New Observations Hair and Nail Pathology in the Last Year

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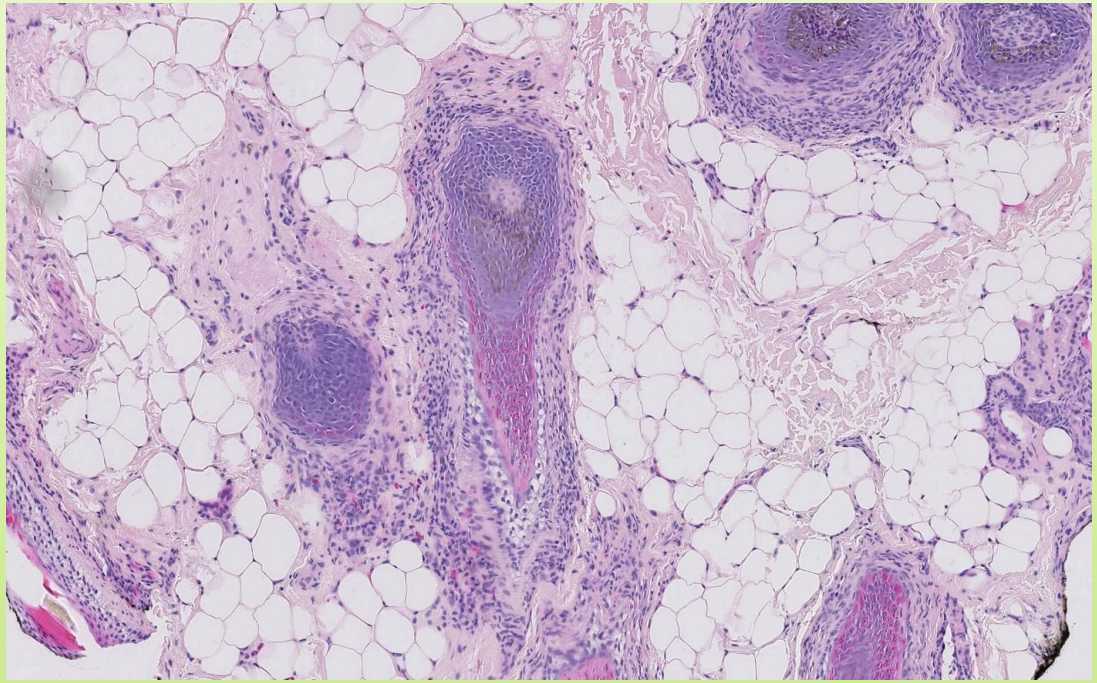
TO DOS

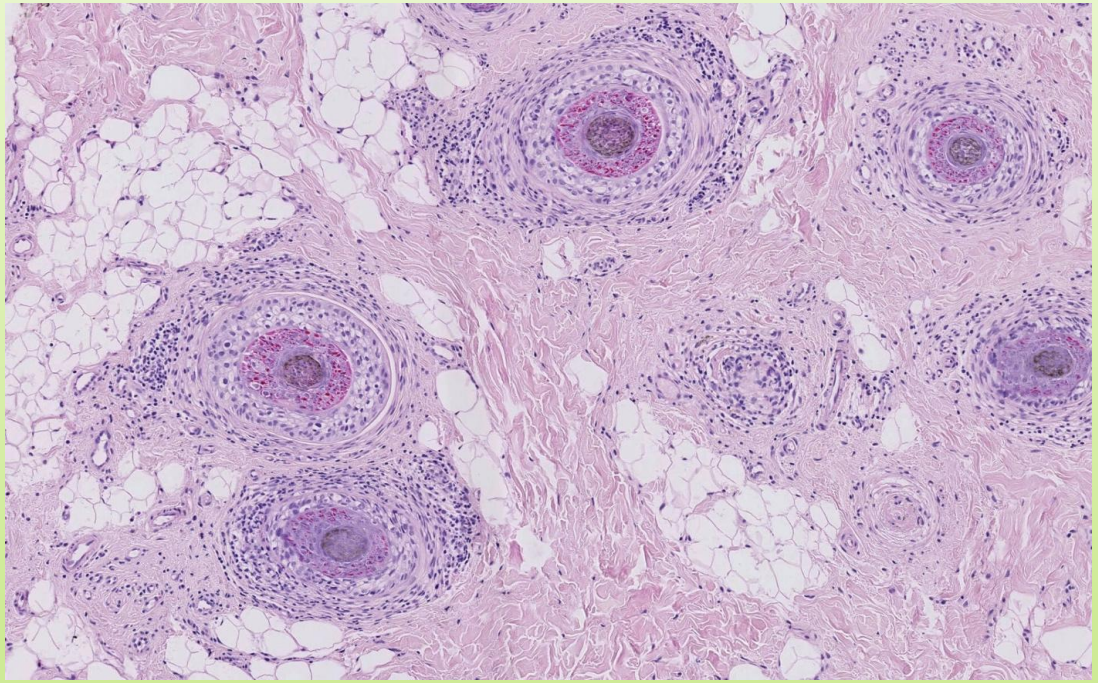
- CD13 publication from Dong
- Photos
- FD myeloperoxidase ORDERED 14638   use 17047 is that doesn't work.

Alopecia Areata-Like Pattern

- Important to prevent misdiagnosis
- New, unifying concept of alopecia classification based upon **hair follicle immunology and follicular cell kinetics** rather than the nature of the inflammatory cell infiltrate

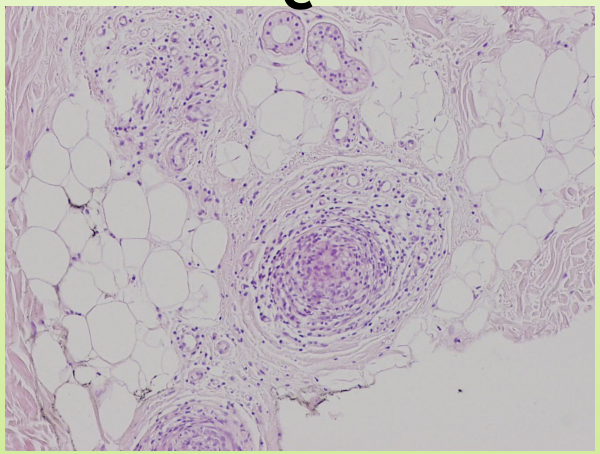
Acute Alopecia Areata





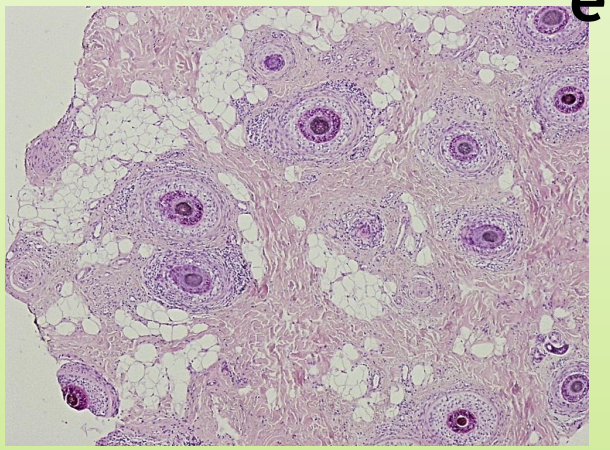
Alopecia Areata

Acute

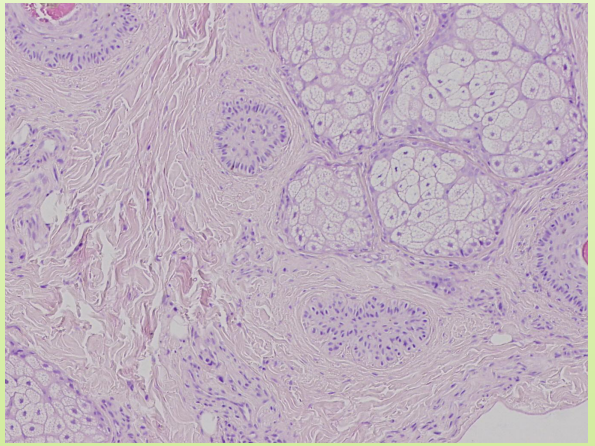


Peribulbar lymphocytic infiltrate

Subacute

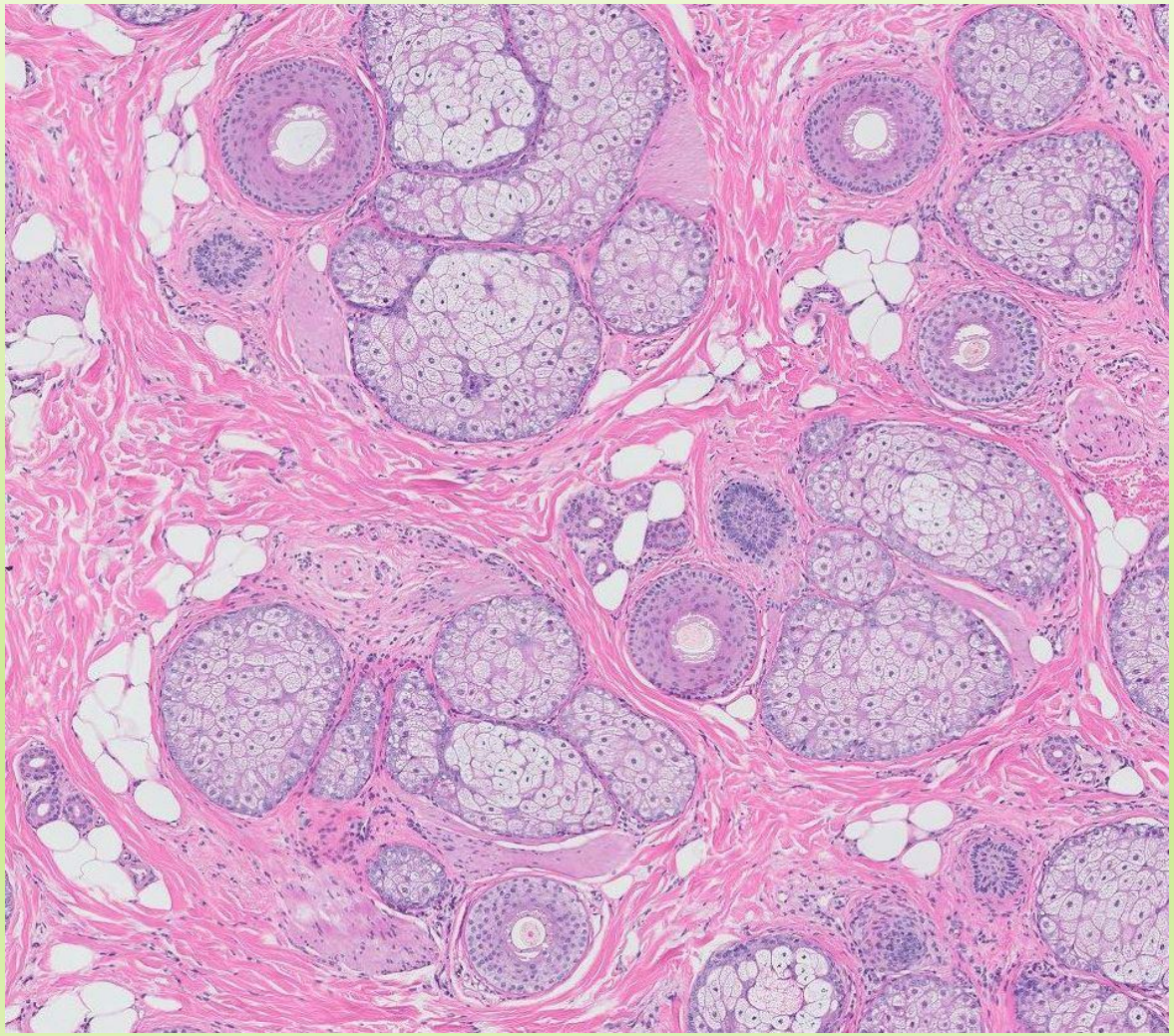


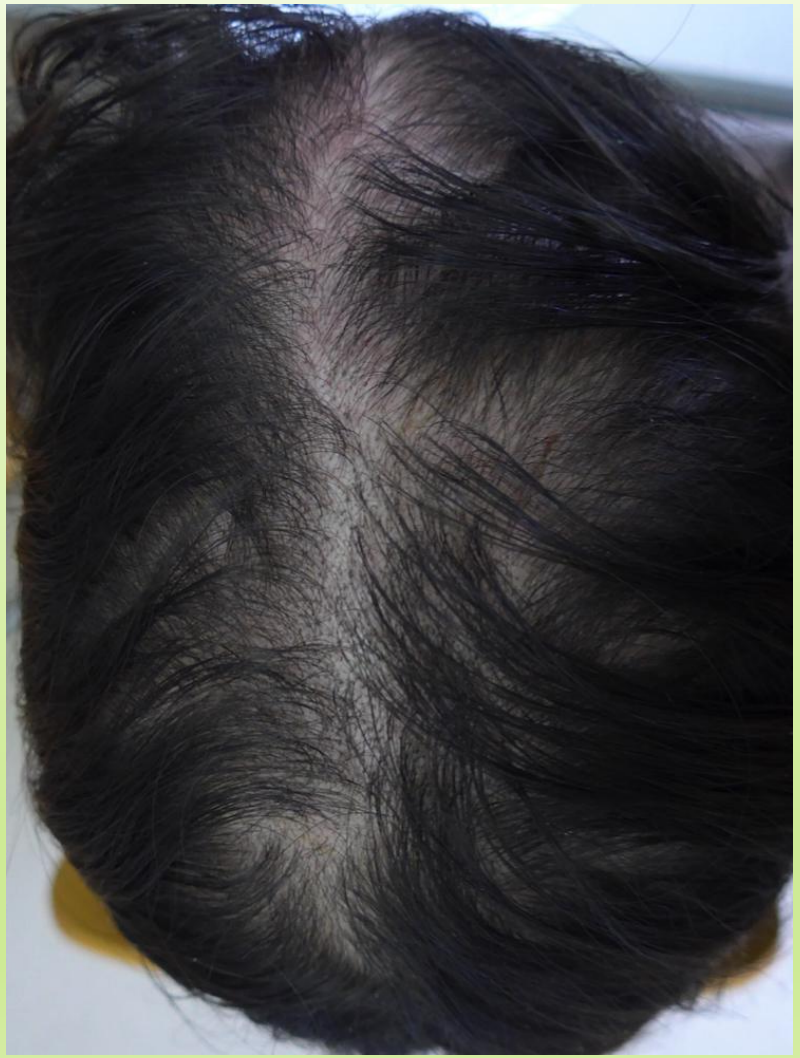
Marked Follicular Miniaturization T:V≤1:7

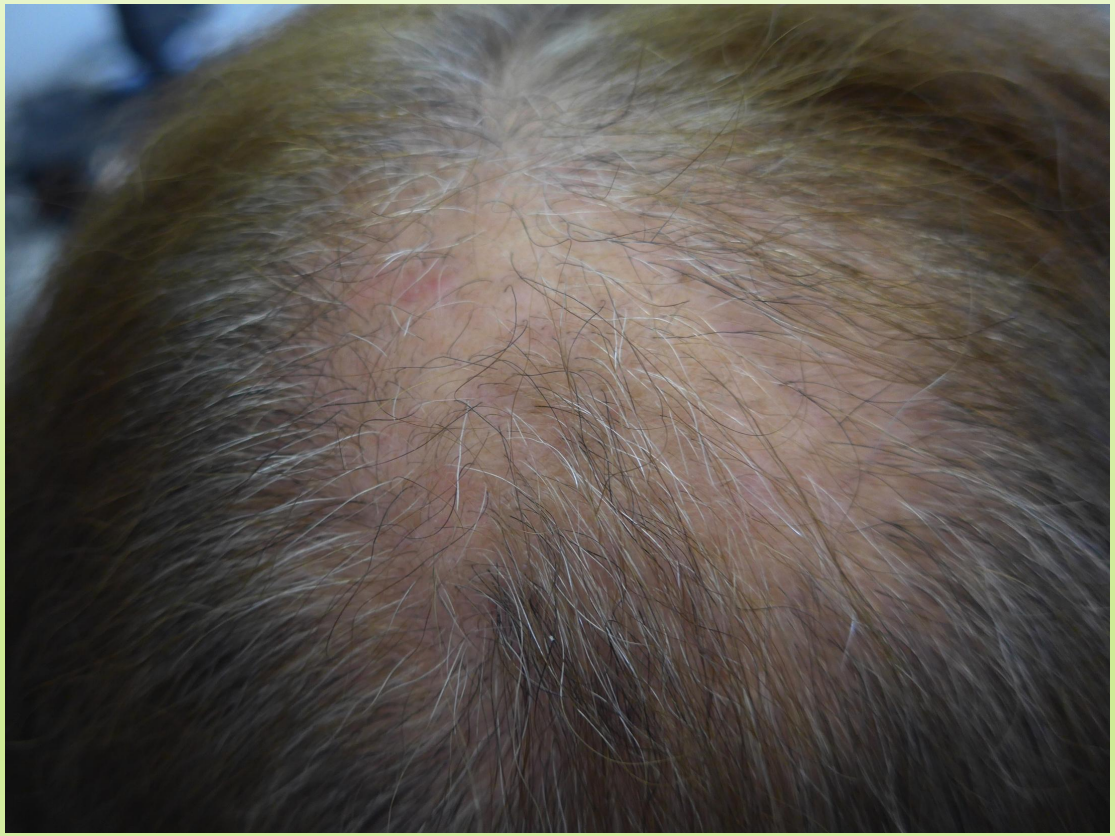


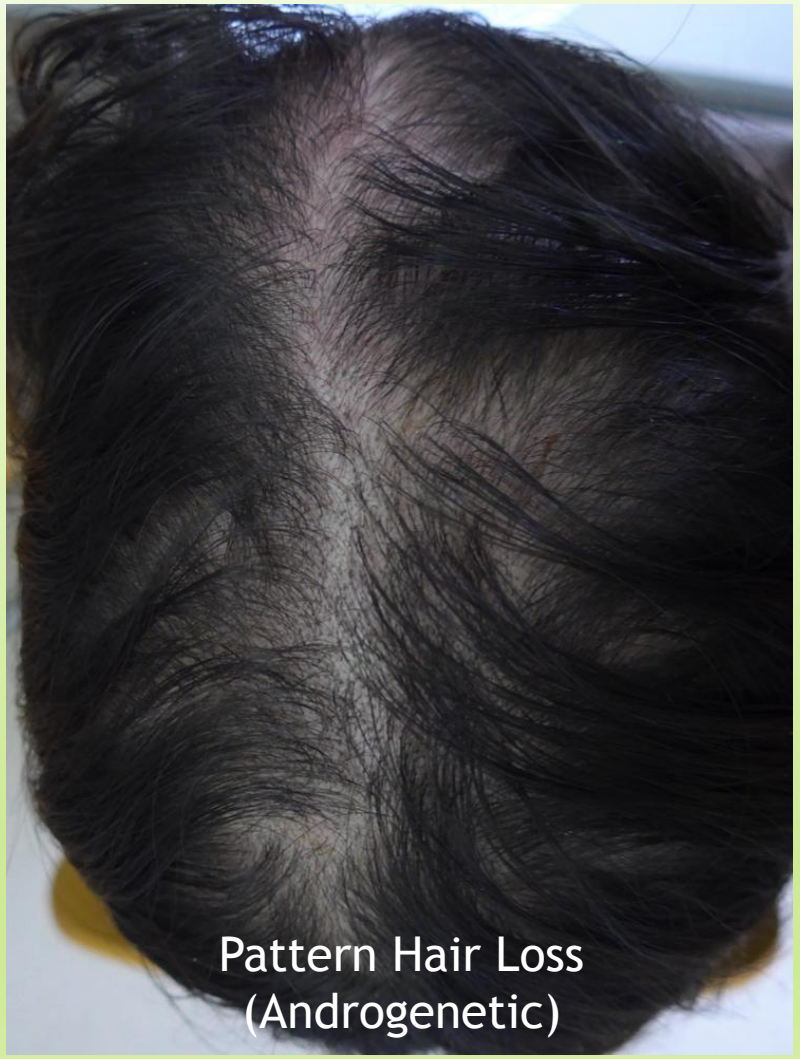
Dramatic Catagen/telogen Shift CT hair ≥50%

Subacute Alopecia Areata

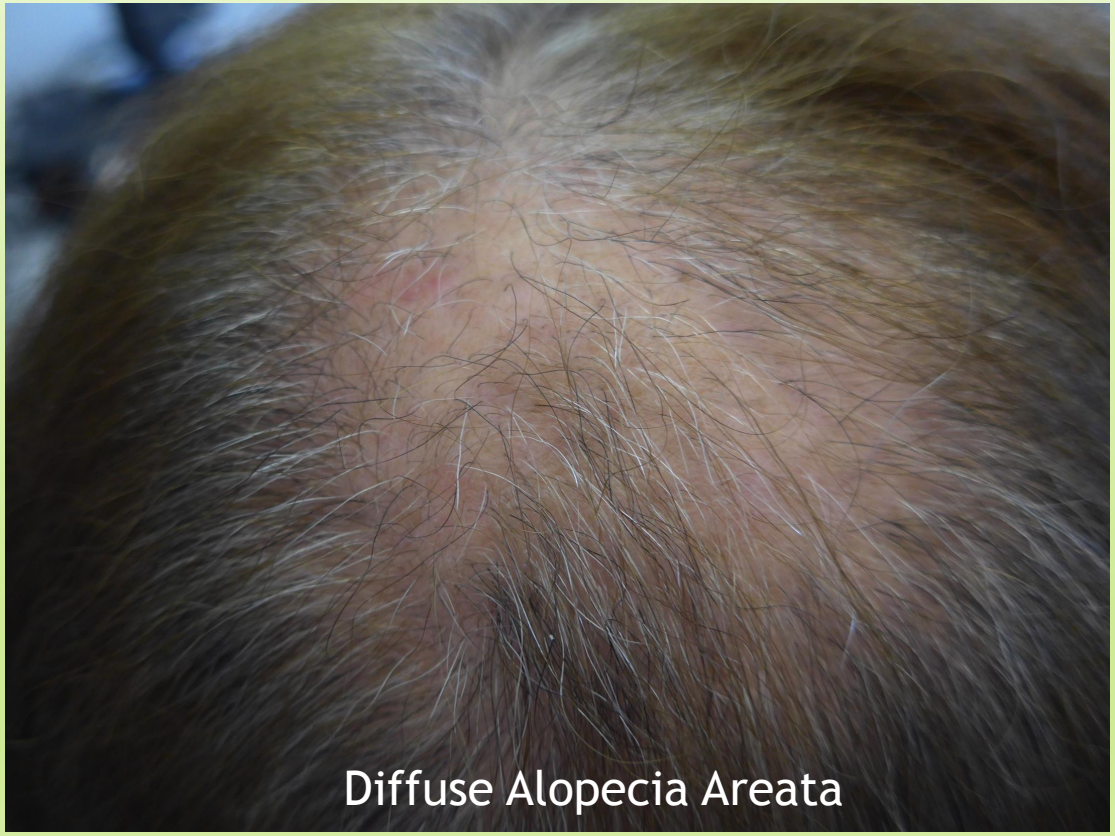




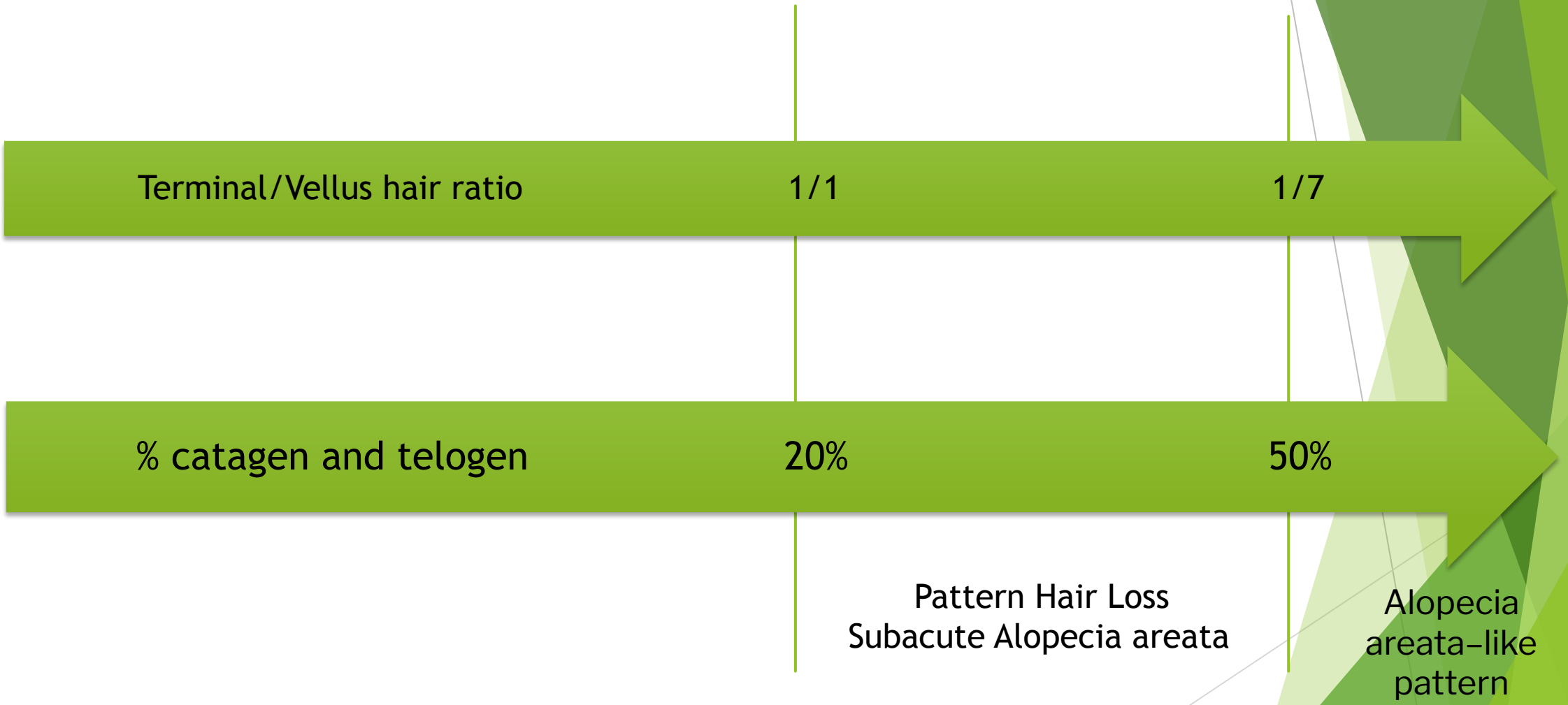




Pattern Hair Loss
(Androgenetic)



