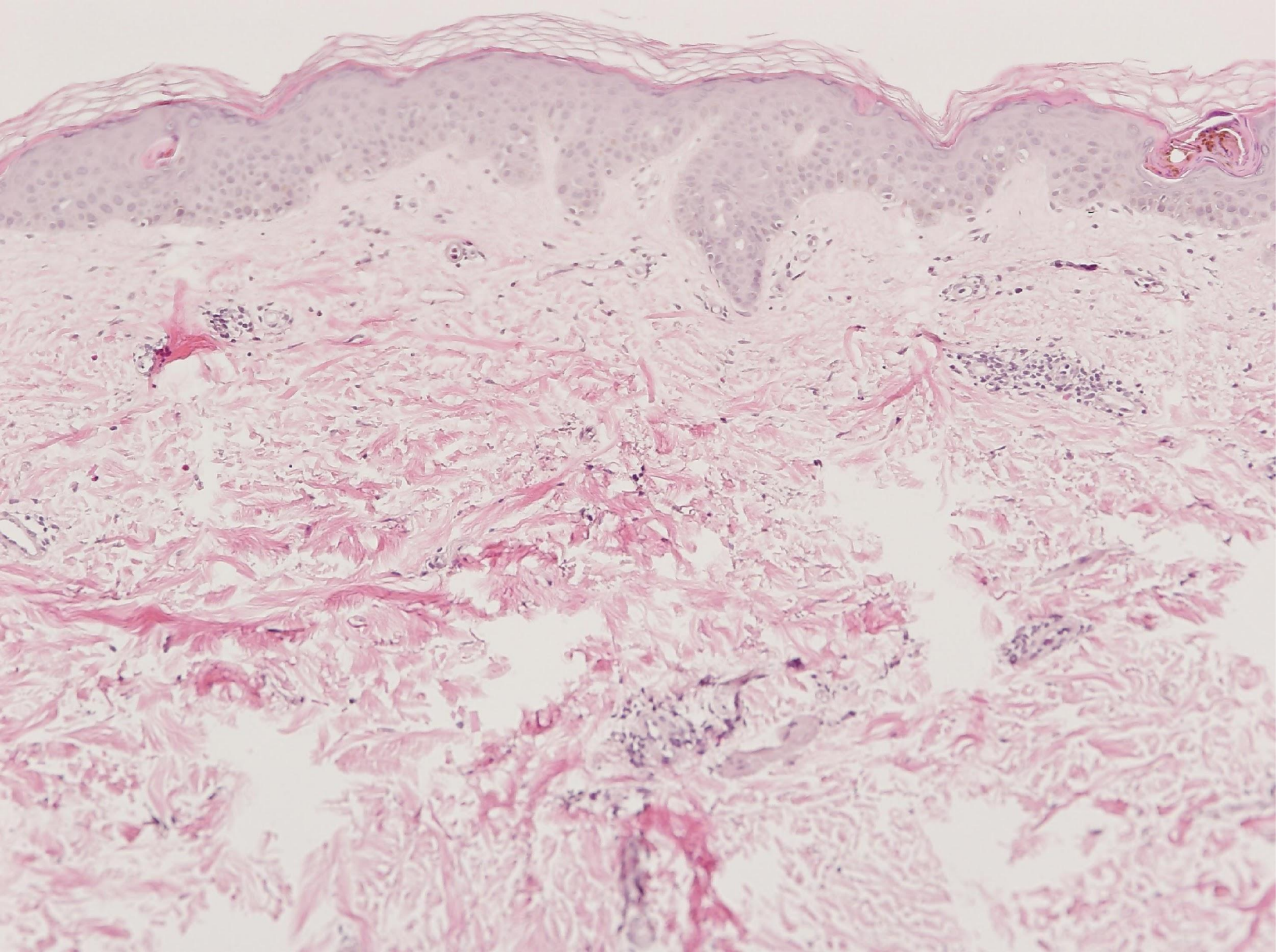


case 3

Day 1 Post-Treatment

Inflammatory cell infiltration is observed around blood vessels and consists mainly of lymphocytes.
Unlike the previous two cases, eosinophil infiltration is not clearly observed.