Diffuse Alopecia Areata


Terminal/Vellus hair ratio
1/1
1/7
% catagen and telogen
20%
50%
Pattern Hair Loss
Subacute Alopecia areata
Alopecia areata–like pattern

	Pattern hair loss (androgenetic)	Subacute Alopecia areata	Alopcia areata-like pattern
Terminal/Vellus hair ratio	Decreased	Decreased	Decreased
% catagen and telogen hair	Increased	Increased	Increased

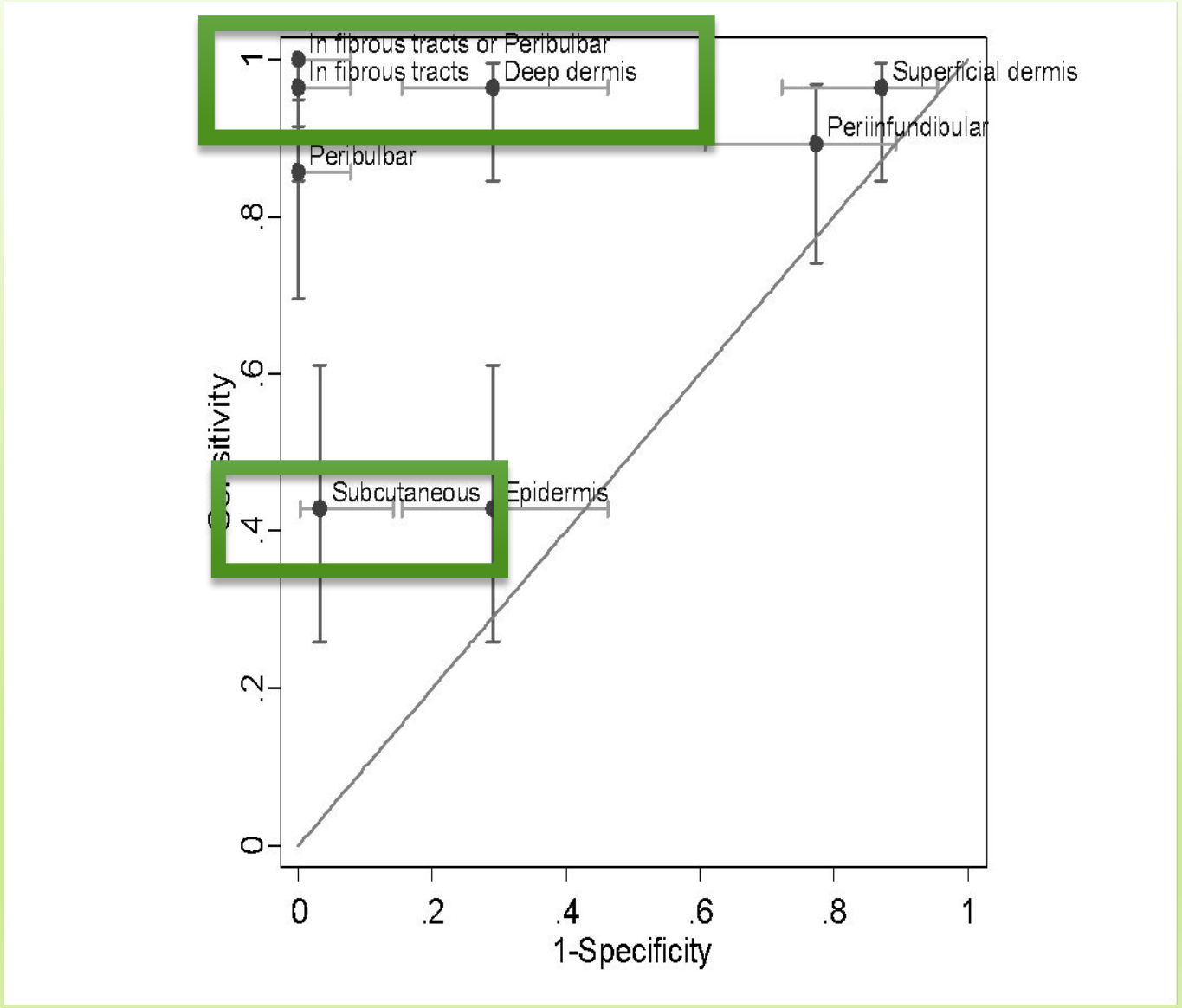
1. Elston DM, Ferringer T, Dalton S, Fillman E, Tyler W. A comparison of vertical versus transverse sections in the evaluation of alopecia biopsy specimens. *Journal of American Academy of Dermatology* 2005; 53: 267.
2. Wohltmann WE, Sperling LC. Histopathologic diagnosis of multifactorial alopecia. *Journal of Cutaneous Pathology* 2016; 43: 483.

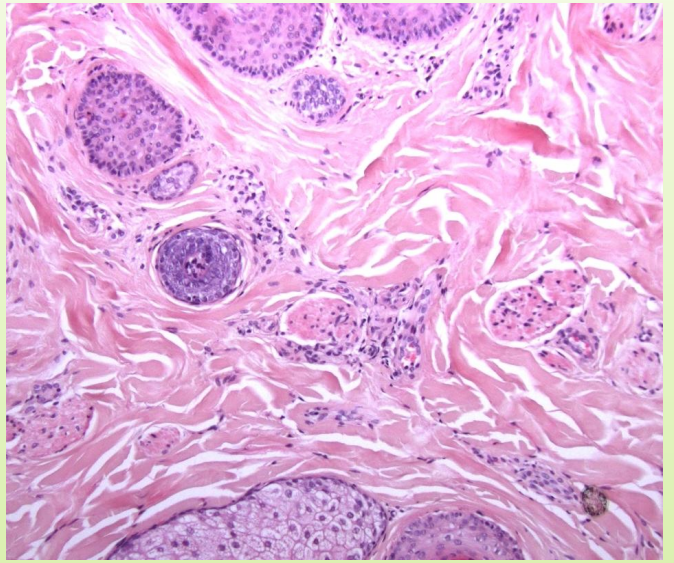
Kolivras A., Thompson C.

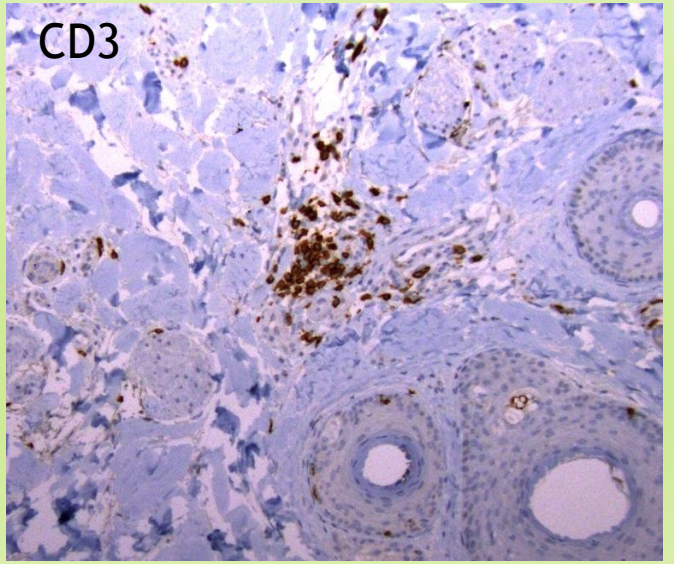
Distinguishing diffuse alopecia areata from pattern hair loss using CD3+ T cells.

Journal of American Academy of Dermatology 2016; 74: 937-44.

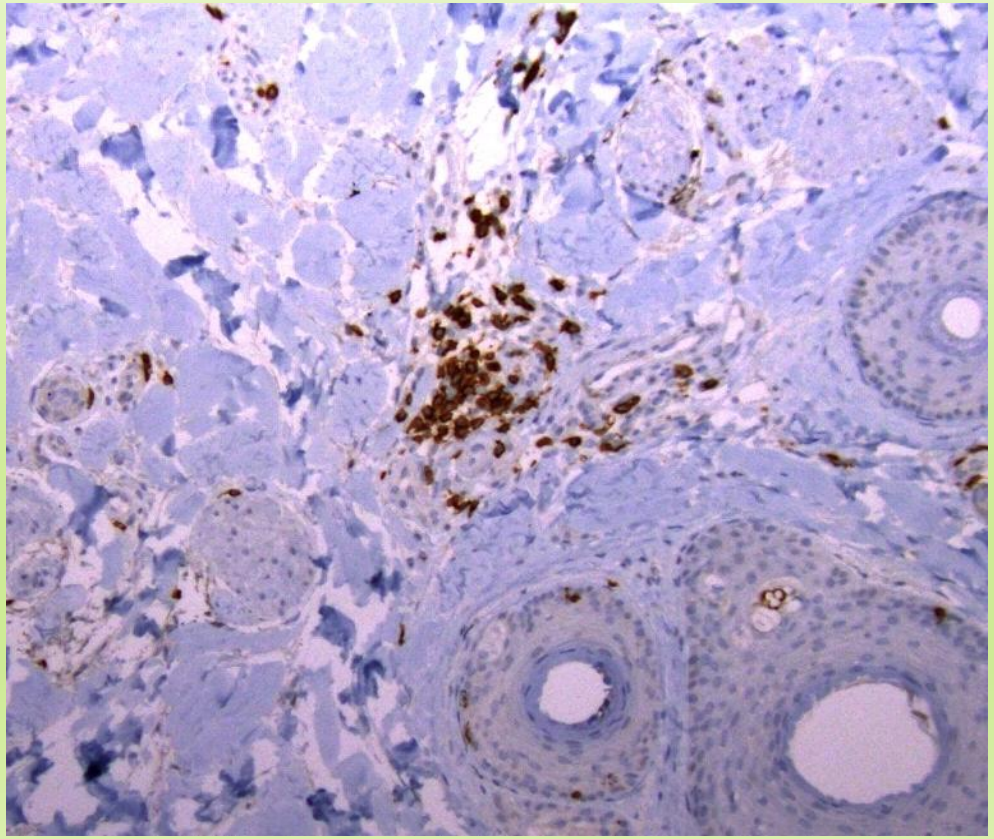
Alopecia areata

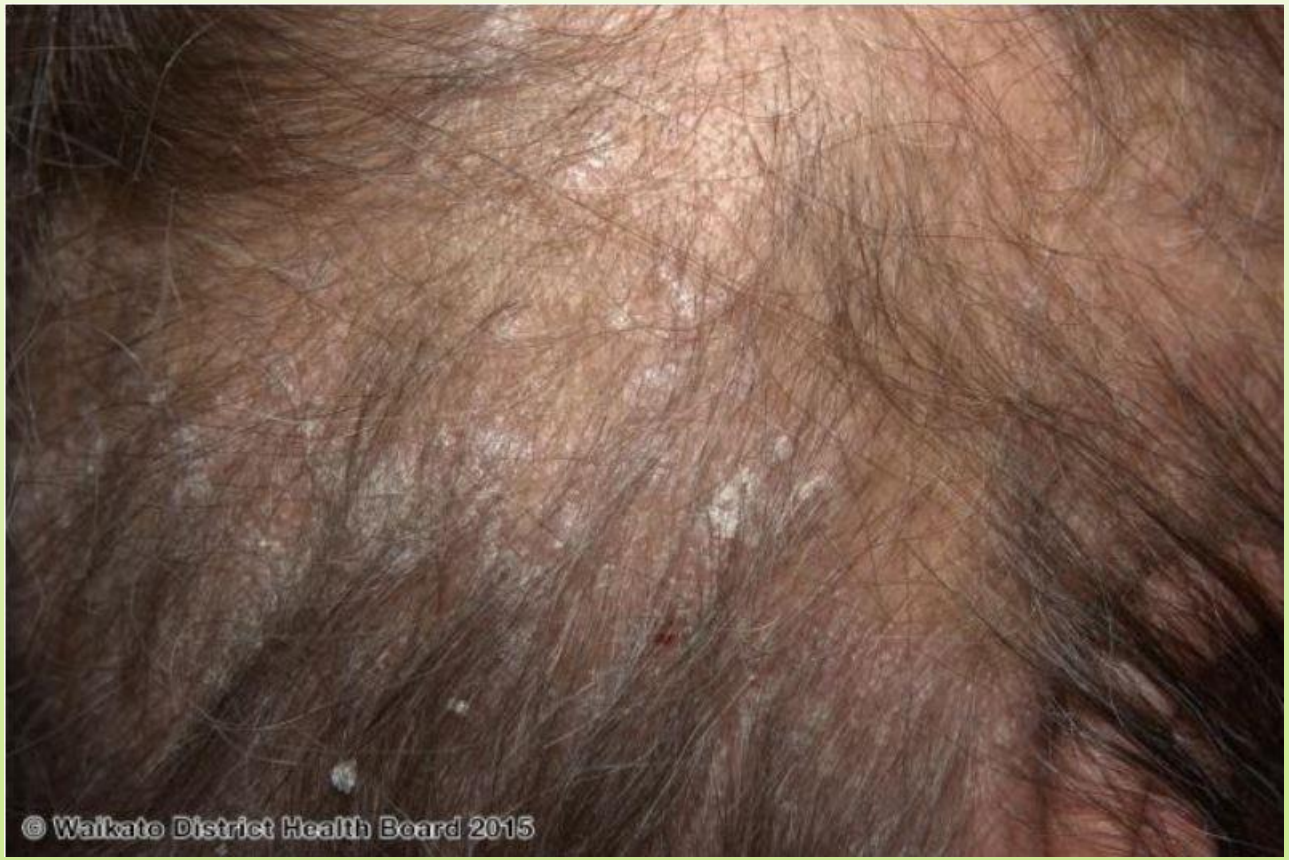




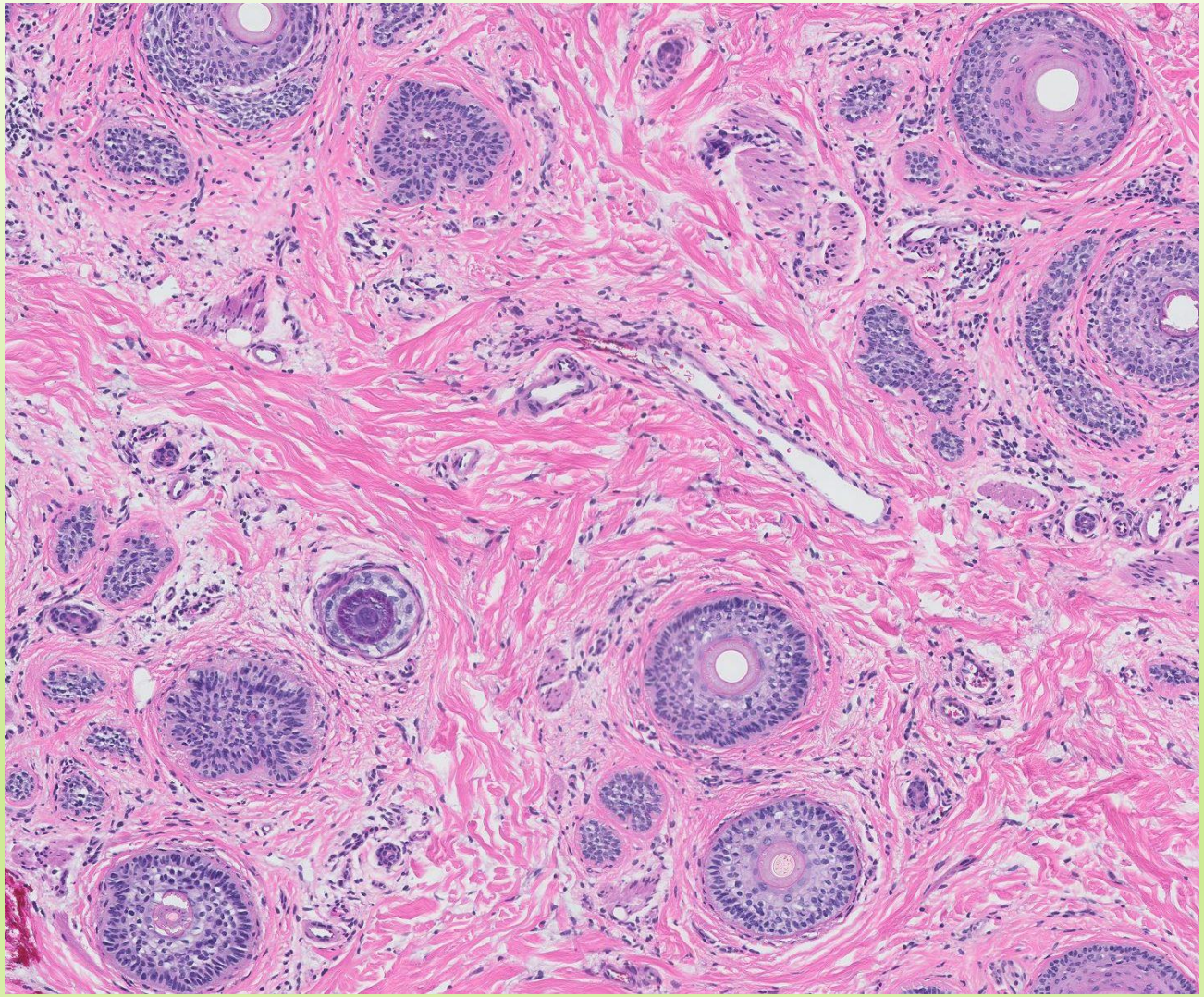


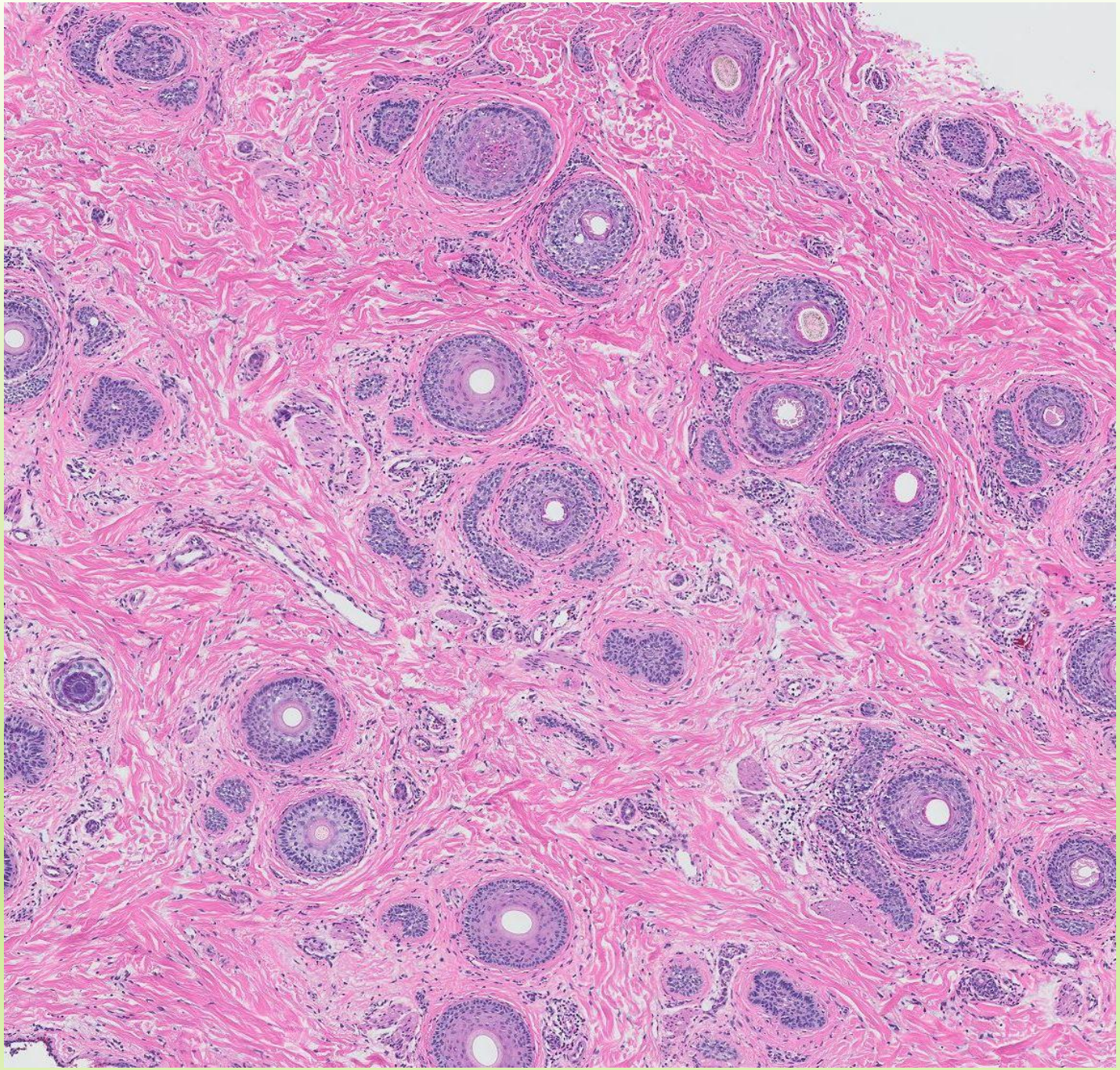
CD3+ T-lymphocytes within empty fibrous follicular tracts favors a diagnosis of alopecia areata.

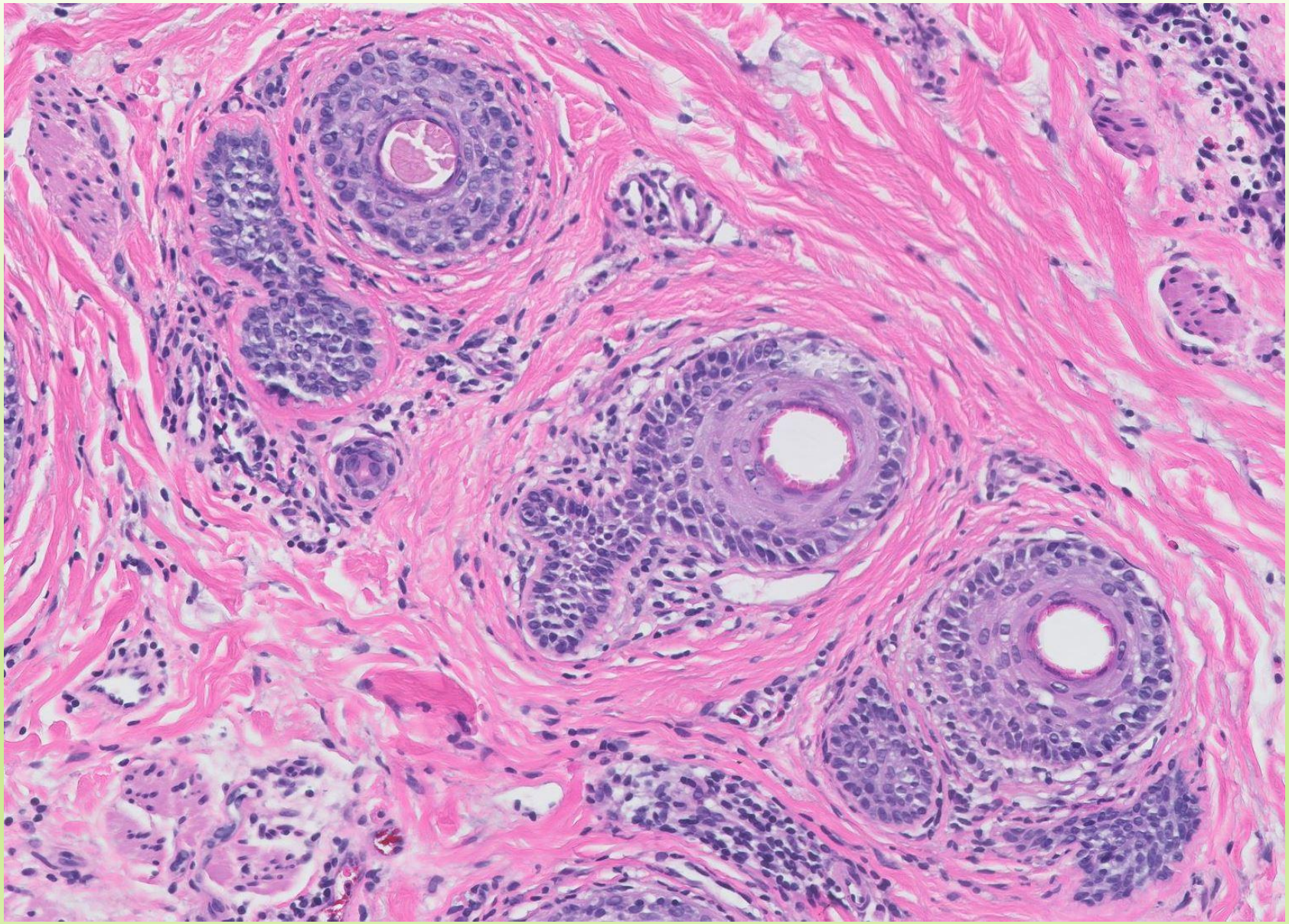


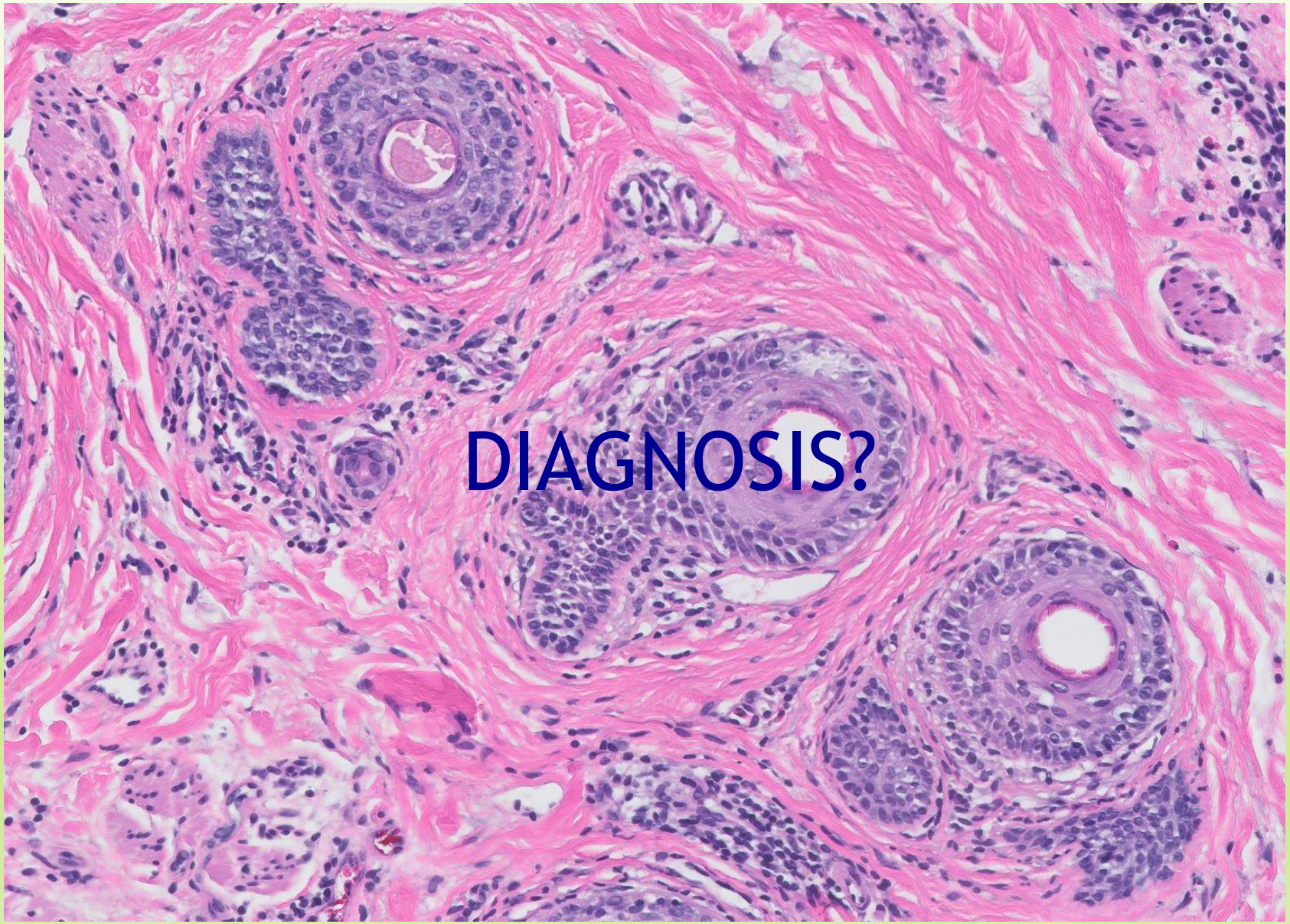


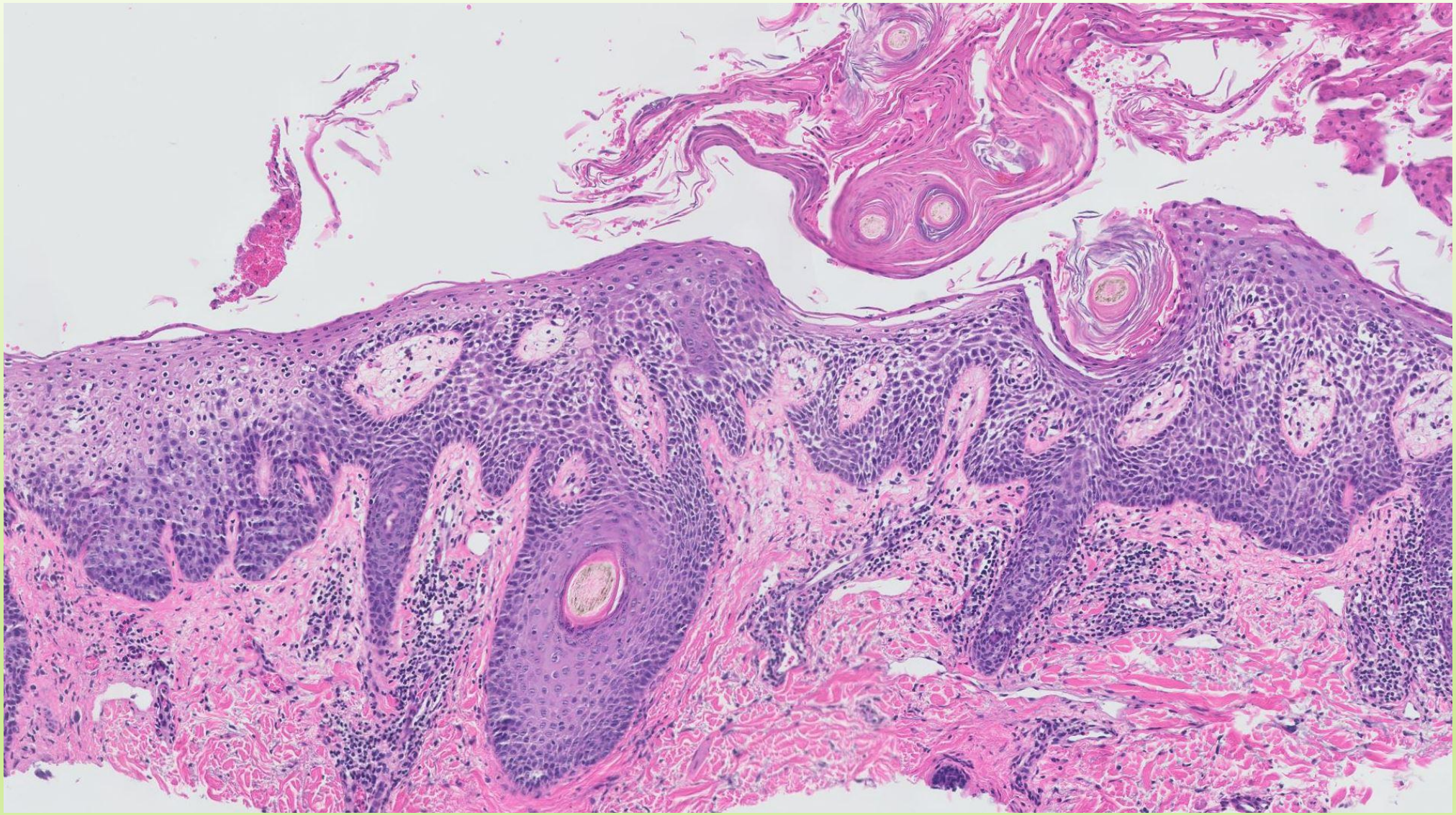
https://www.dermnetnz.org/topics/scalp-psoriasis/

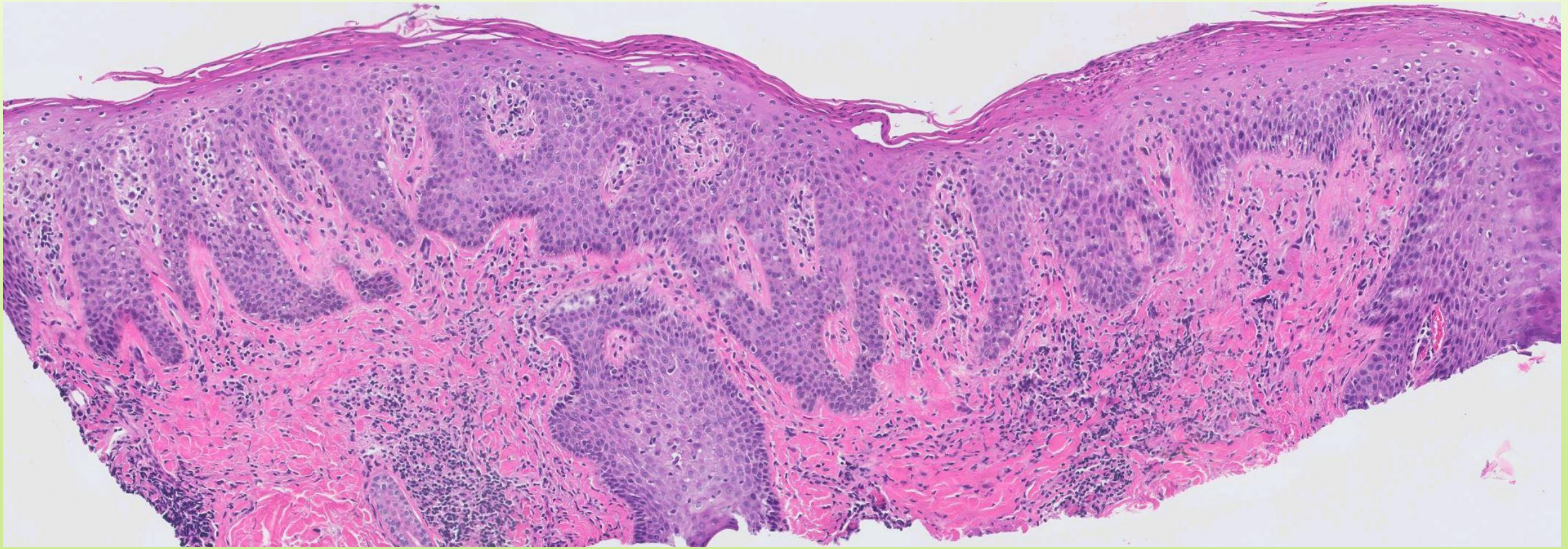




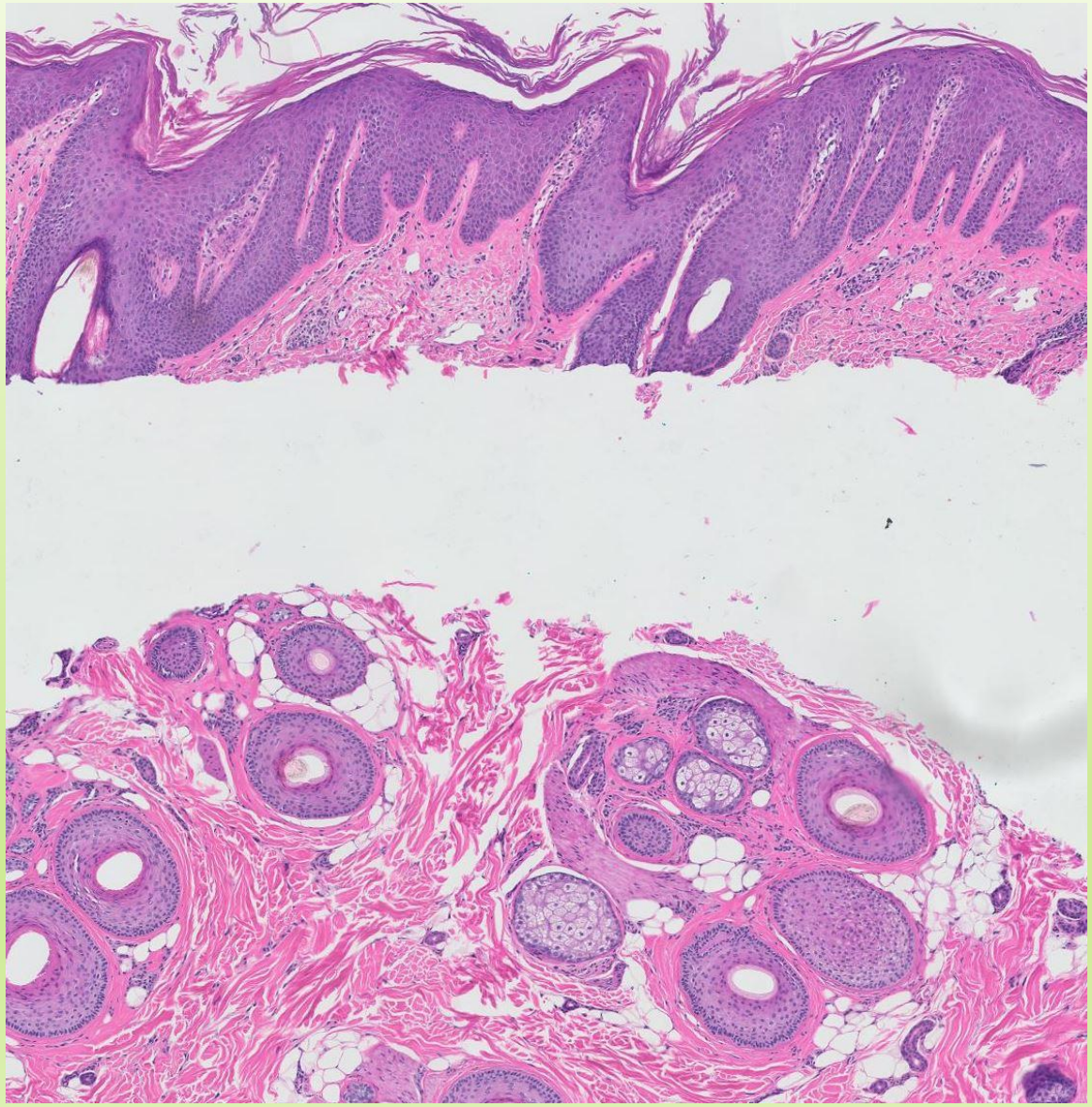



DIAGNOSIS?

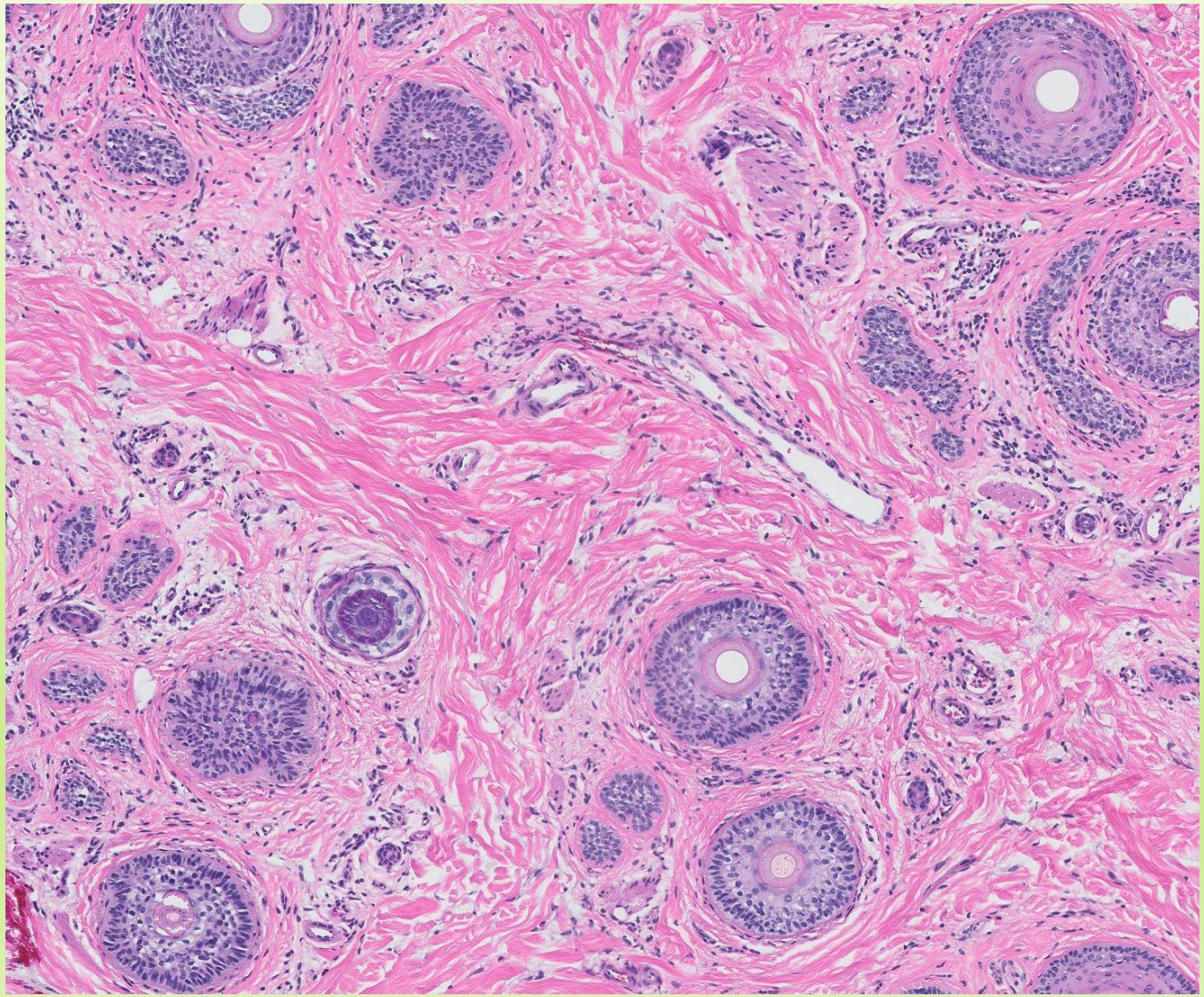




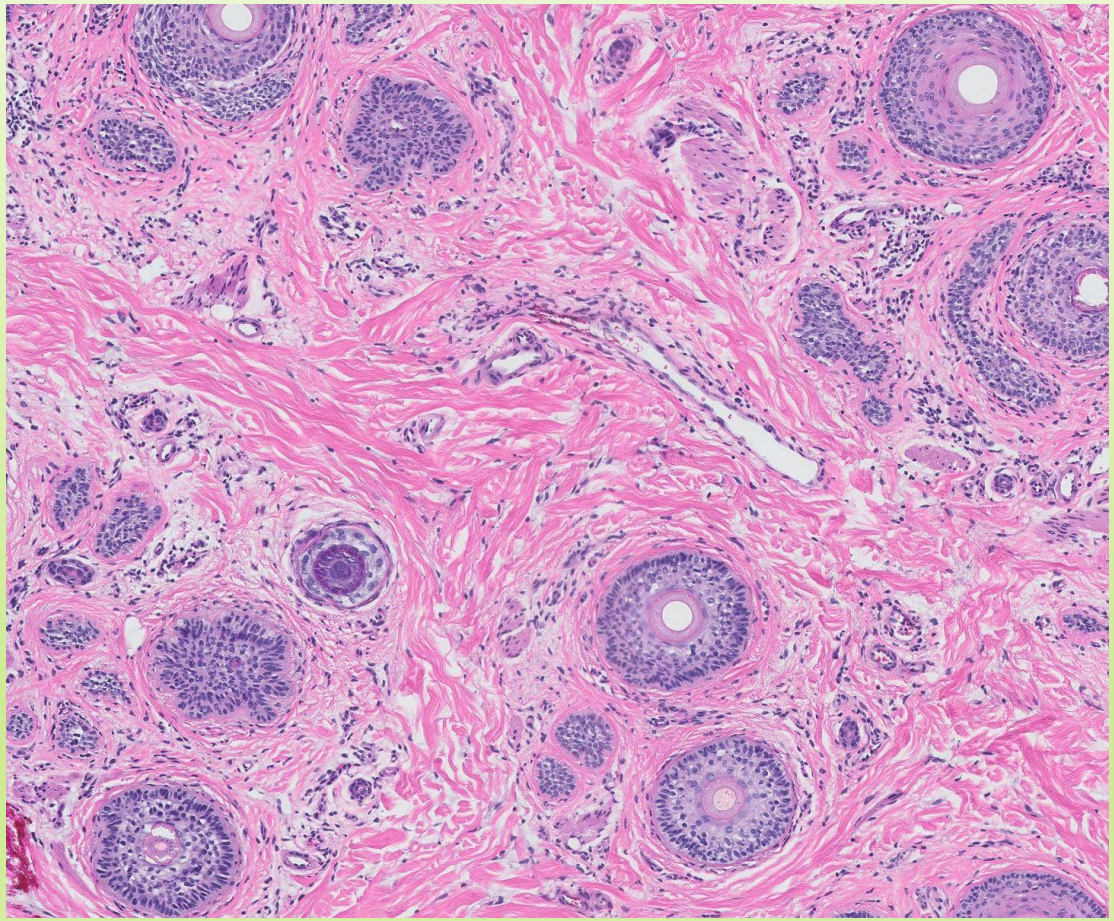
Psoriatic Alopecia



Alopecia areata with proriasis or just psoriasis?