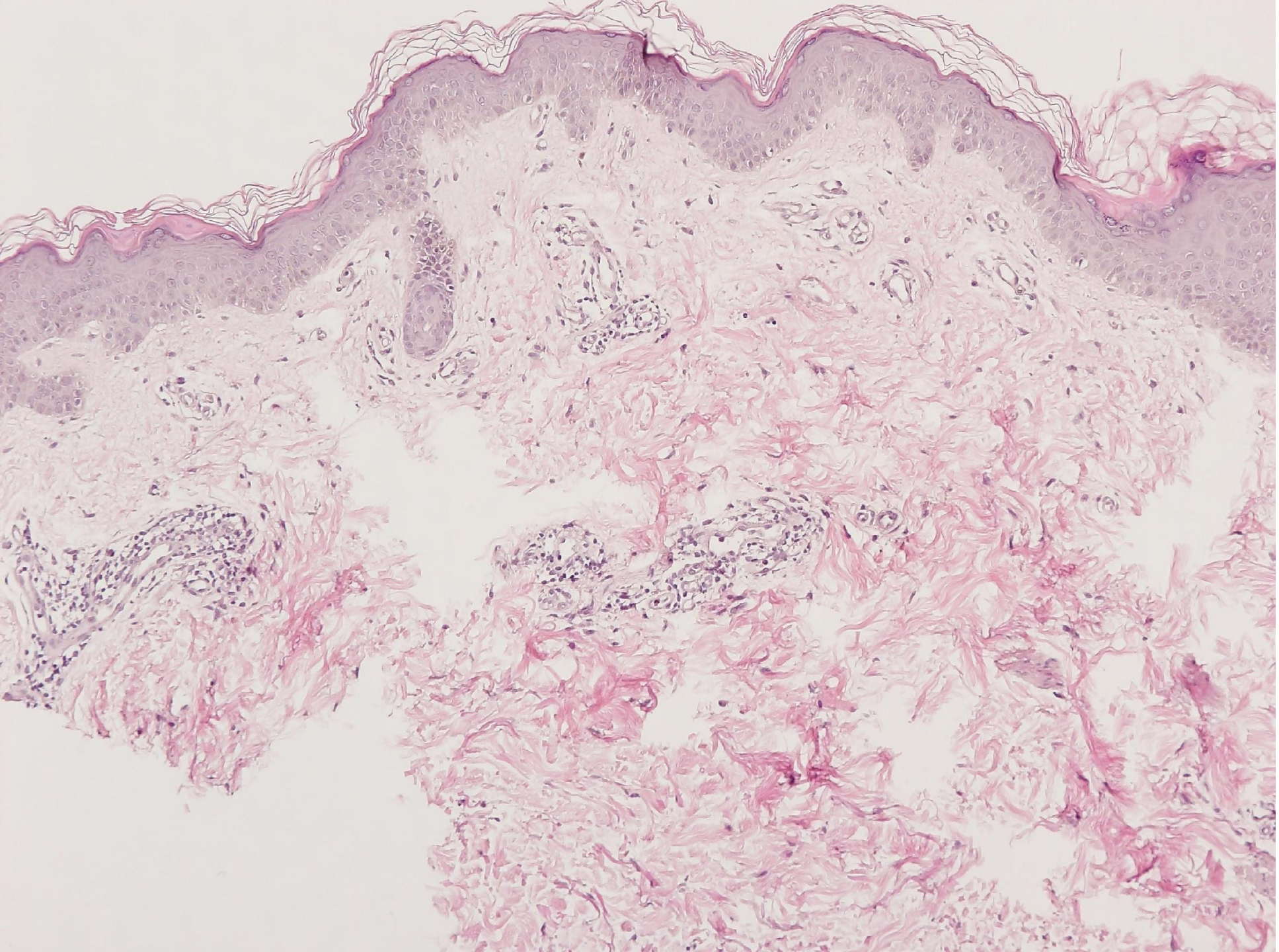
Column-like structures formed by spicules are observed extending through the full thickness of the epidermis.



case 3

Day 2 Post-Treatment

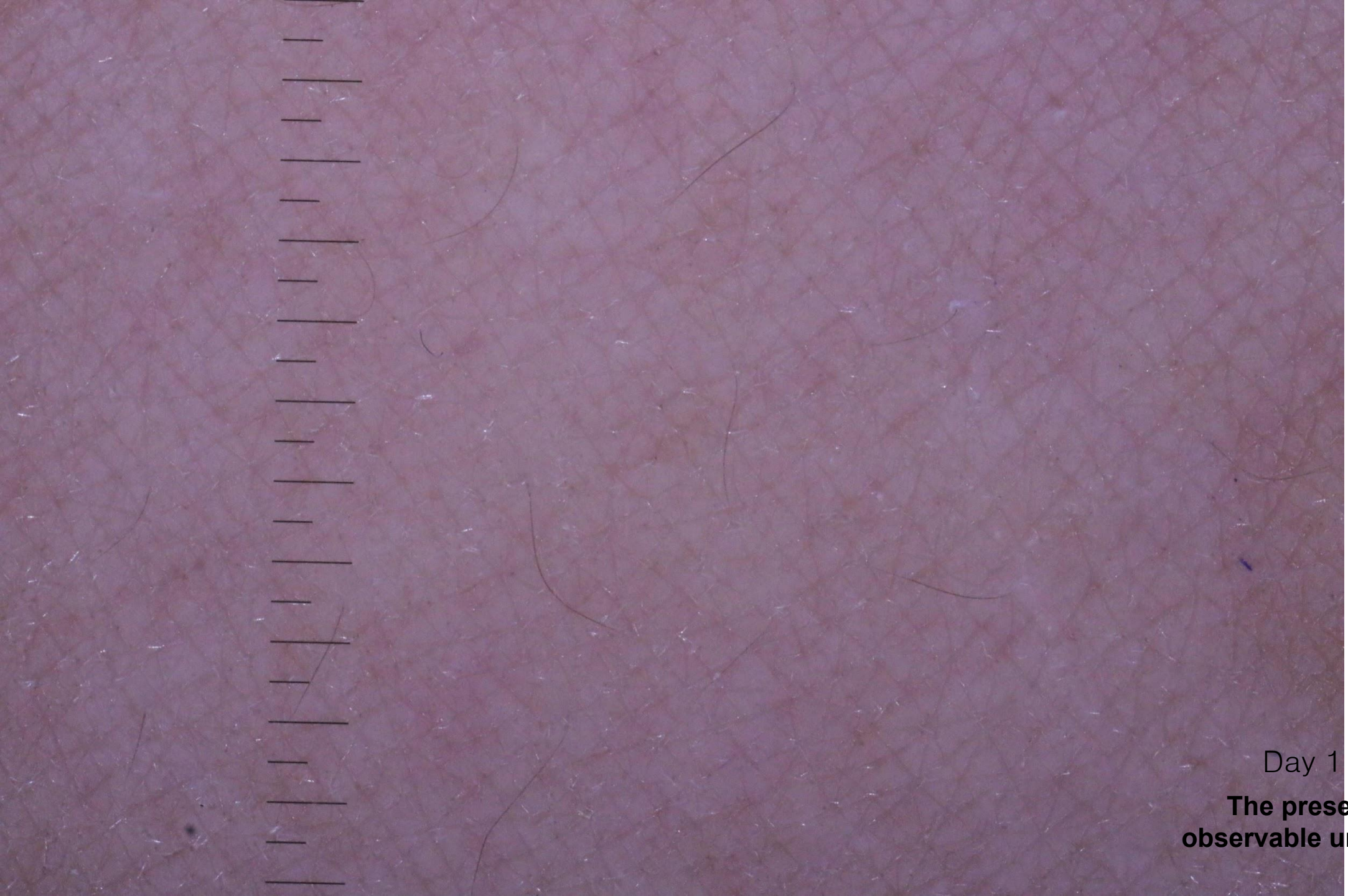
The degree of inflammatory cell infiltration is reduced compared to Day 1.