TNF Inhibitors=Psoriatic Alopecia

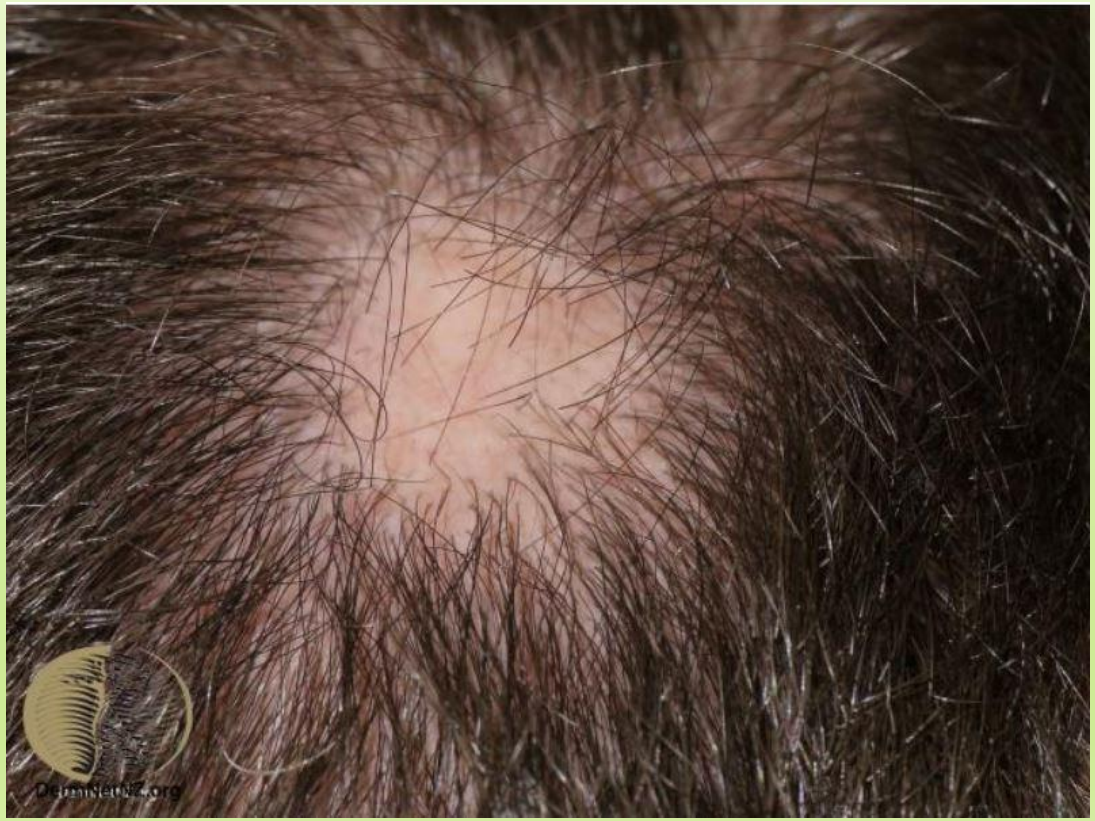


TNF-alpha inhibitor-associated alopecia

- Very close histologically to psoriatic alopecia
- TNF-alpha inhibitors may also induced alopecia areata

Doyle LA et al. Psoriatic alopecia/alopecia areata-like reactions secondary to anti-tumor necrosis factor-α therapy: a novel cause of noncicatricial alopecia. Am J Dermatopathol. 2011 Apr;33(2):161-6.

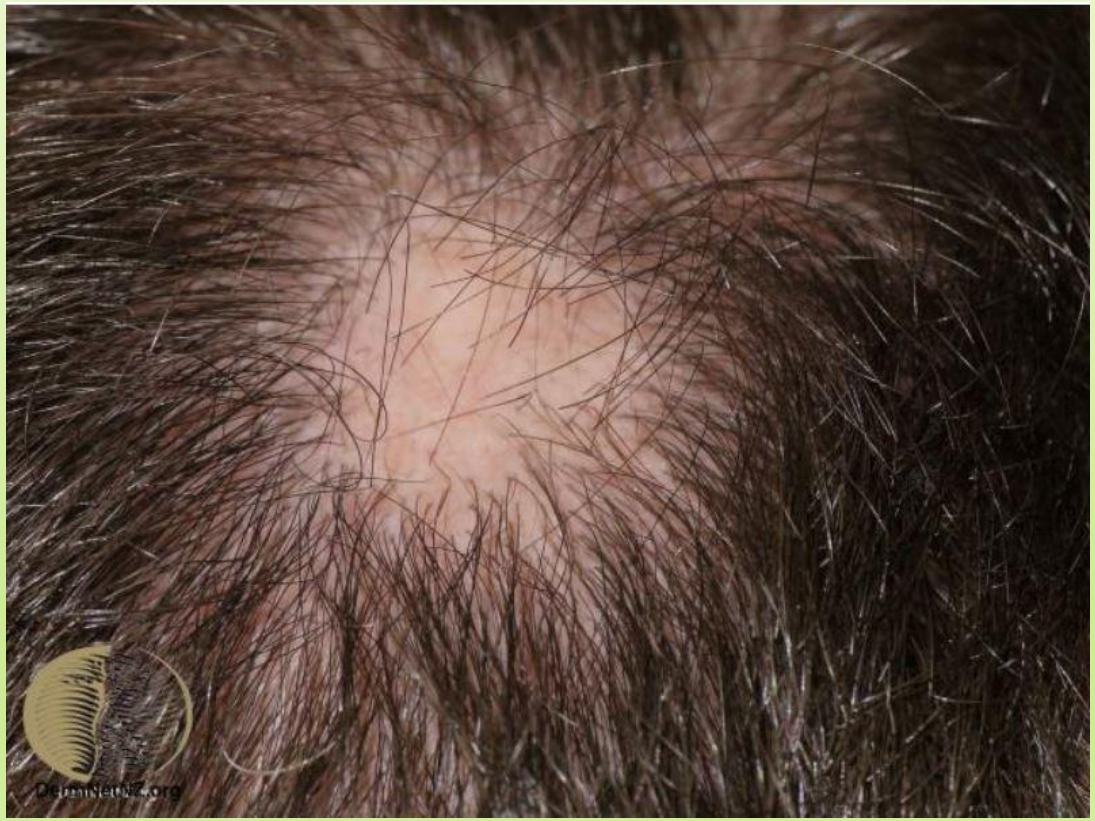
TNF inhibitors may cause alopecia areata



https://www.dermnetnz.org/topics/tumour-necrosis-factor-inhibitors/

TNF inhibitors may cause alopecia areata

? If this is just an AA-like pattern?



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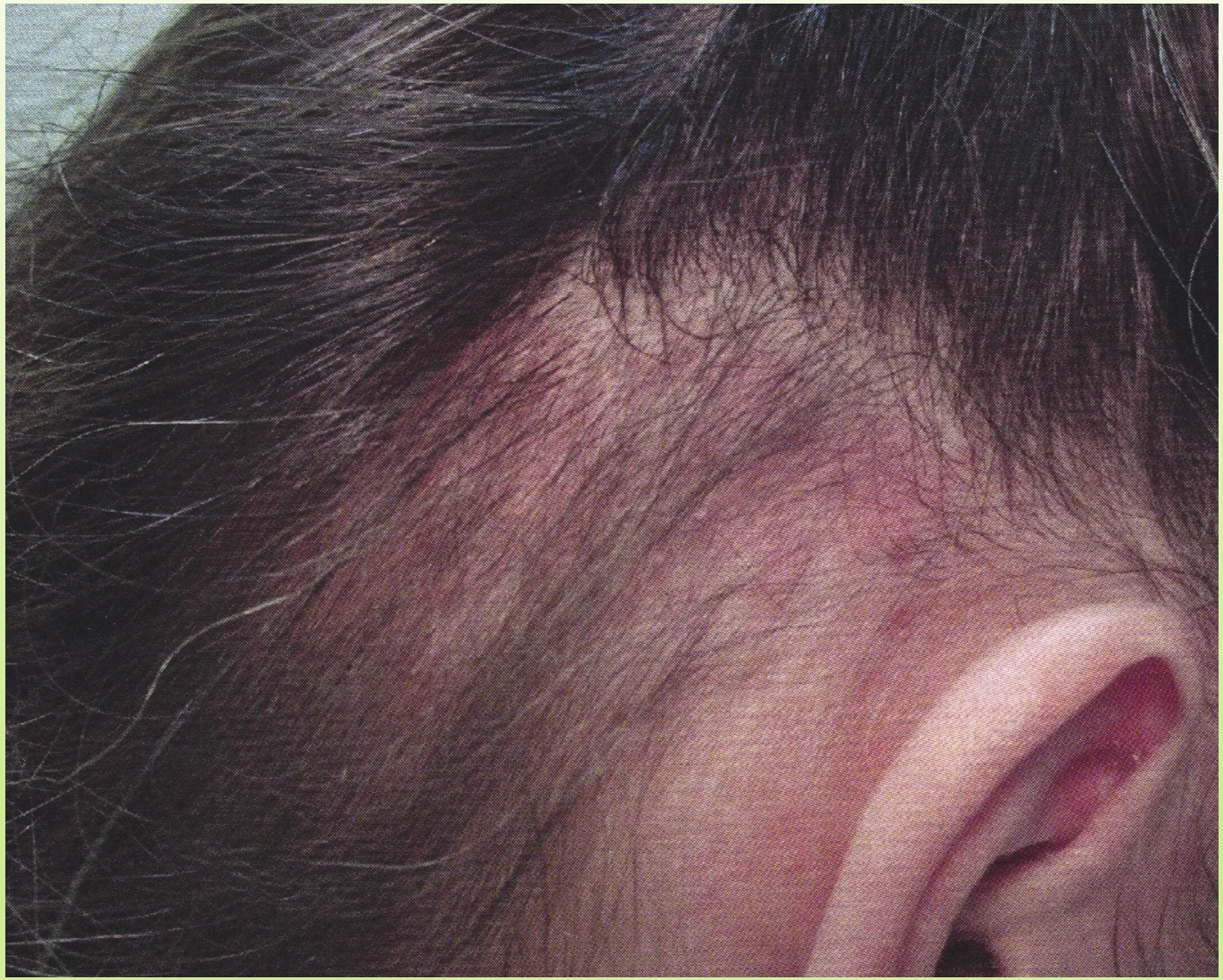
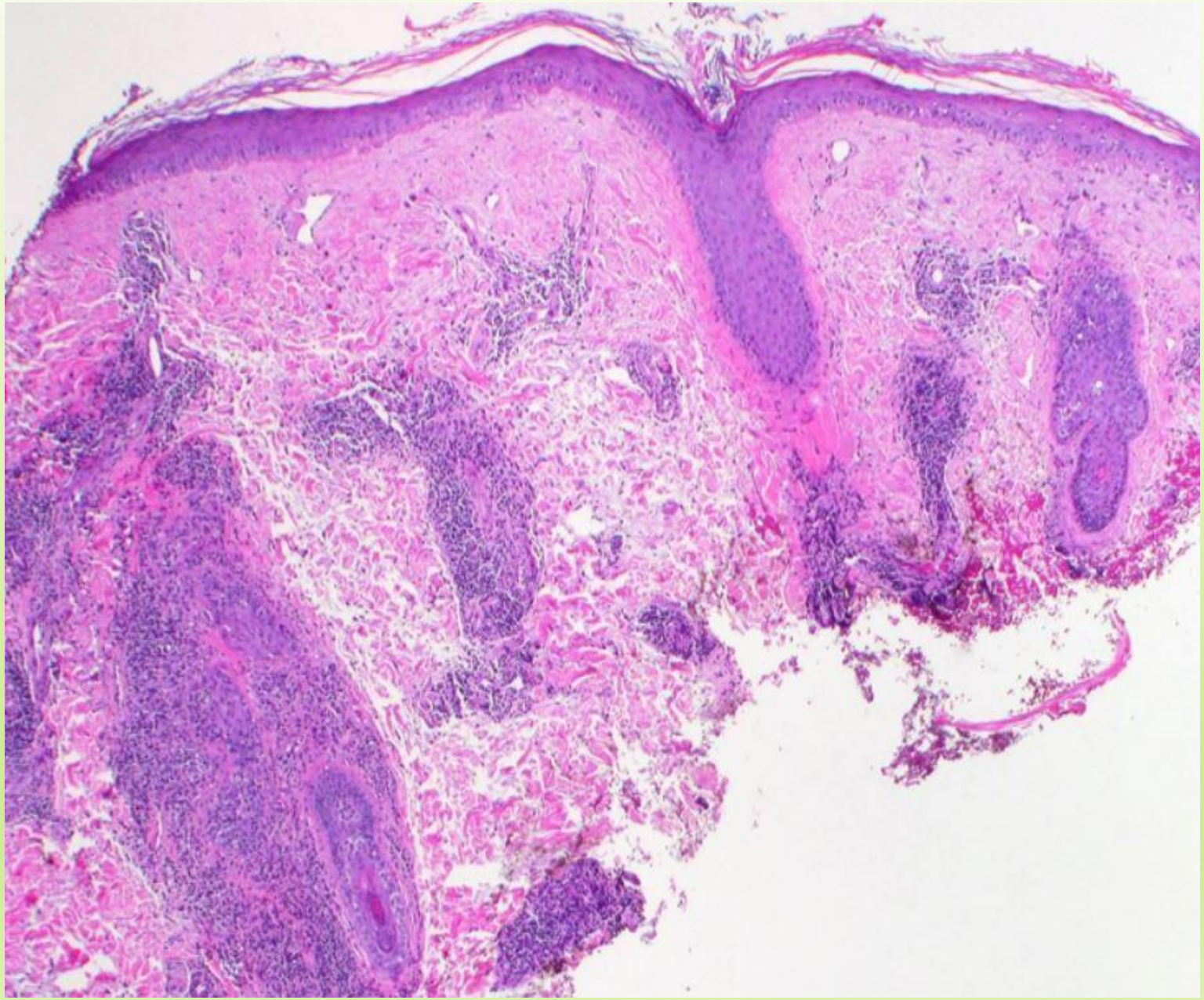
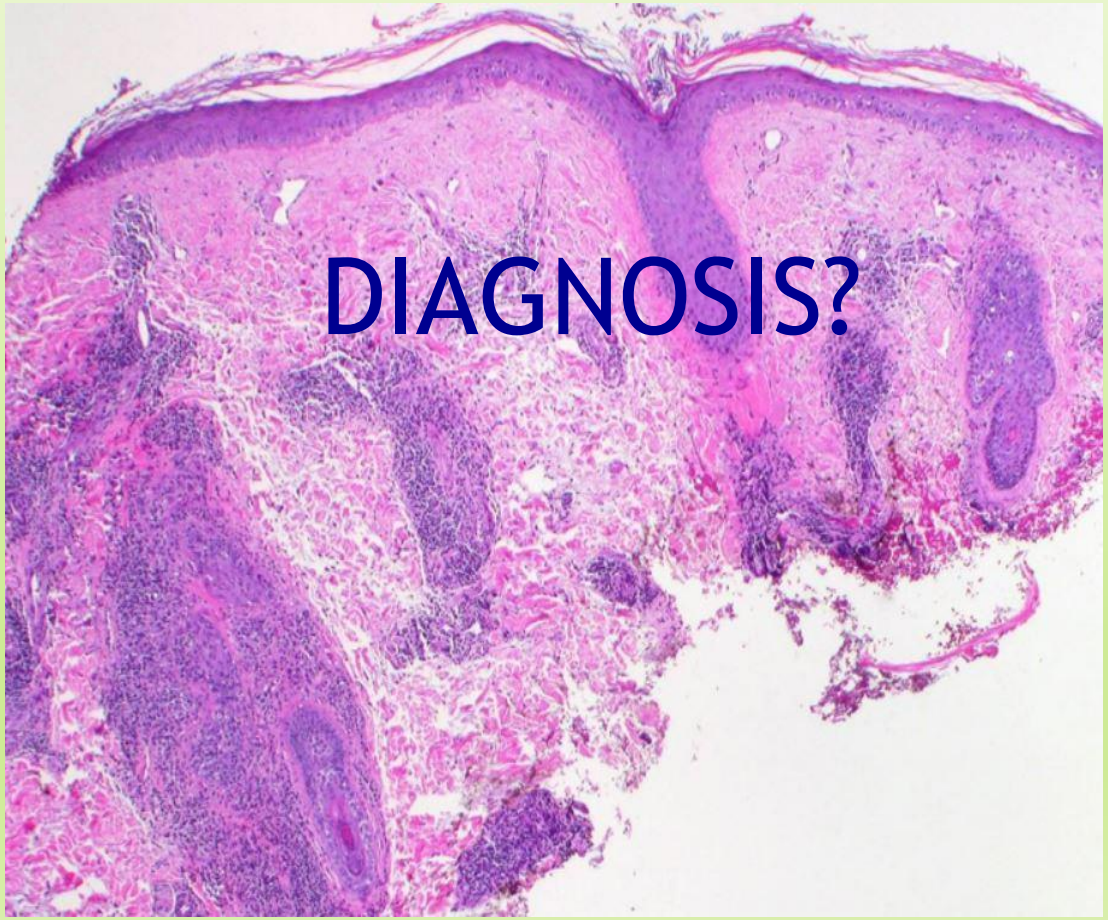
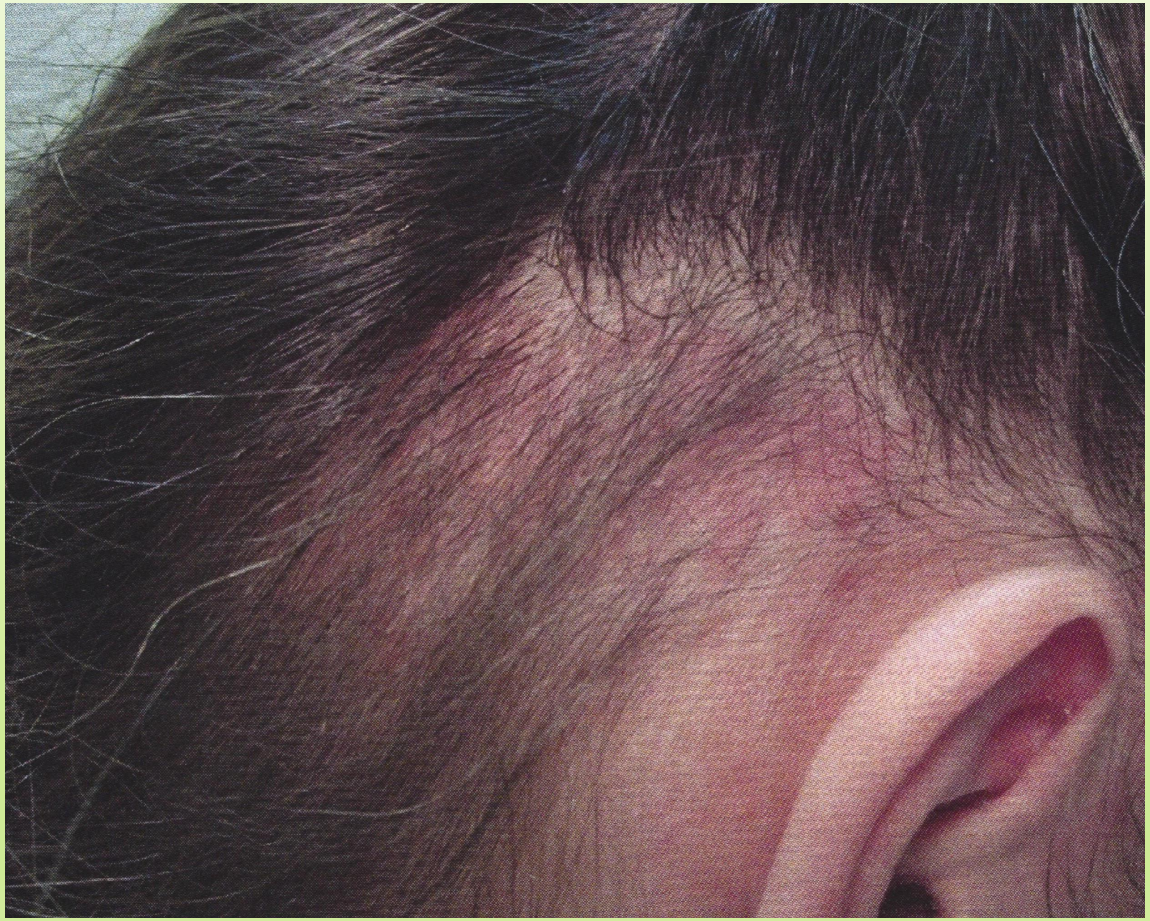


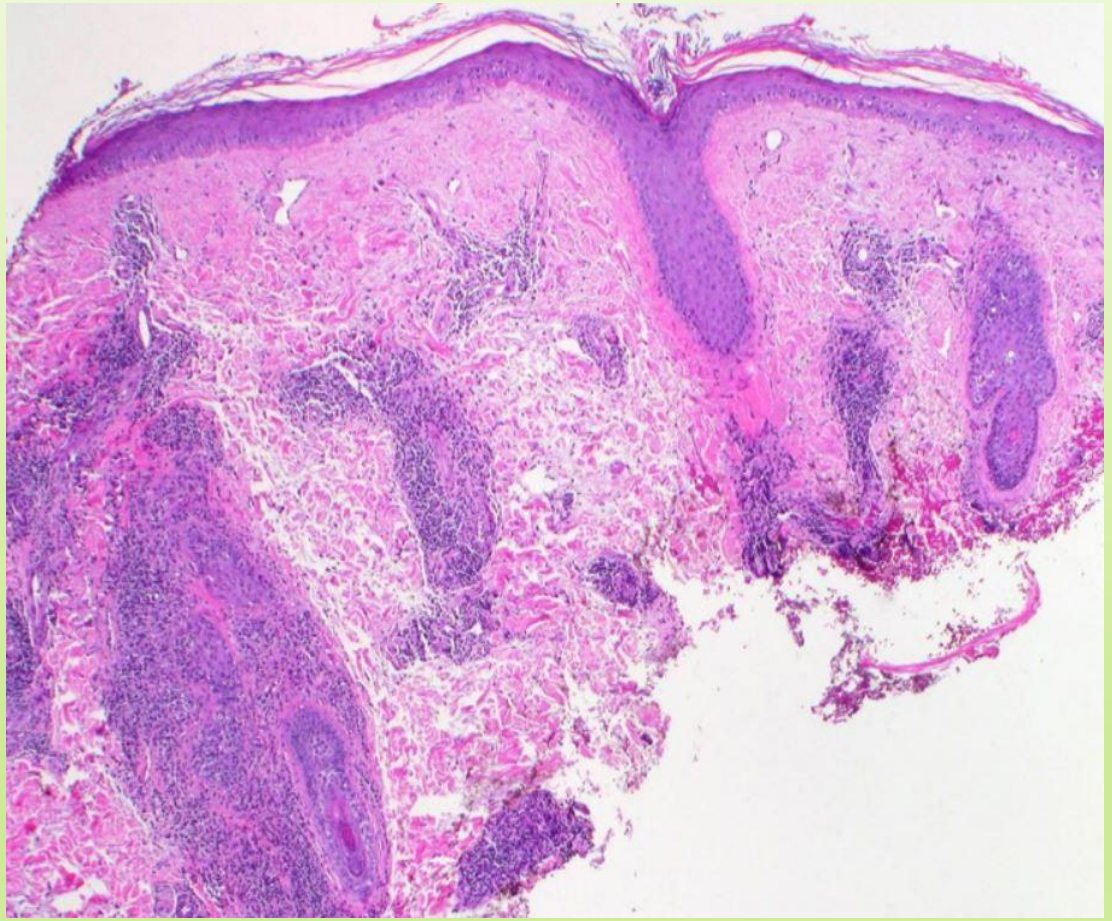
Sperling LC, Cowper SE, Knopp EA. An Atlas of Hair Pathology with Clinical Correlations. 2nd ed. Boca Raton (FL): Taylor and Francis Group, 2012.




DIAGNOSIS?