case 3

Day 3 Post-Treatment

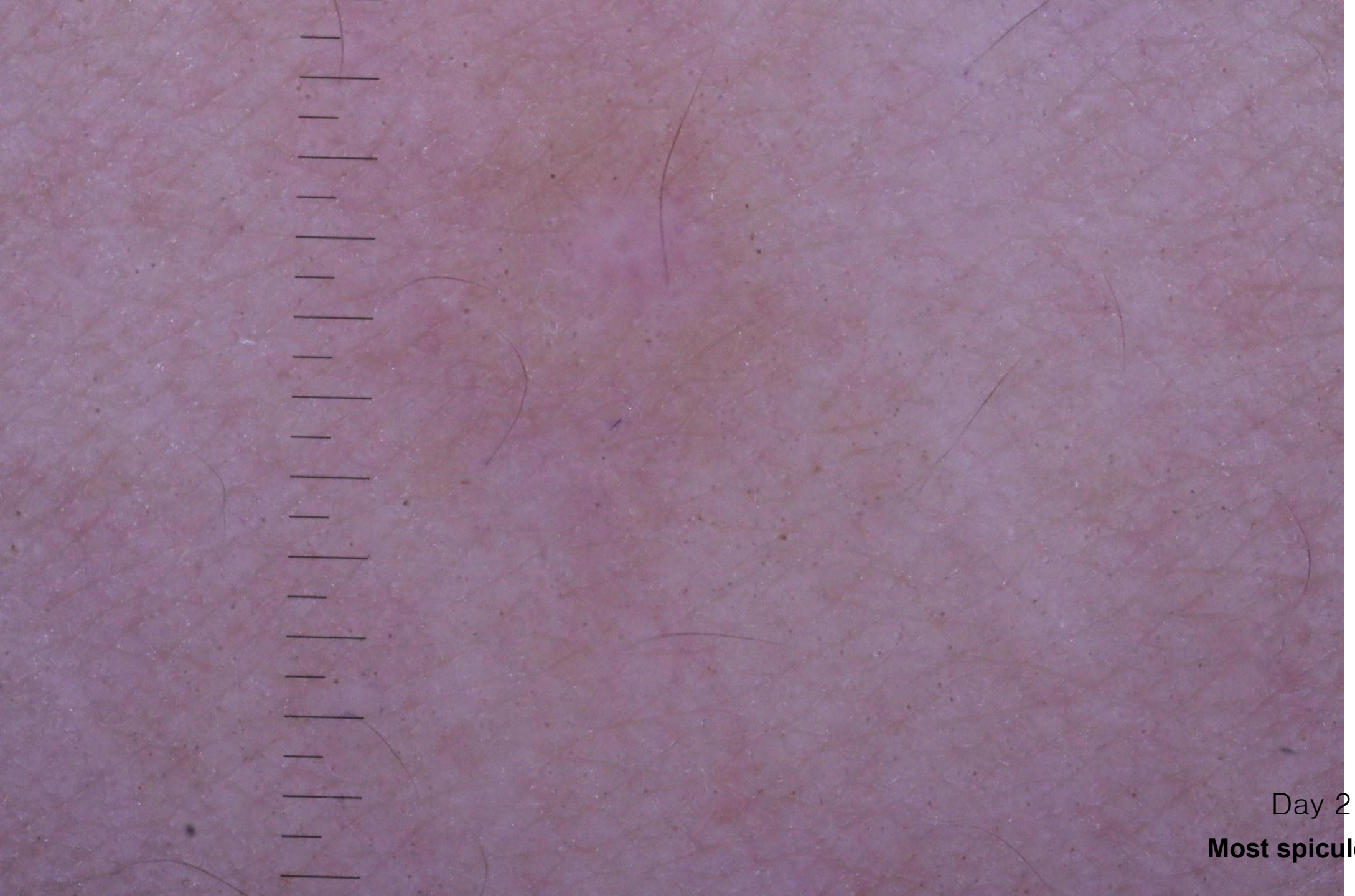
Mild inflammatory cell infiltration is observed.