Systemic lupus erythematosus
Non-scarring alopecia

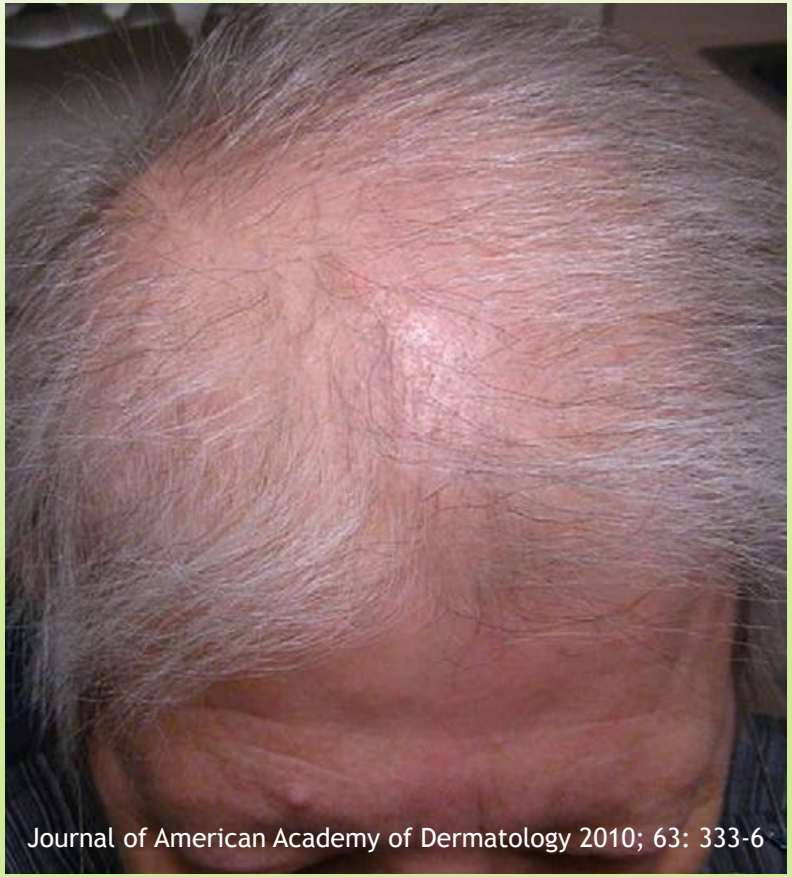




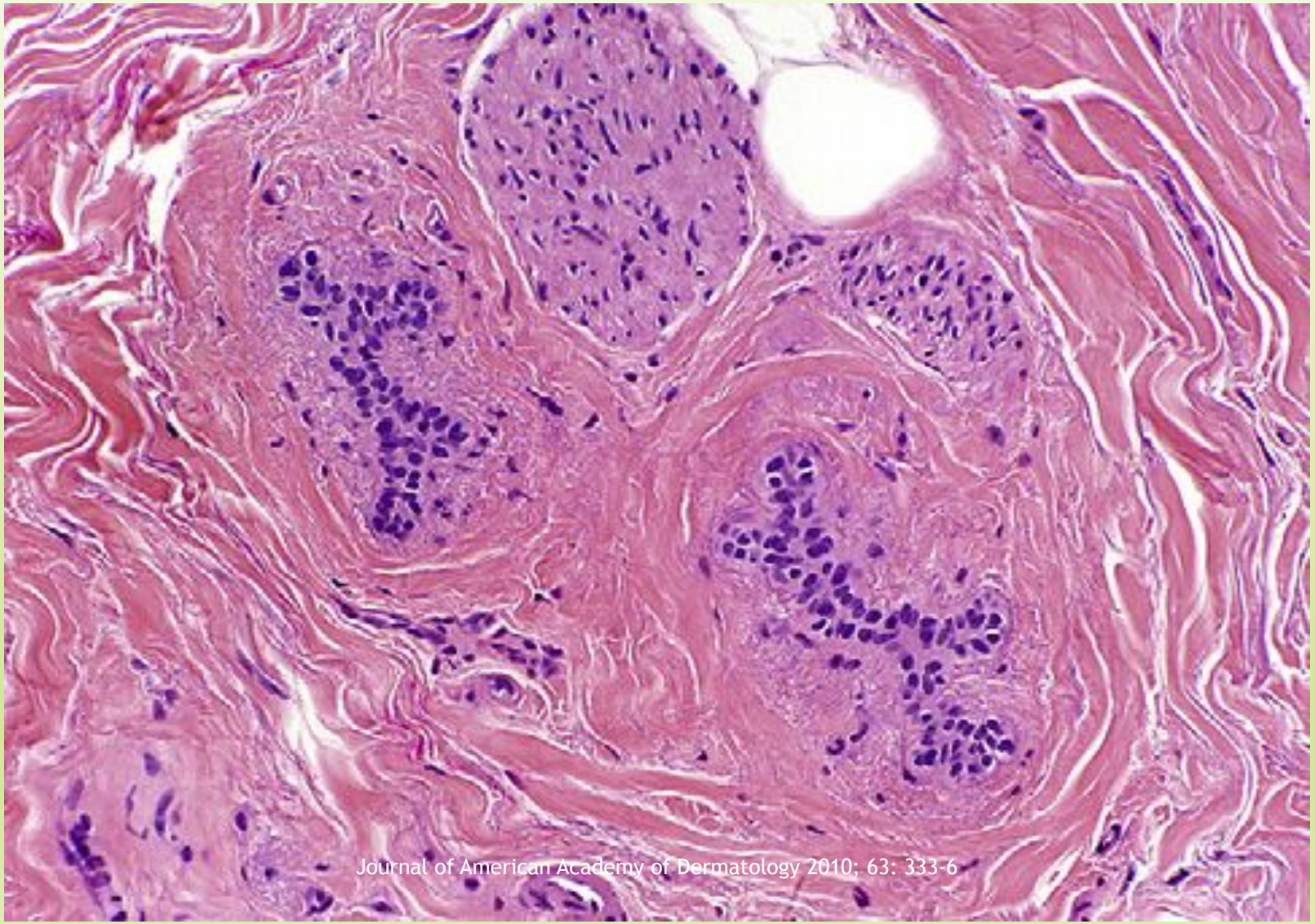
Sperling LC, Cowper SE, Knopp EA. An Atlas of Hair Pathology with Clinical Correlations. 2nd ed. Boca Raton (FL): Taylor and Francis Group, 2012.

Systemic lupus erythematosus
Non-scarring alopecia

- Alopecia areata-like changes
- Will identify surface or follicular interface change.
- Mucin less helpful on scalp
- CD123 helpful (clusters)

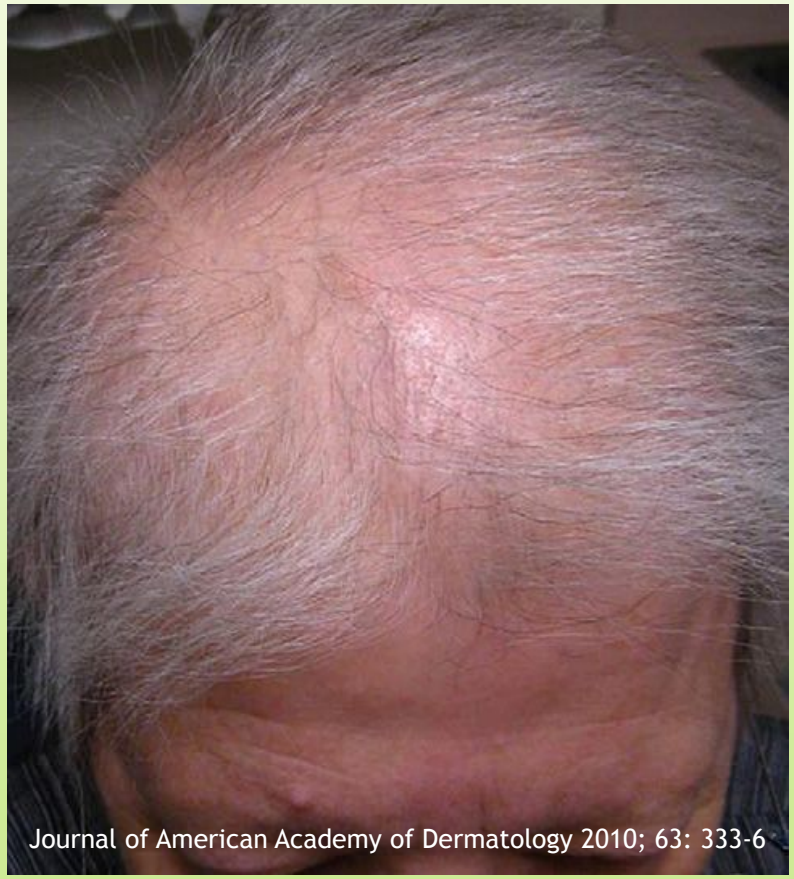


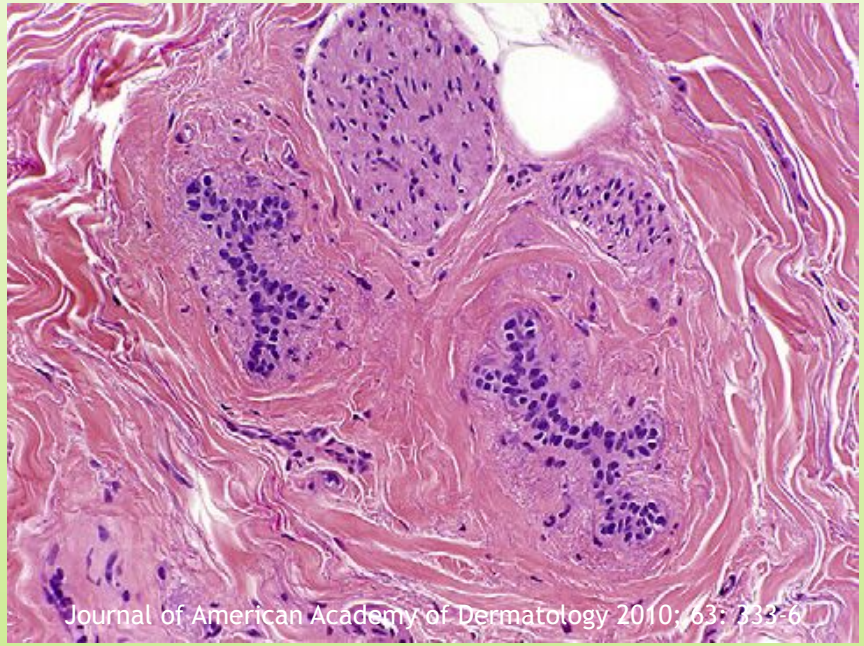
Journal of American Academy of Dermatology 2010; 63: 333-6



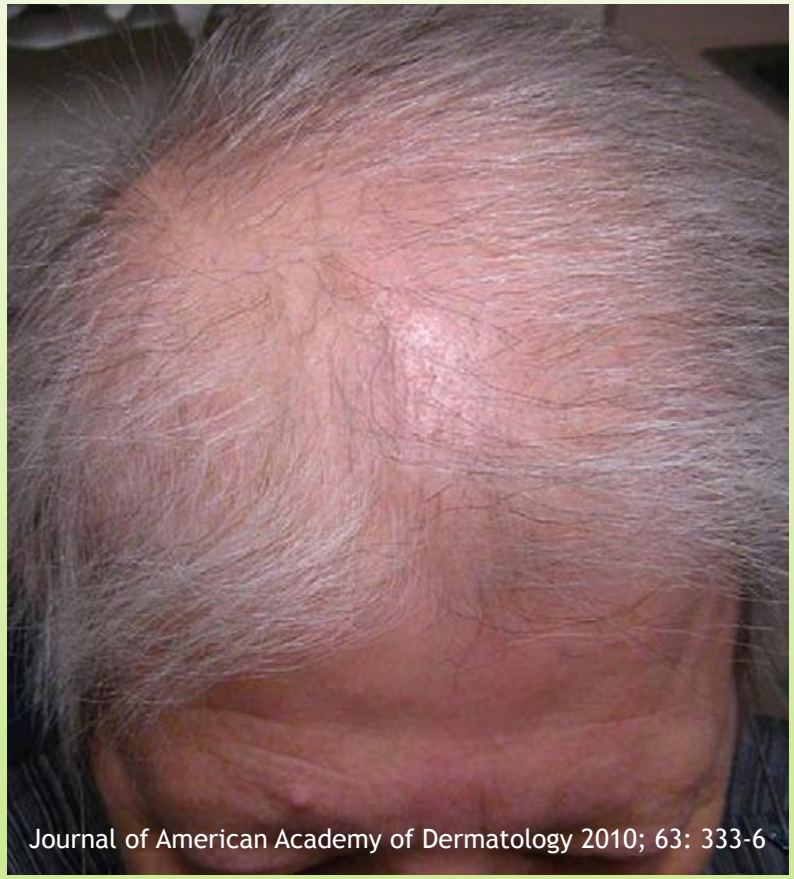
Journal of American Academy of Dermatology 2010; 63: 333-6

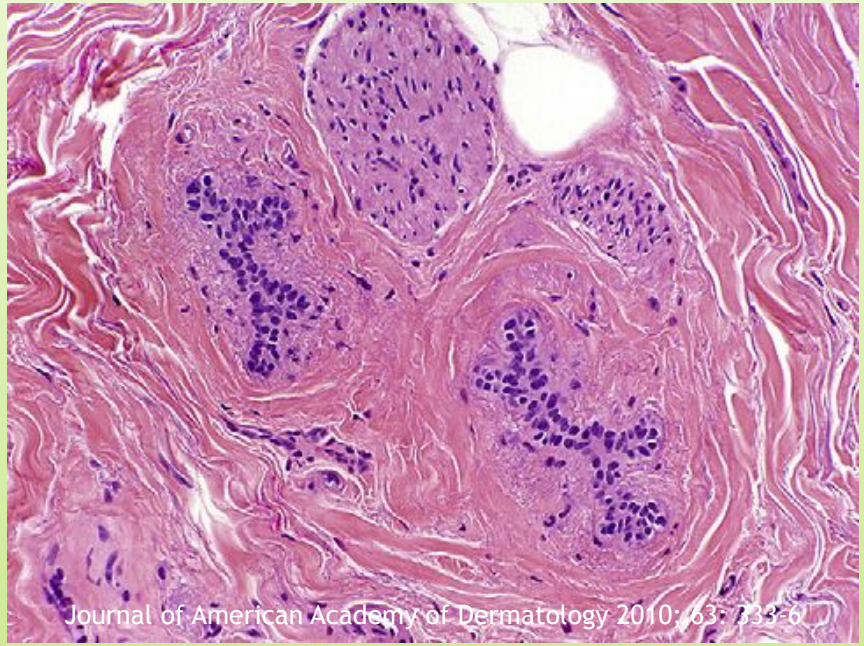
Diagnosis?


Journal of American Academy of Dermatology 2010; 63: 333-6


Journal of American Academy of Dermatology 2010; 63: 333-6

Permanent Alopecia after Chemotherapy





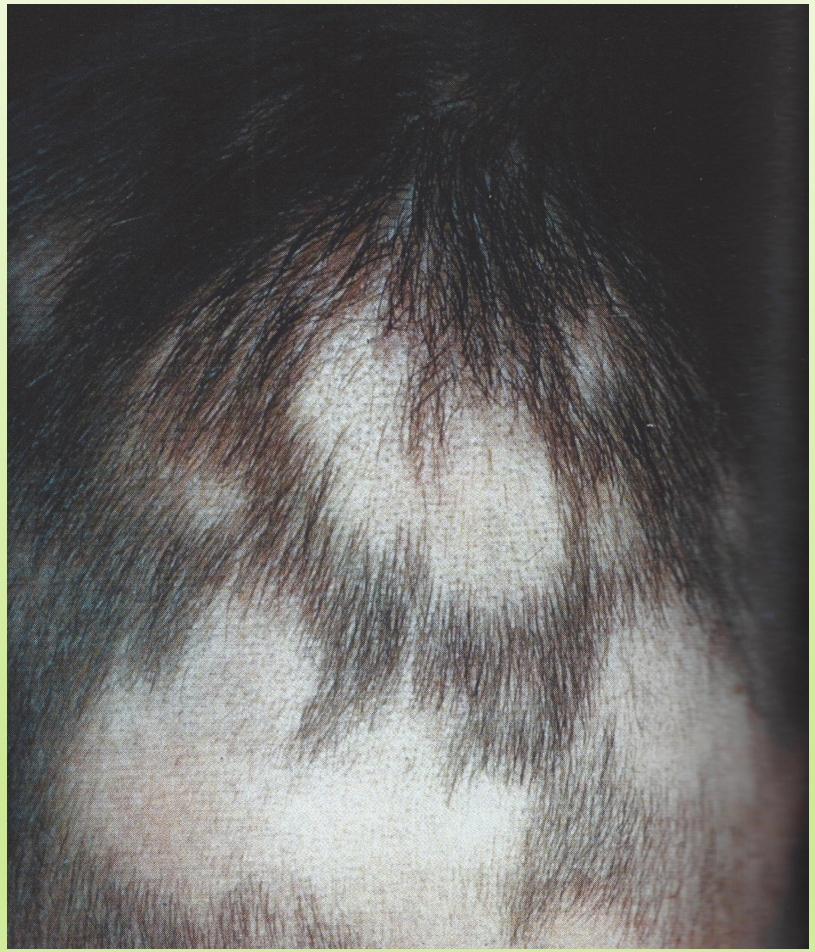
1. Miteva M, Misciali C, Fanti PA, Vincenzi C, Romanelli P, Tosti A. Permanent alopecia after systemic chemotherapy: a clinicopathological study of 10 cases. *American Journal of Dermatopathology* 2011; 33: 345.
2. Tallon B, Blanchard E, Goldberg LJ. Permanent chemotherapy-induced alopecia: Case report and review of the literature. *Journal of American Academy of Dermatology* 2010; 63: 333.

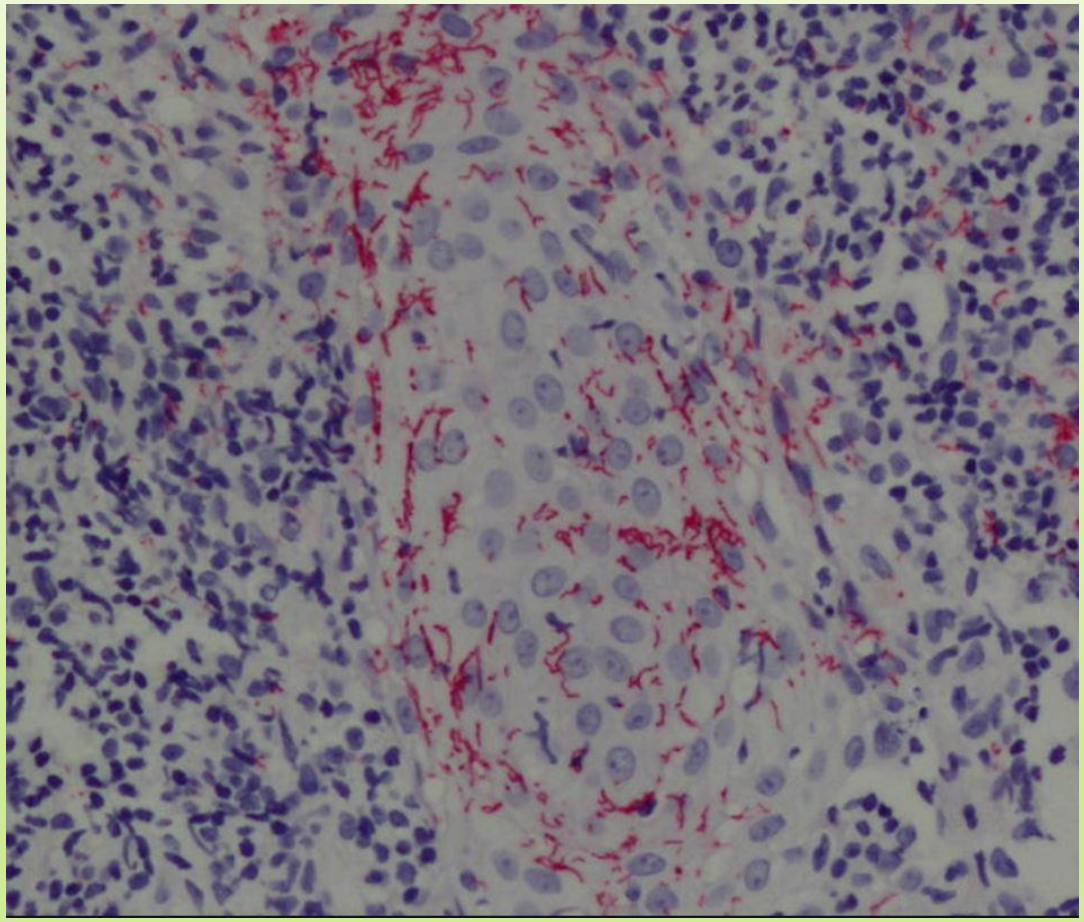
Permanent Alopecia after Chemotherapy

- Increasing in frequency
- Highly dependent on type of chemotherapy or radiation
- Generally get the history but this may occur long after chemotherapy

1. Miteva M, Misciali C, Fanti PA, Vincenzi C, Romanelli P, Tosti A. Permanent alopecia after systemic chemotherapy: a clinicopathological study of 10 cases. *American Journal of Dermatopathology* 2011; 33: 345.
2. Tallon B, Blanchard E, Goldberg LJ. Permanent chemotherapy-induced alopecia: Case report and review of the literature. *Journal of American Academy of Dermatology* 2010; 63: 333.