case 3

Day 1 Post-Treatment

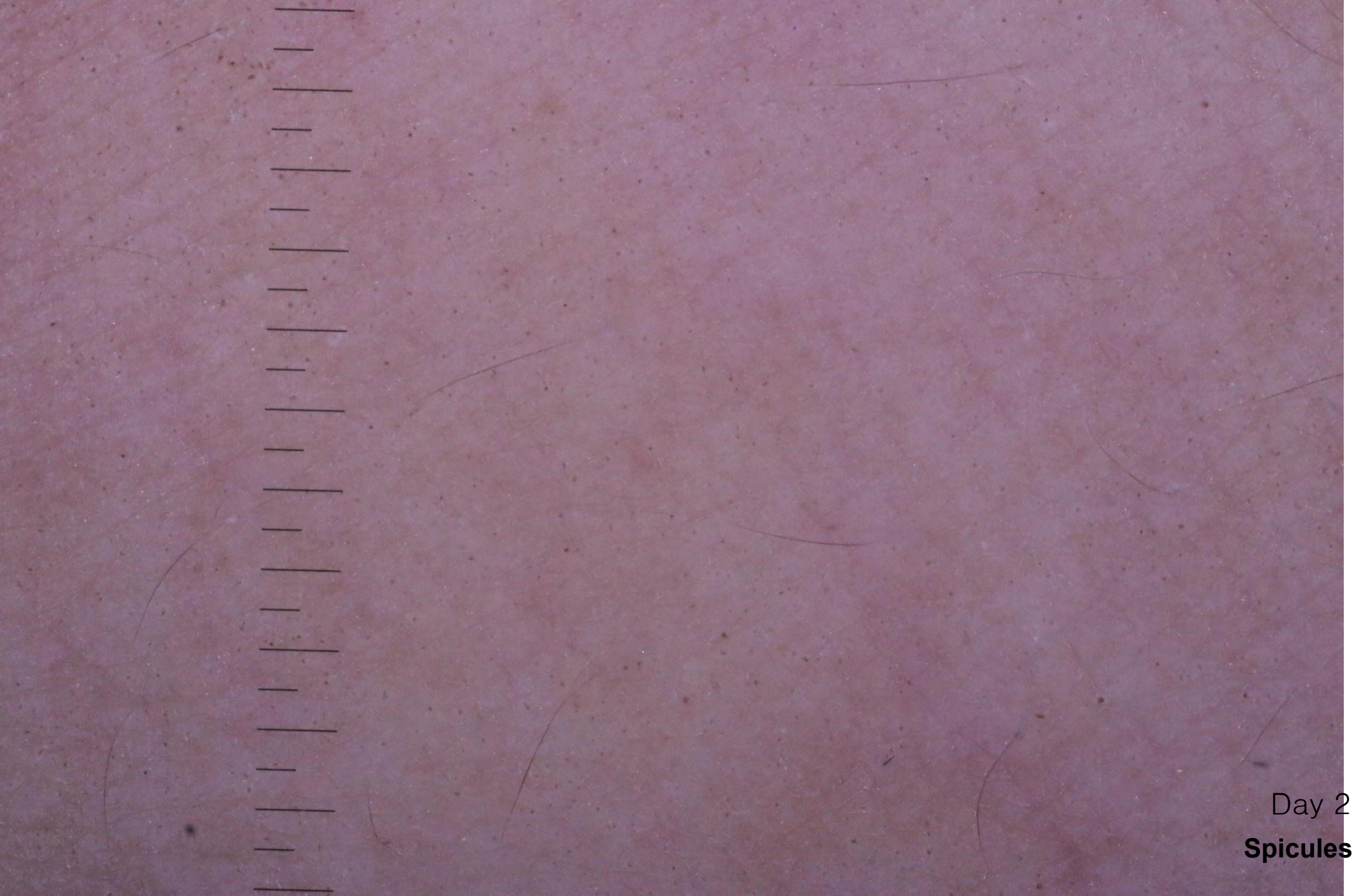
The presence of spicules is observable under dermoscopy.



case 3

Day 2 Post-Treatment

Most spicules have detached.

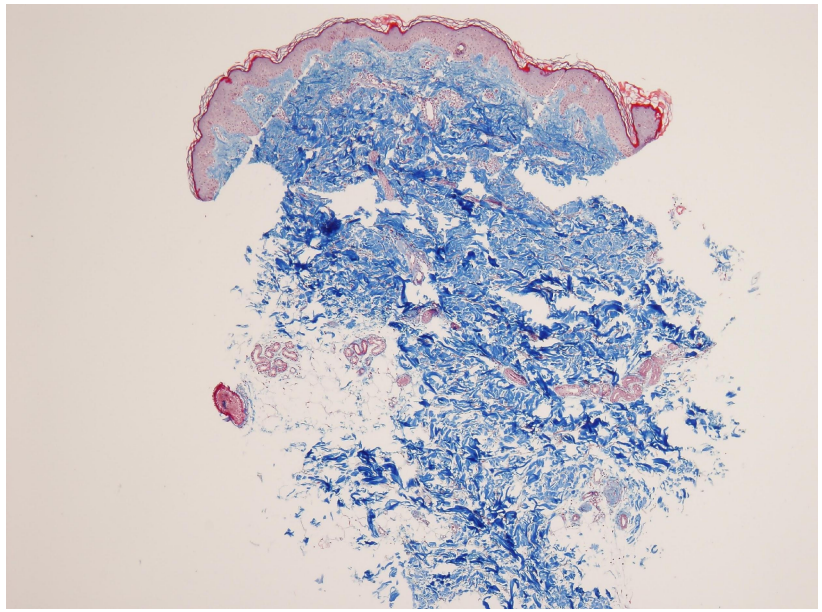


case 3

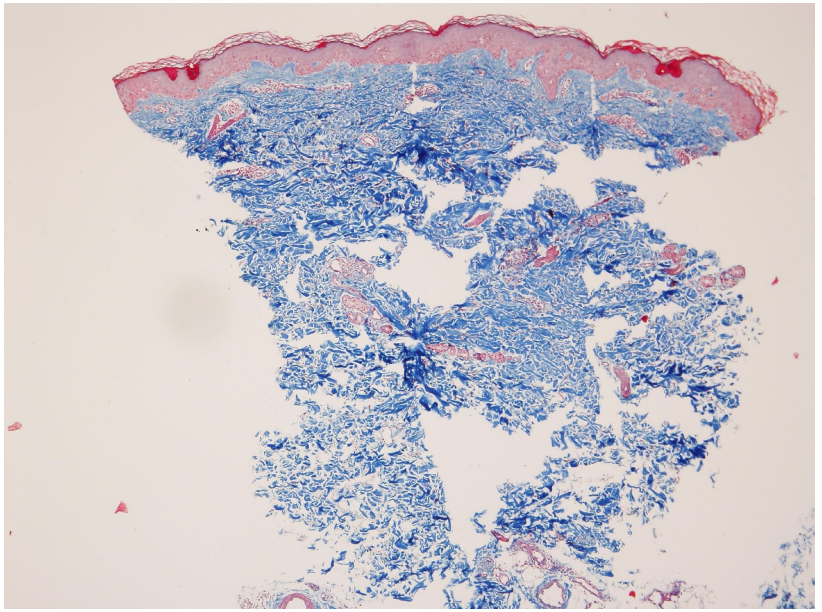
Day 2 Post-Treatment

Spicules are not observed.

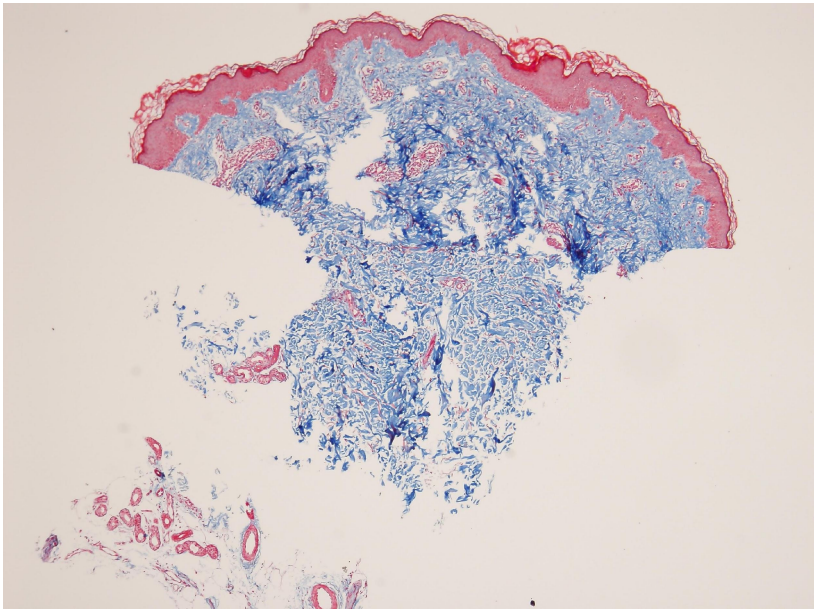
case 3



D1



D2



D3

Conclusion

1. **Spicules are mostly shed within 3 days.**
   Spicules are observed within the epidermis at Day 1 post-treatment.
   By approximately Day 3 post-treatment, most spicules are shed.

2. **Inflammatory response**
   Following PEPTAXEL® treatment, inflammatory cell infiltration is observed around blood vessels.
   The infiltrate is predominantly composed of lymphocytes, with eosinophils observed in some subjects.

3. **Transient inflammatory response**
   The inflammatory response gradually decreases over time and is reduced to a mild level by Day 3 post-treatment.

4. **Dermoscopic findings**
   The presence of spicules can be confirmed by dermoscopy, appearing as bright, needle-like structures.

5. **Epidermal channels and drug delivery**
   Spicules penetrated to the end of the epidermis, creating channels that support effective drug delivery.
   These channels naturally close as part of the skin’s normal recovery process.

6. **Low risk of Granuloma and Adhesion**
   Clinical observations confirmed that spicules in participants reached the epidermis–basal membrane. As long as spicules remain within the epidermis, the risk of granuloma formation is low. Continuous epidermal renewal allows most spicules to be naturally shed. Follow-up tracking of participants showed no evidence of adverse tissue reactions or discomfort.