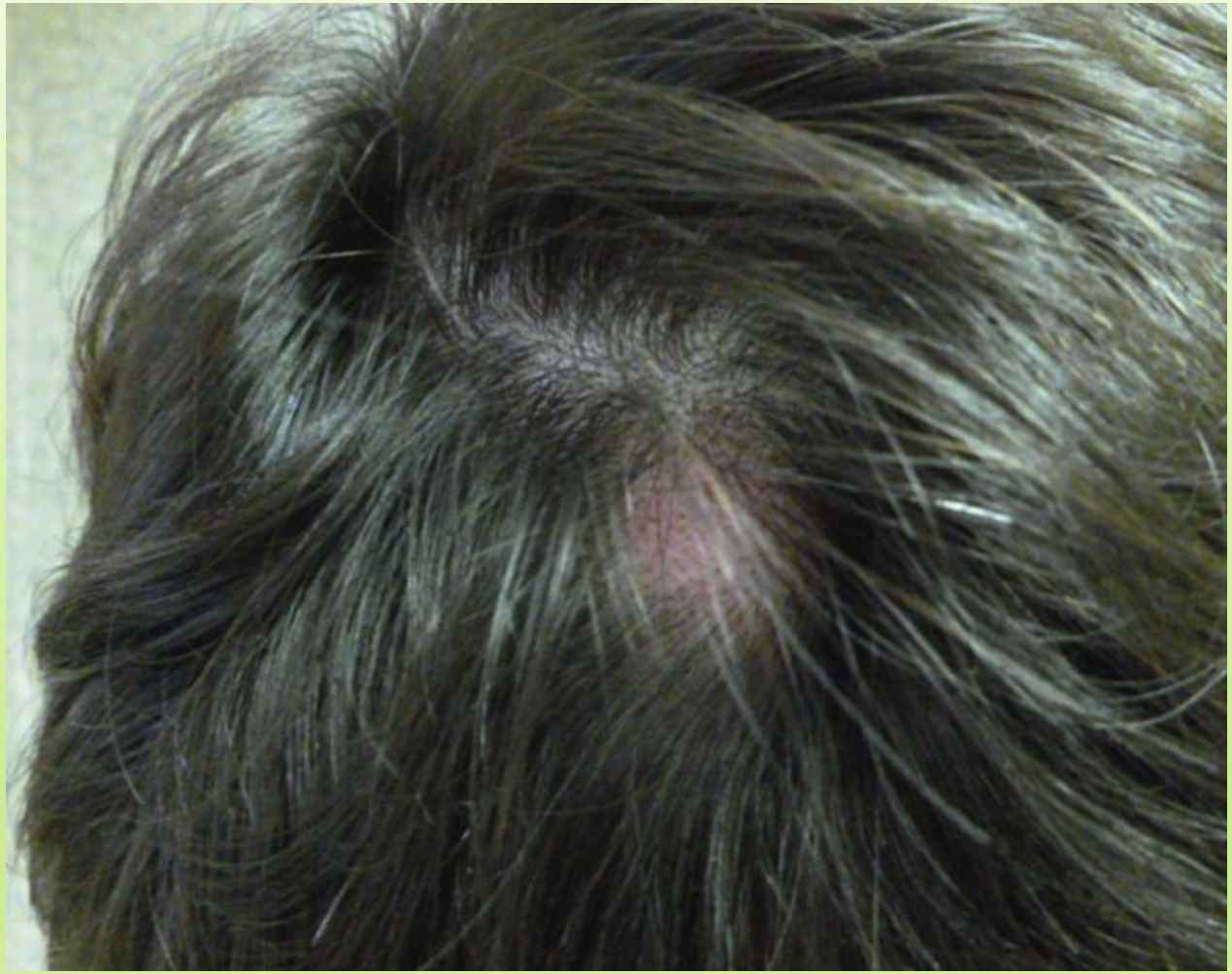
Syphilis

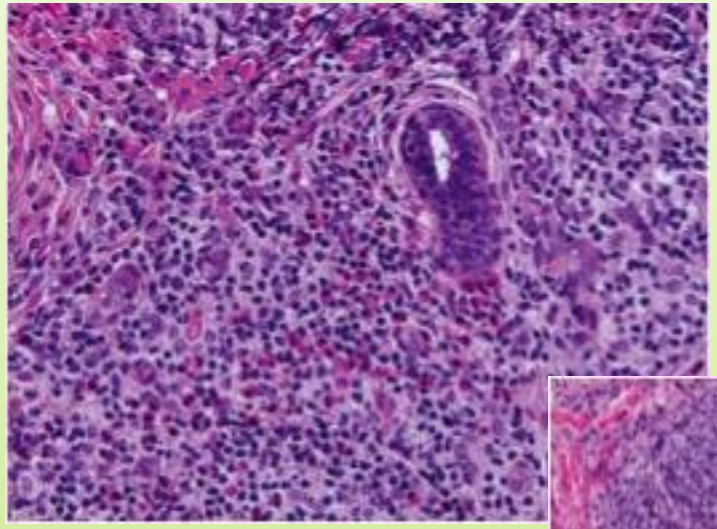


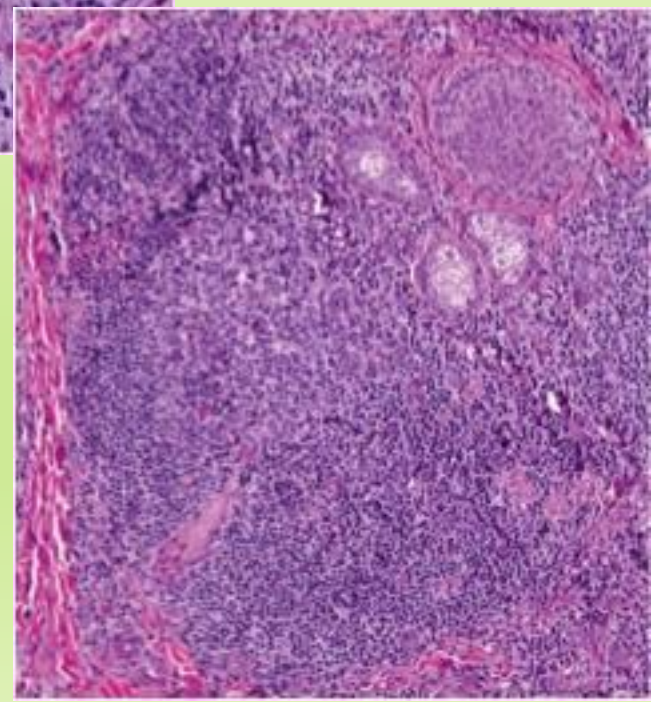


Sperling LC, Cowper SE, Knopp EA. An Atlas of Hair Pathology with Clinical Correlations. 2nd ed. Boca Raton (FL): Taylor and Francis Group, 2012.

Tick-bite Alopecia







Lynch MC et al. Tick bite alopecia: a report and review. Am J Dermatopathol 38:150-3, 2016.

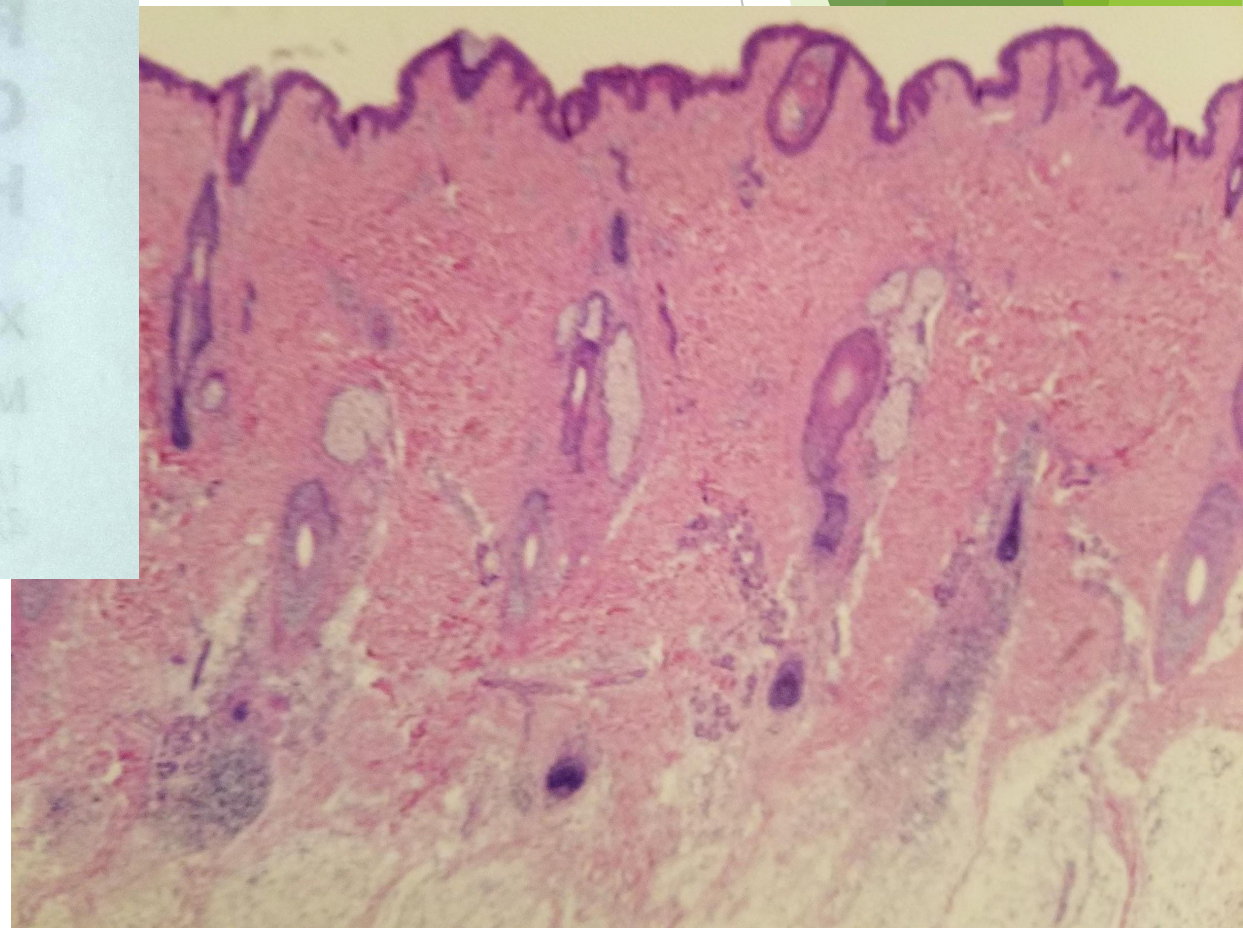
15. Others

P-203

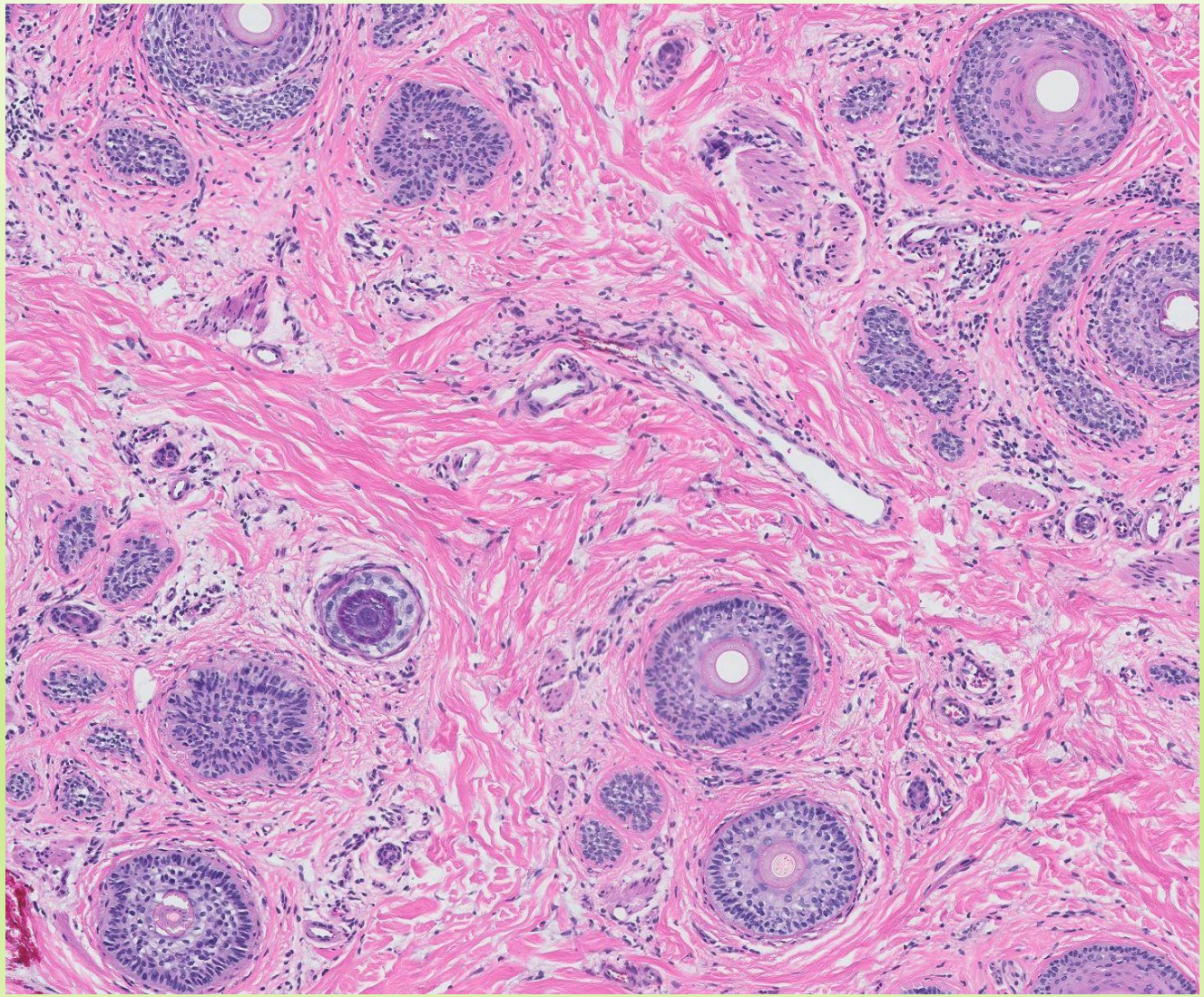
A case of centrifugal lipodystrophic alopecia

Kazutoshi HARADA[1)], Tatsuo MAEDA[1)],
Masaki UCHIYAMA[1)], Ryokichi IRISAWA[1)], Kikyo GO[2)],
Ryoji TSUBOI[1)]

1) Tokyo Medical University, Japan
2) Dermatology Go Clinic



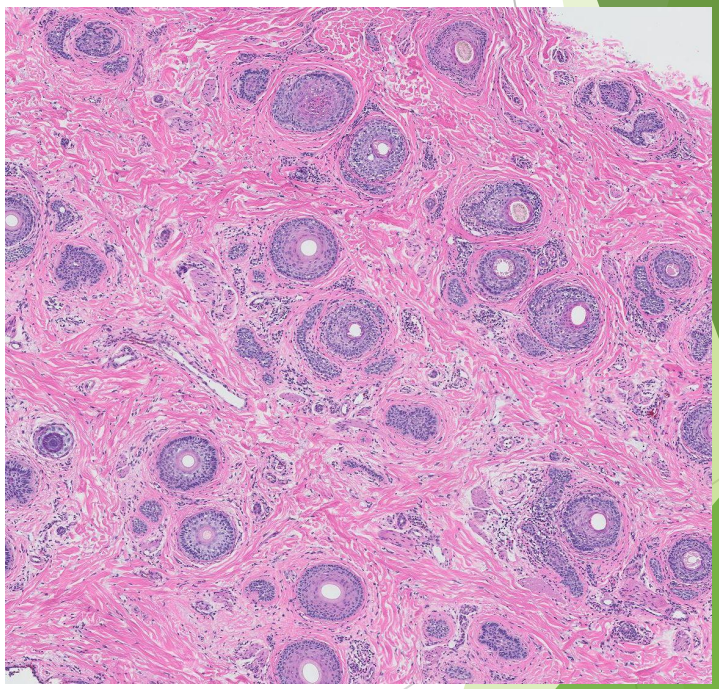
Alopecia Areata-like Pattern



Alopecia Areata–like Pattern

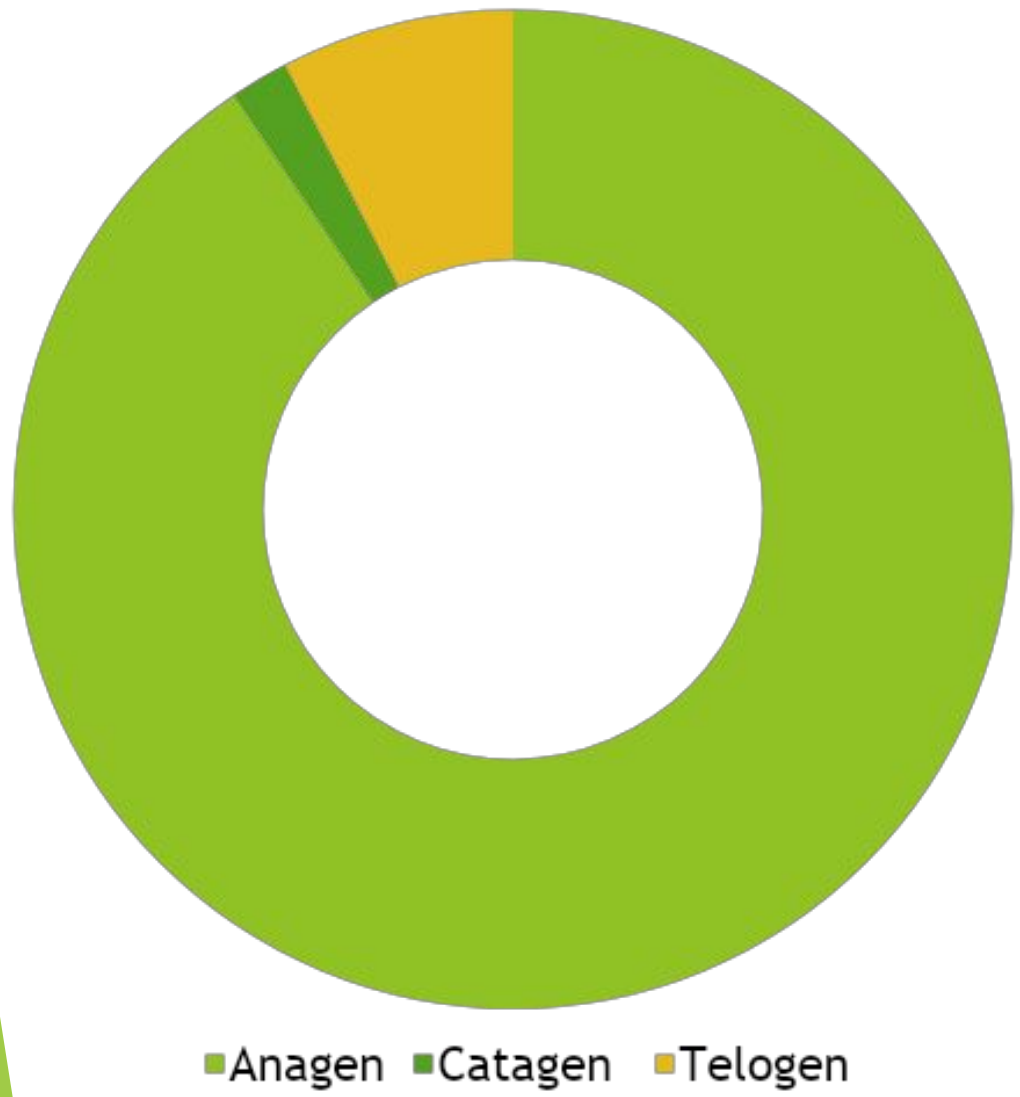
Marked miniaturization with reduced anagen phase:

- Alopecia areata
- Psoriatic alopecia
- TNF-alpha inhibitor induced psoriasiform alopecia
- Syphilitic alopecia
- Non-scarring alopecia of systemic lupus erythematosus
- Tick-bite alopecia
- Centrifugal lipodystrophic alopecia



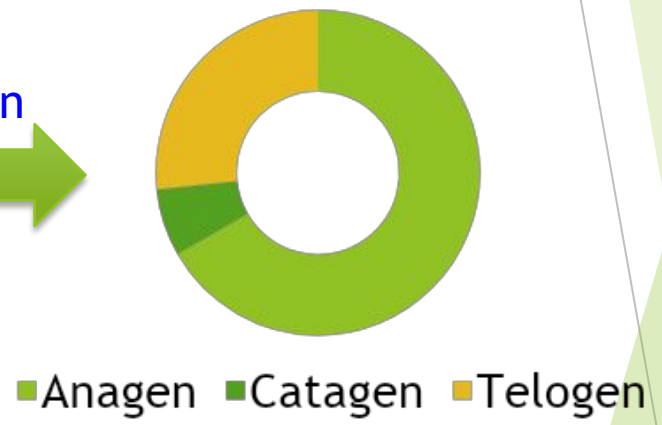
Why do such different entities share a common pattern?

Terminal hair

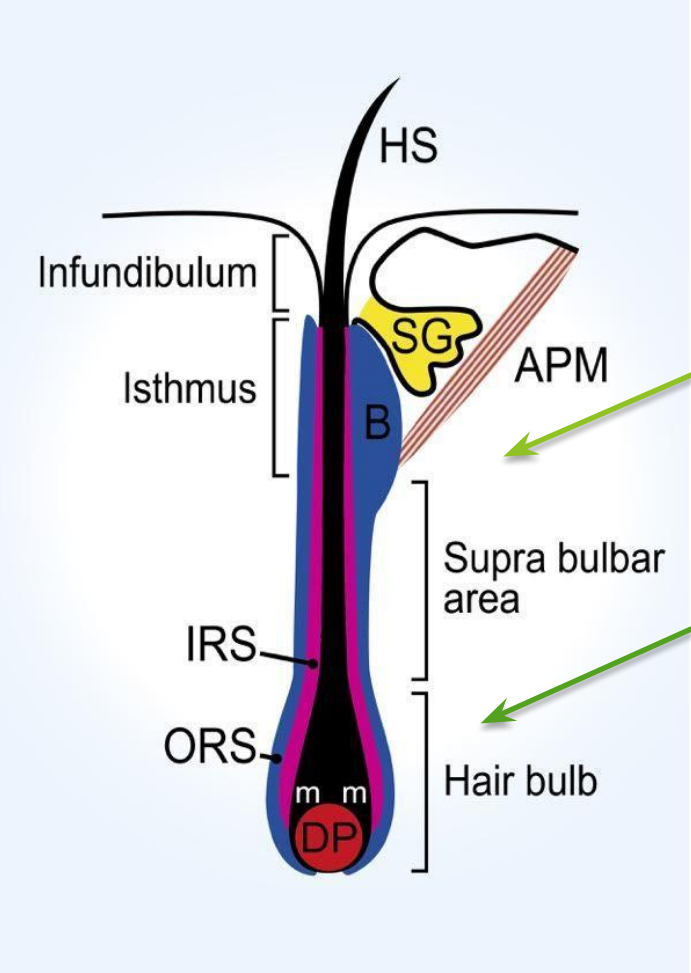


Miniaturization

Vellus hair

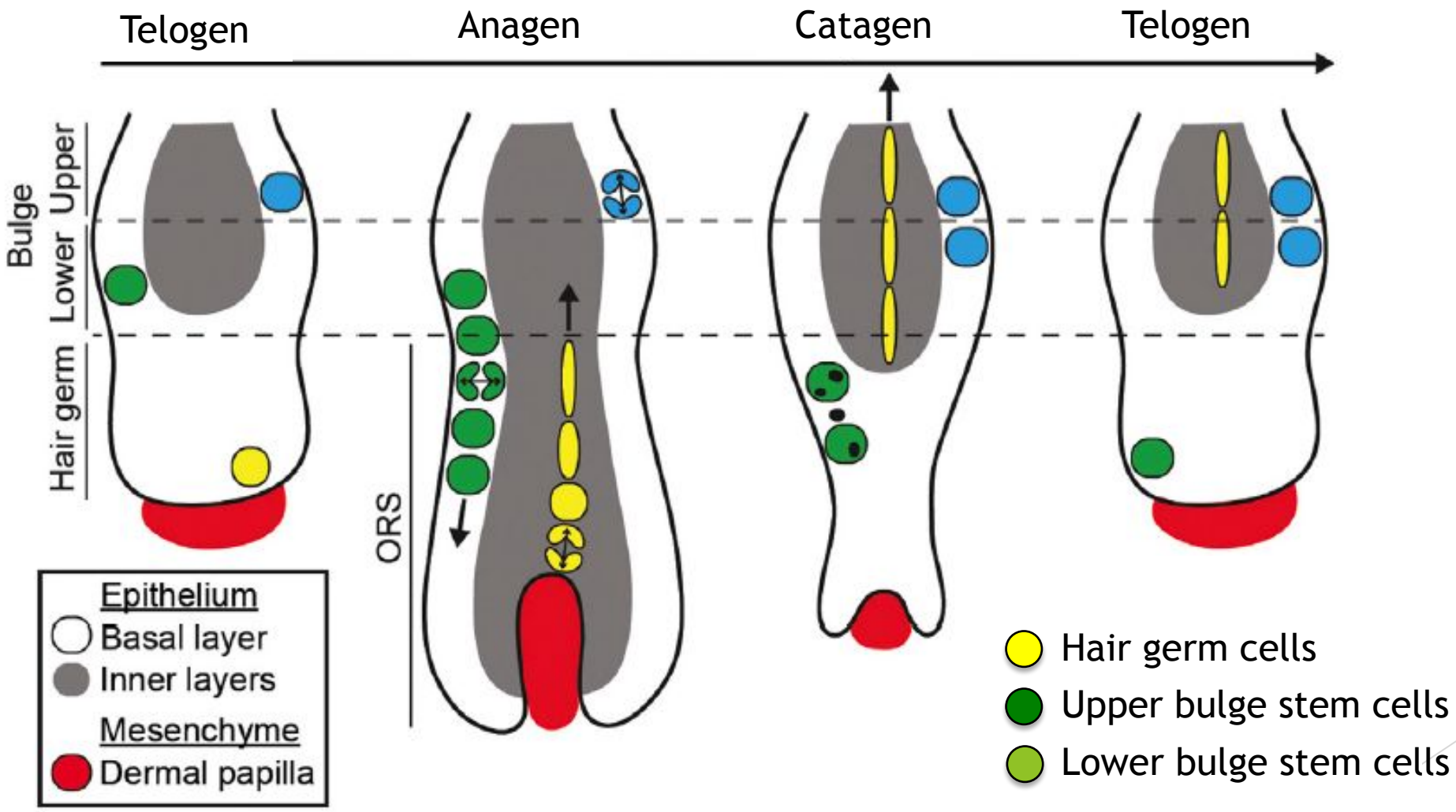


Coexistence of two functionally distinct stem cells

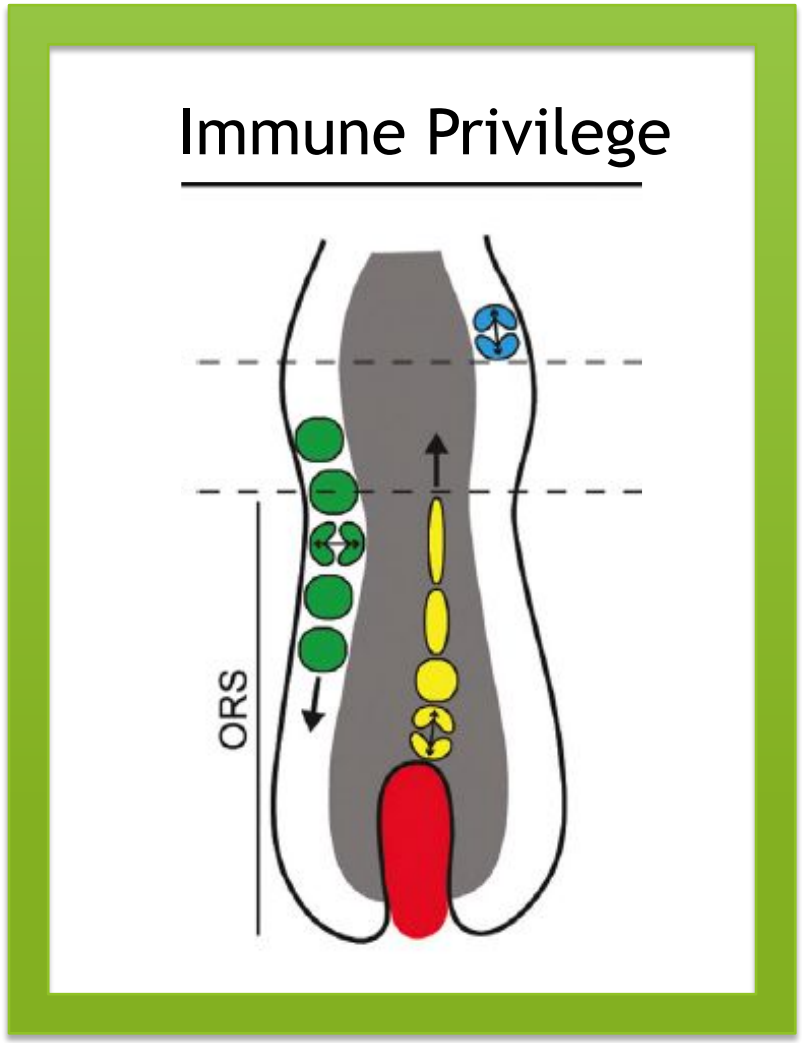


1. Bulge stem cells: quiescent
2. and maintain long-term stem cell pool
3. Hair germ cells: activated during anaphase engaging in a new growth

Hair Follicle Cycling

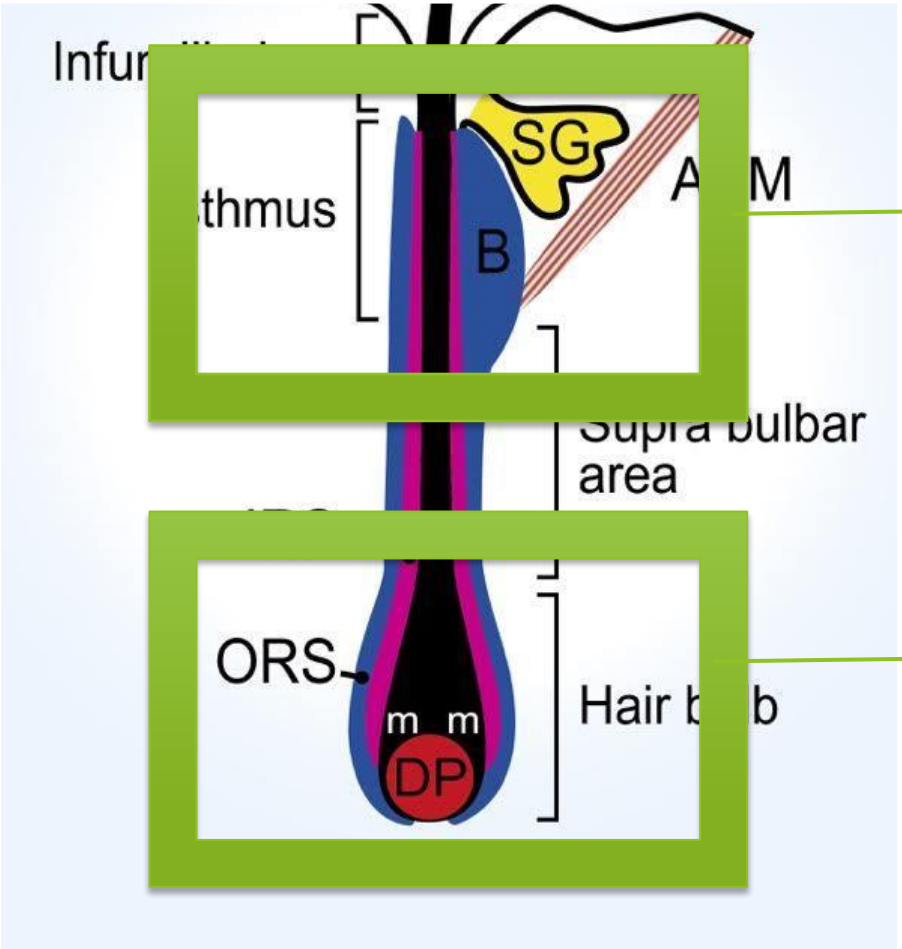


Stem Cell Reports 2015; 4: 961-966



A special environment which permits protection from the host immune system

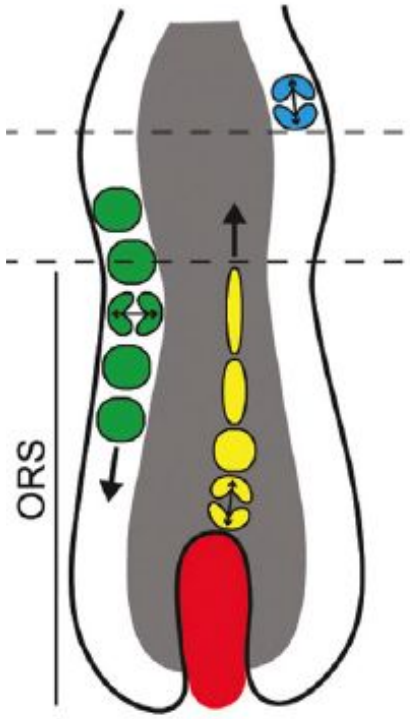
Concept of Immune Privilege



Permanent immune privilege

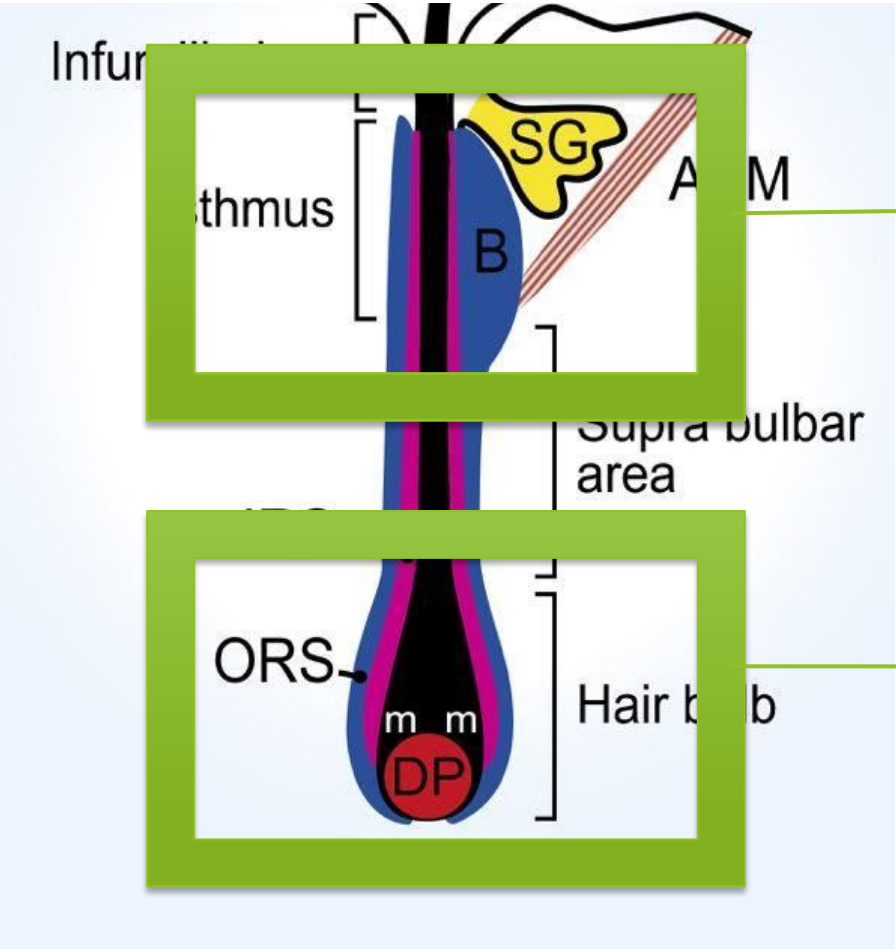
Temporary immune privilege during anagen phase

Anagen phase



Immune injury

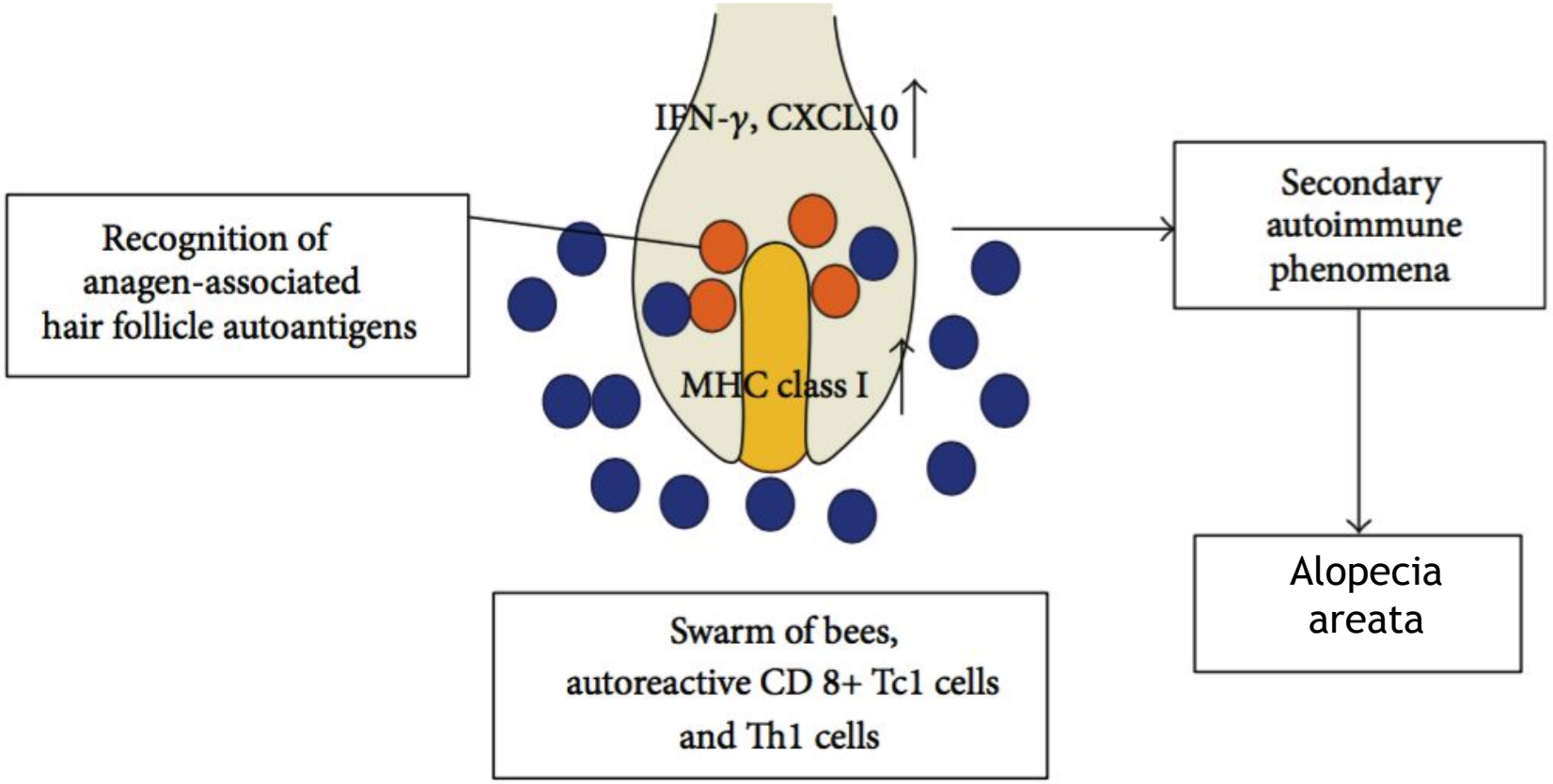
Immune Privilege Collapse



Lichen Planopilaris

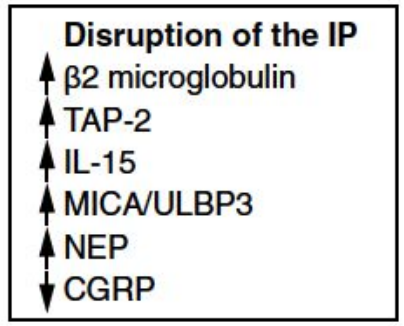
Alopecia areata

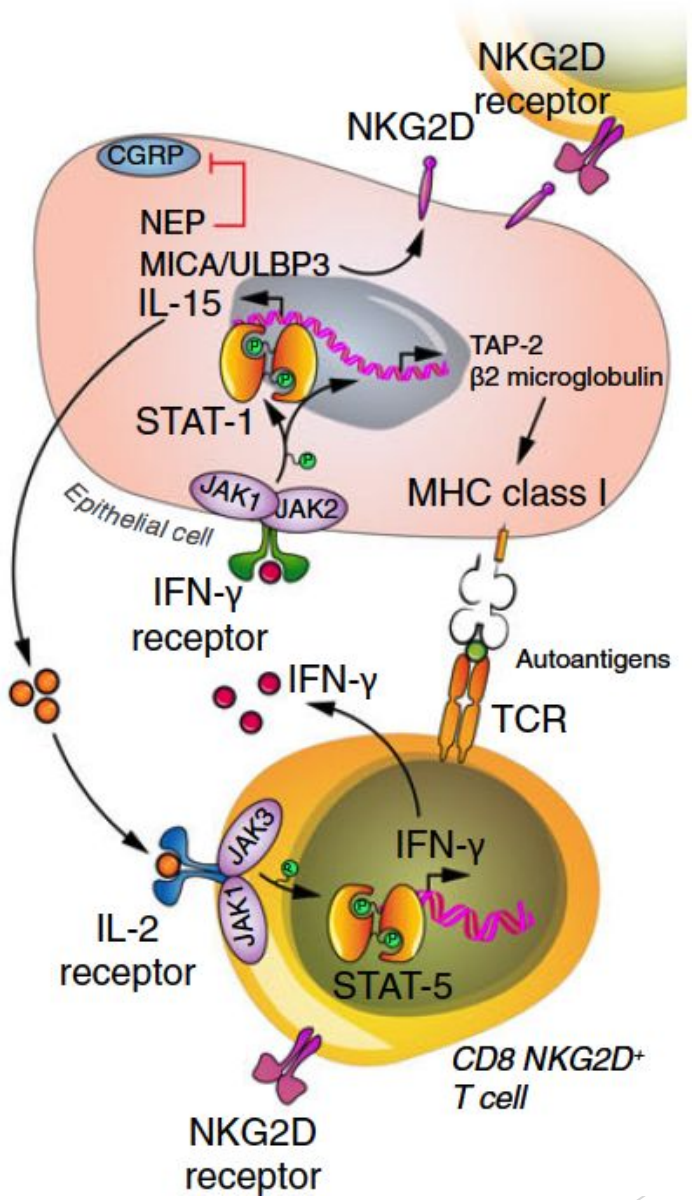
Immune privilege collapse in Alopecia areata



Clinical and Development Immunology 2013; 1: 1–6.

Immune privilege collapse in alopecia areata





Journal of European Academy of Dermatology and Venereology 2016;30: 1373–1378

Journal of Pathology
J Pathol 2013; **231**: 236–247
Published online in Wiley Online Library
(wileyonlinelibrary.com) DOI: 10.1002/path.4233

ORIGINAL PAPER

Lichen planopilaris is characterized by immune privilege collapse of the hair follicle's epithelial stem cell niche

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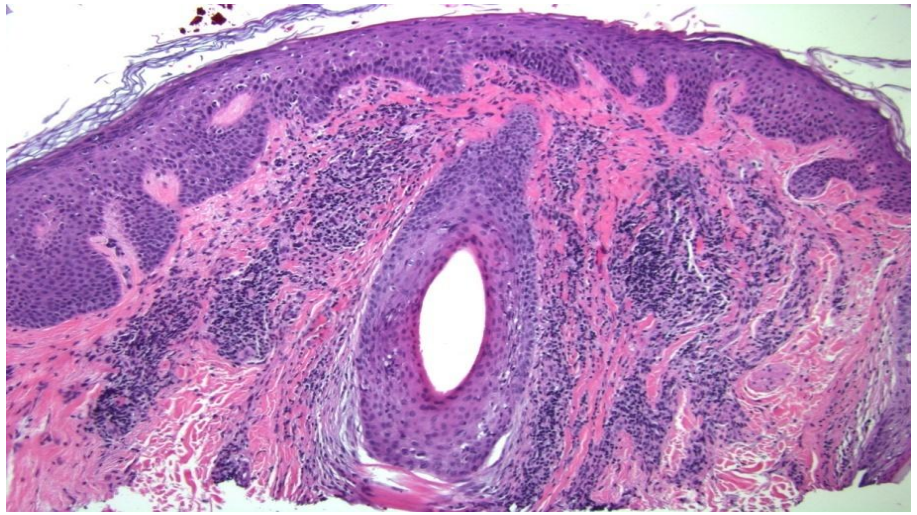
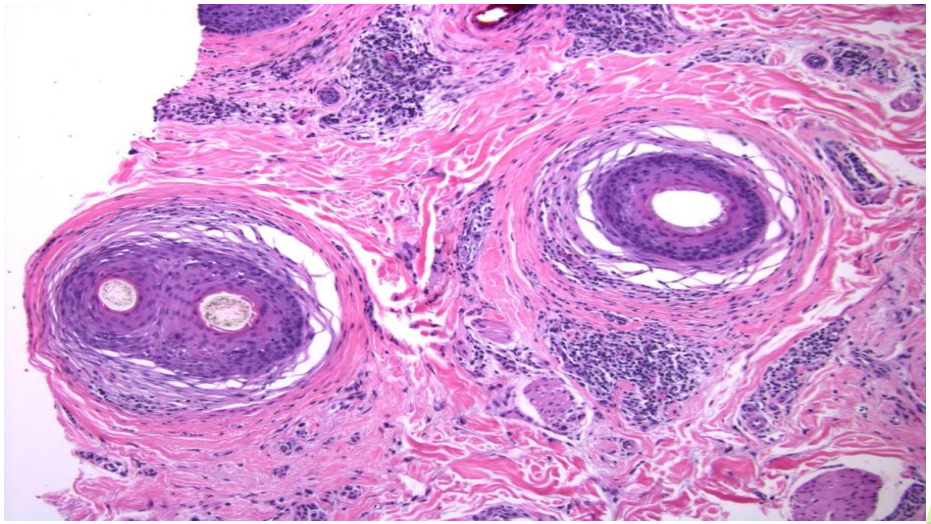
*"These novel findings raise the possibility that LPP represents an autoimmune disease in whose pathogenesis **IFNγ-induced bulge immune privilege collapse** plays an important role."*

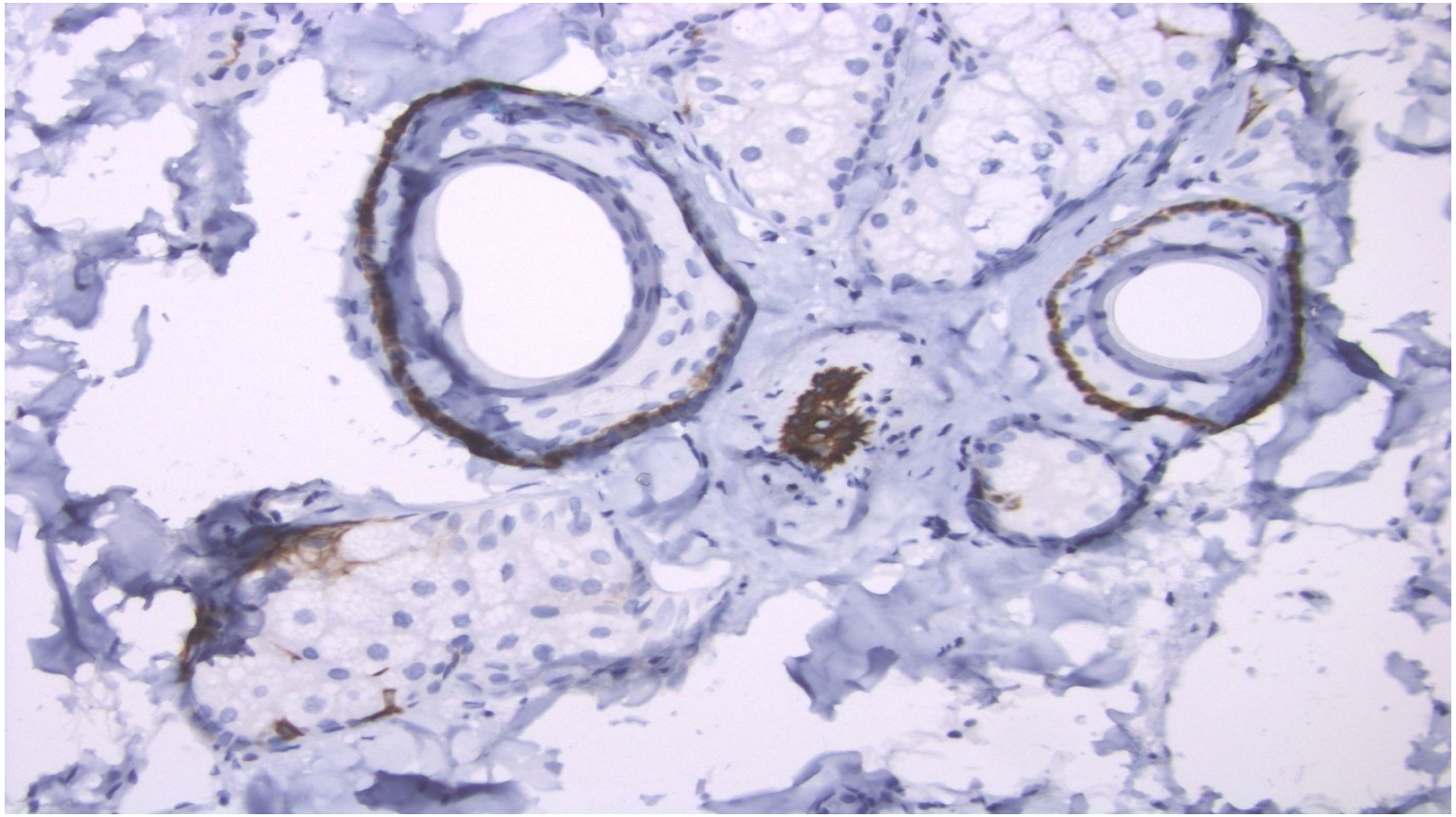
Lichen Planopilaris (LPP)



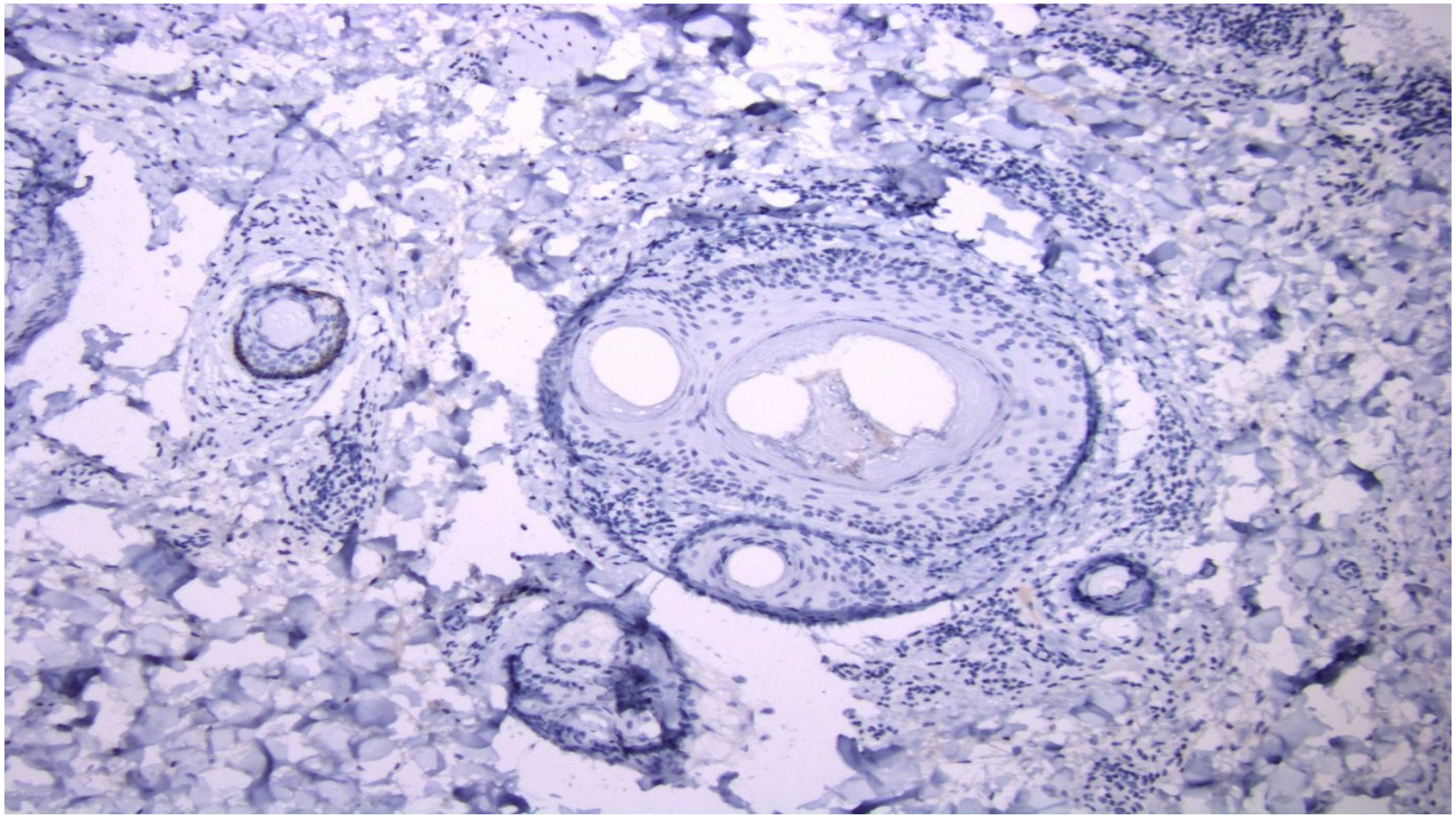


Loss of catagen/telogen phase follicles

Cytokeratin 15+ Stem Cells

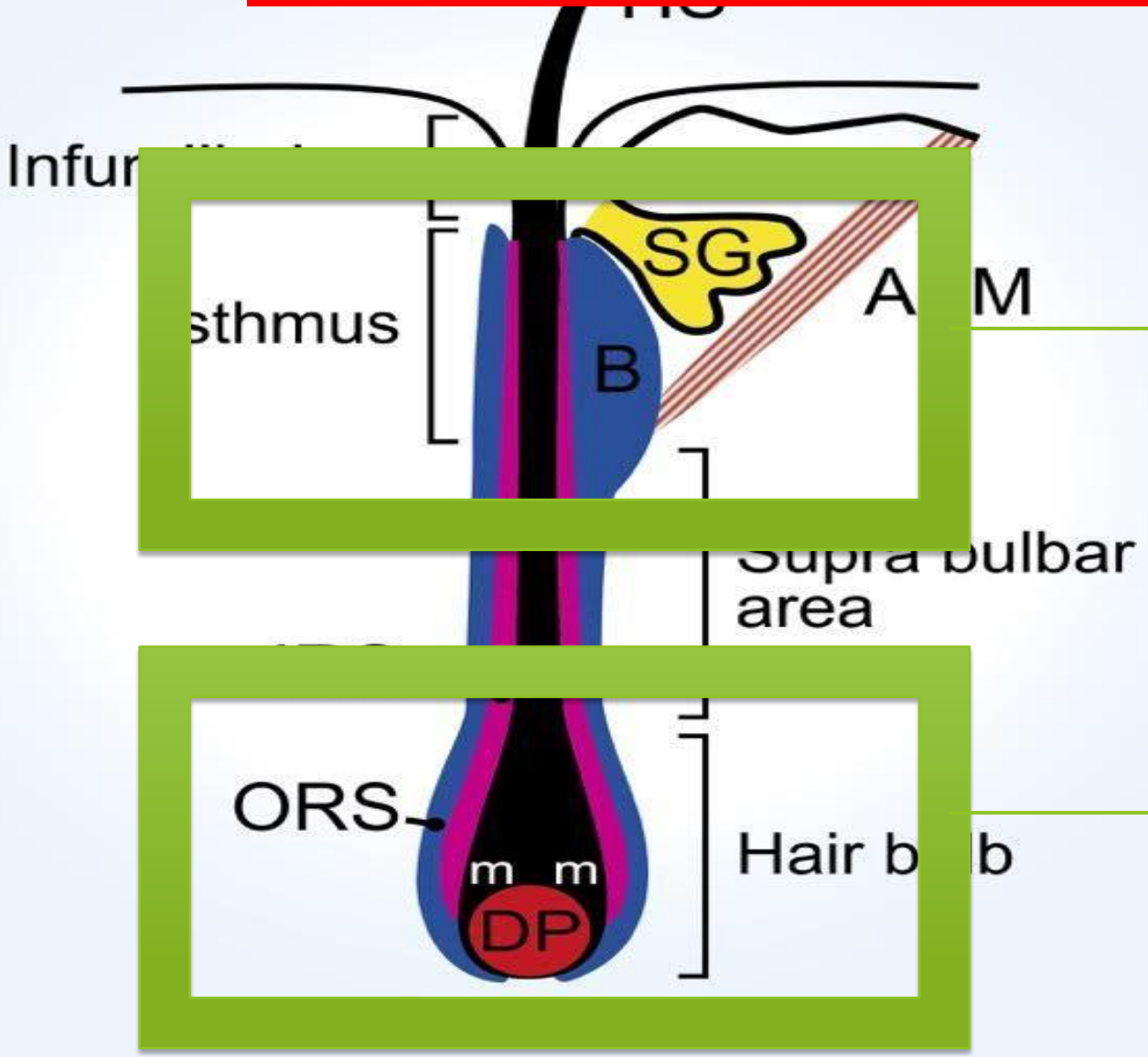


CK15 Loss in Lichen Planopilaris



Habashi-Daniel et al. Absence of catagen/telogen phase and loss of cytokeratin 15 expression in hair follicles in lichen planopilaris. JAAD 71:969-72, 2014.

AA and LPP-like pattern



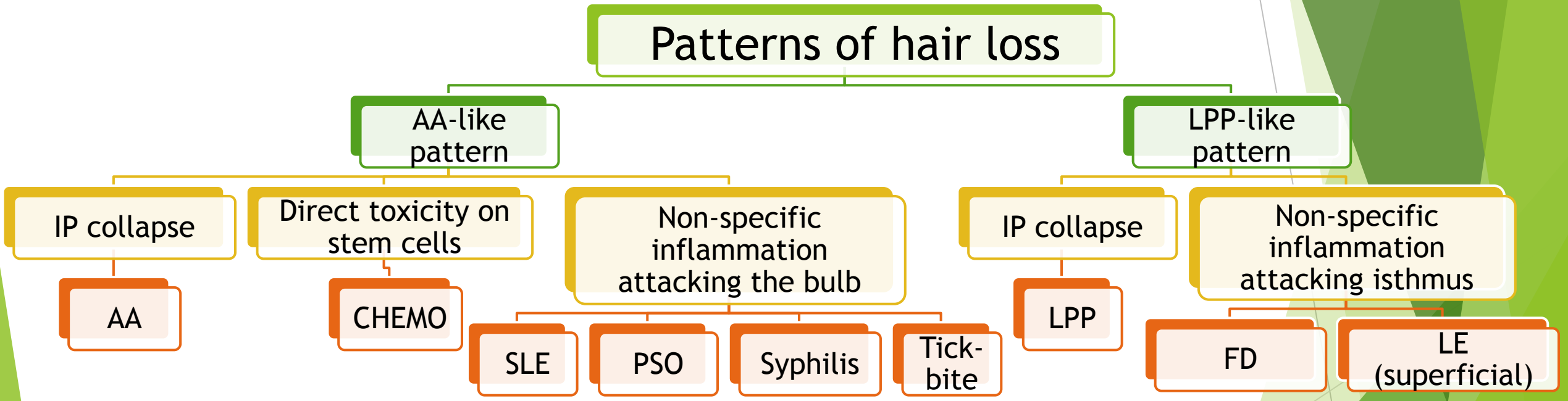
LPP-like pattern

1. Absence of follicular miniaturization
2. No or few CT hair

AA-like pattern

1. Marked follicular miniaturization
2. Increase of CT hair

New Classification



Key Points

I. Before signing out as AA:

1. Check the epidermis
2. Antinuclear antibodies
3. Syphilis immunostain and serology

II. New, unifying concept of alopecia based upon hair follicle immunology and follicular cell kinetics rather than the nature of the inflammatory cell infiltrate.

Lichen planopilaris versus Central centrifugal cicatricial alopecia (CCCA)

Table I. Demographic data on 51 adults with CCCA and LPP		
Variables	**CCCA (n=27), n**	**LPP (n=24), n**
Sex		
Male	2	2
Female	26	22
Age distribution		
21-30	5	2
31-40	5	5
41-50	4	1
51-60	4	8
61-70	7	6
71-80	2	1
81+	0	1
Race		
African/Black	27	7
Caucasian	0	16
Other	0	1
Clinical		
Central alopecia	27	0
Patchy alopecia	0	11
Diffuse alopecia	0	11
Frontal alopecia	0	2

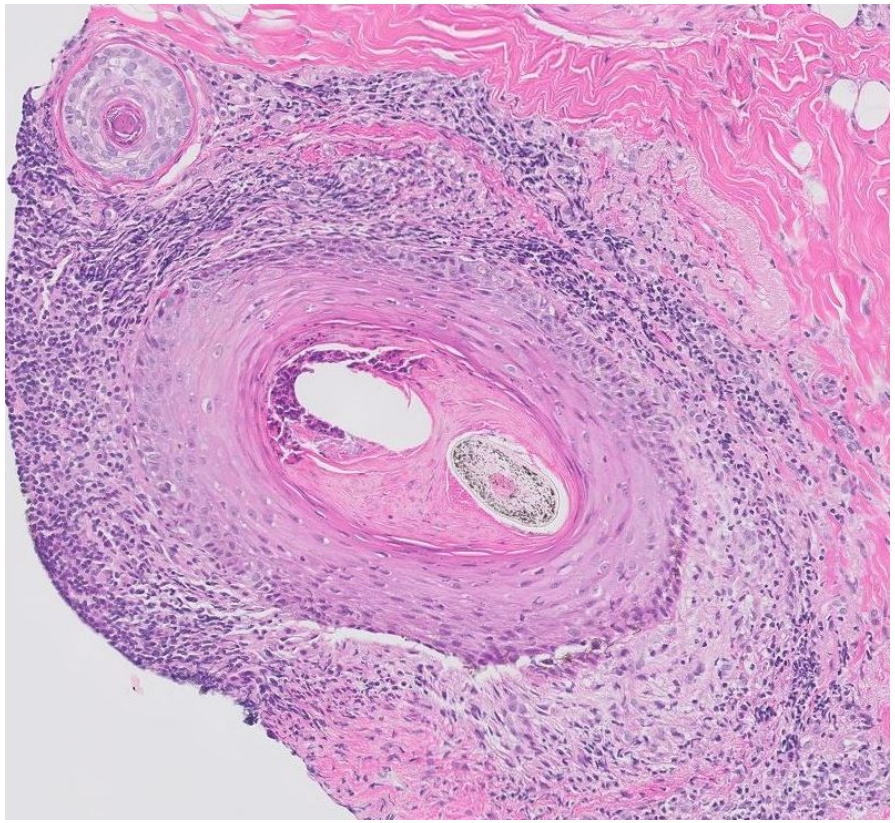
Lichen planopilaris versus Central centrifugal cicatricial alopecia (CCCA)

Table II. Histologic features of samples of CCCA and LPP		
Histologic feature	**CCCA (n=27), n**	**LPP (n=24), n**
Perifollicular fibrosis		
Negative	5	0
Trace	4	2
+	2	3
++	7	11
+++	8	8
Lymphocytic infiltrate density		
Negative	2	0
Trace	0	1
+	11	4
++	8	13
+++	6	6
Squamatization of the follicular basalis		
Present	20	22
Absent	7	2
T:V ratio		
4:1	8	4
3:1	1	0
2.5:1	0	1
2:1	3	2
1.5:1	0	1
1:1	8	4
1:2	6	6
1:3	1	3
1:4	0	3
Catagen-telogen shift (%)		
0	16	10
1-5	1	6
6-10	7	7
11-15	2	0
16-20	0	0
21-25	1	1
>25	0	0

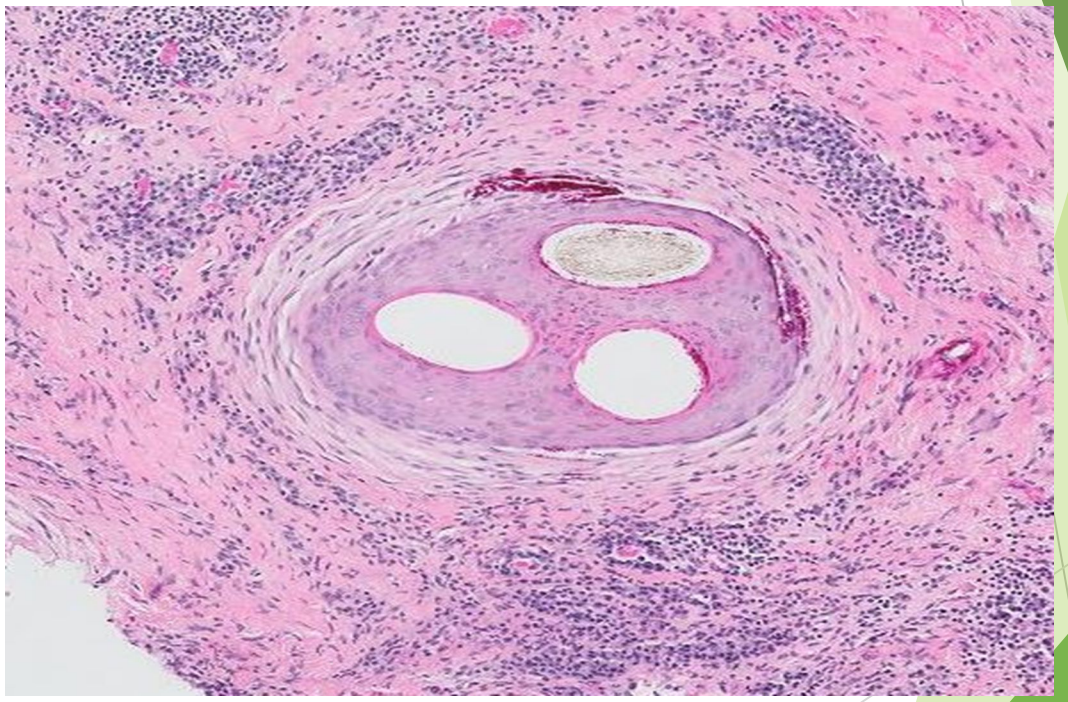
Lichen planopilaris versus Central centrifugal cicatricial alopecia (CCCA)

Tablet III. Immunohistochemical features of samples of CCCA and LPP		
Immunohistochemical staining	**CCCA (n=27), n**	**LPP (n=24), n**
CD4		
Negative	0	0
Trace	6	1
+	7	5
++	7	14
+++	7	4
CD8		
Negative	1	1
Trace	14	5
+	11	15
++	1	3
+++	0	0
CD20		
Negative	9	4
Trace	8	11
+	5	3
++	3	5
+++	2	1
CD123		
Negative	18	15
Trace	7	8
+	2	1
++	0	0
+++	0	0
MPO		
Negative	22	16
Trace	4	6
+	0	2
++	1	0
+++	0	0
CD68		
Negative	5	1
Trace	18	17
+	4	6
++	0	0
+++	0	0
CD15		
Absent	24	24
Present	3	0

CCCA = LPP Histologically

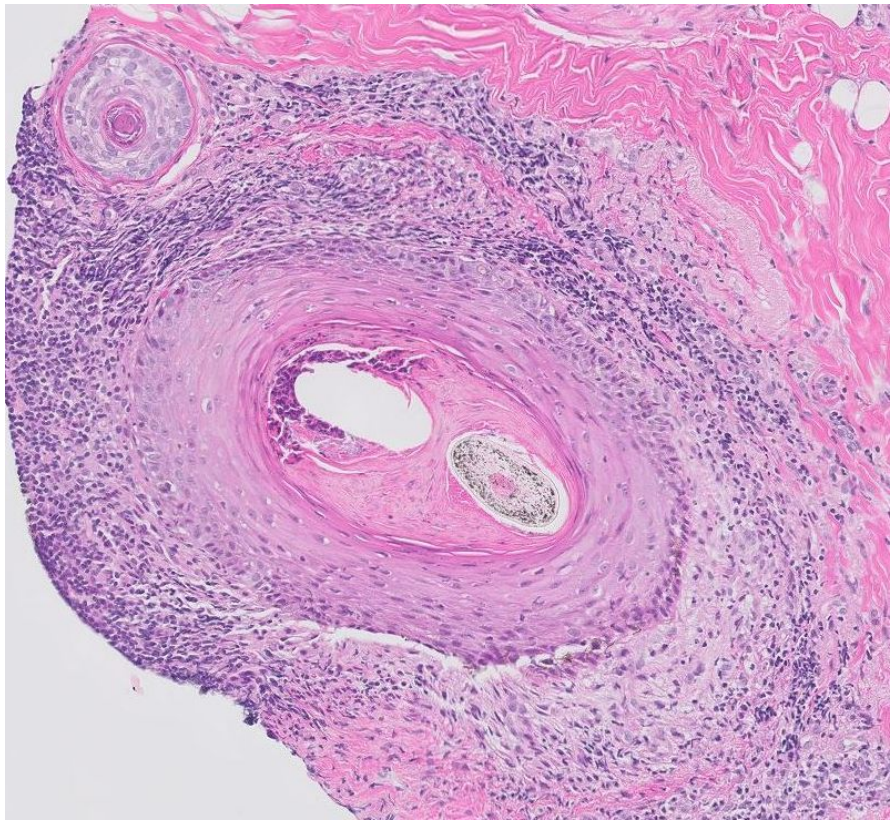


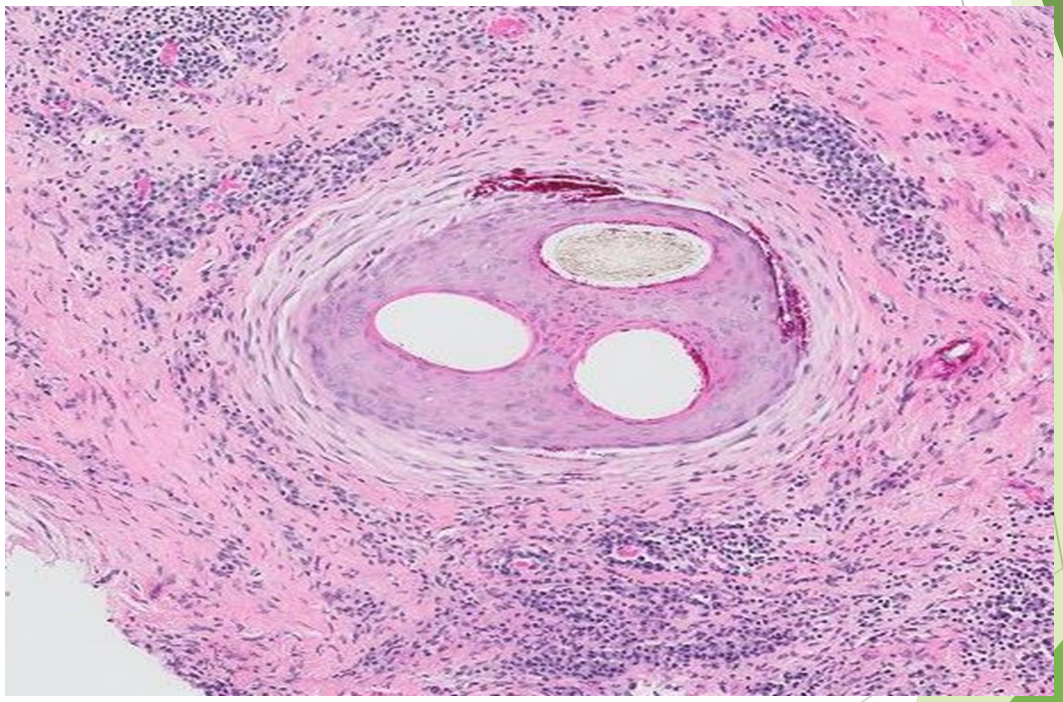
CCCA



LPP

Premature desquamation of the inner root sheath
=
Squamotization of the follicular epithelium

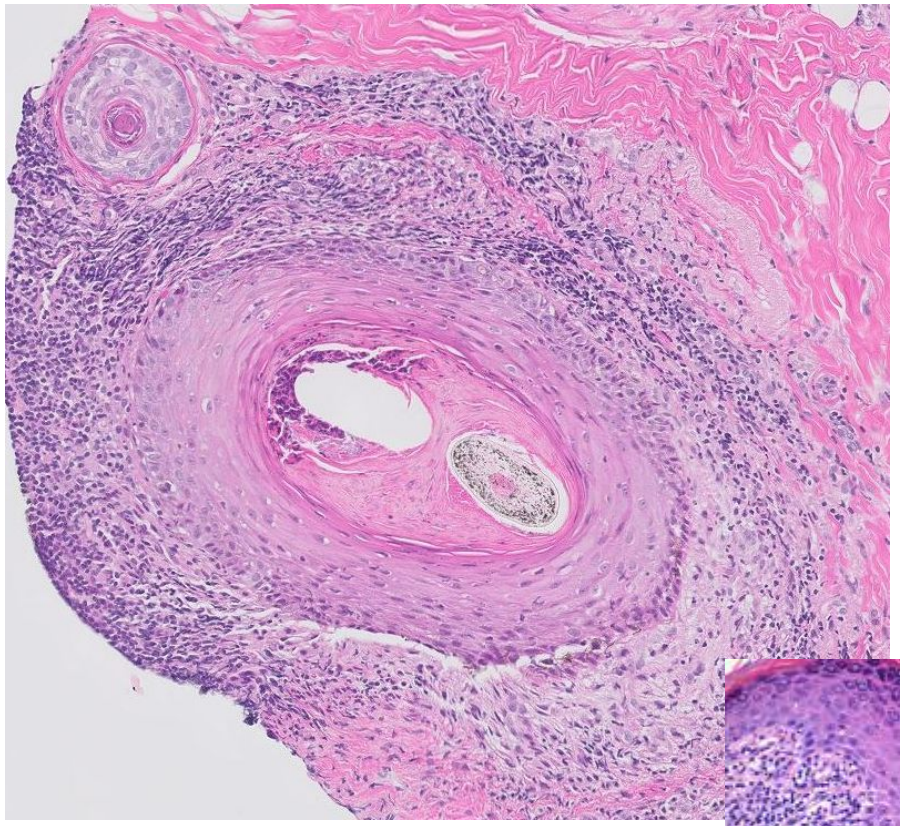


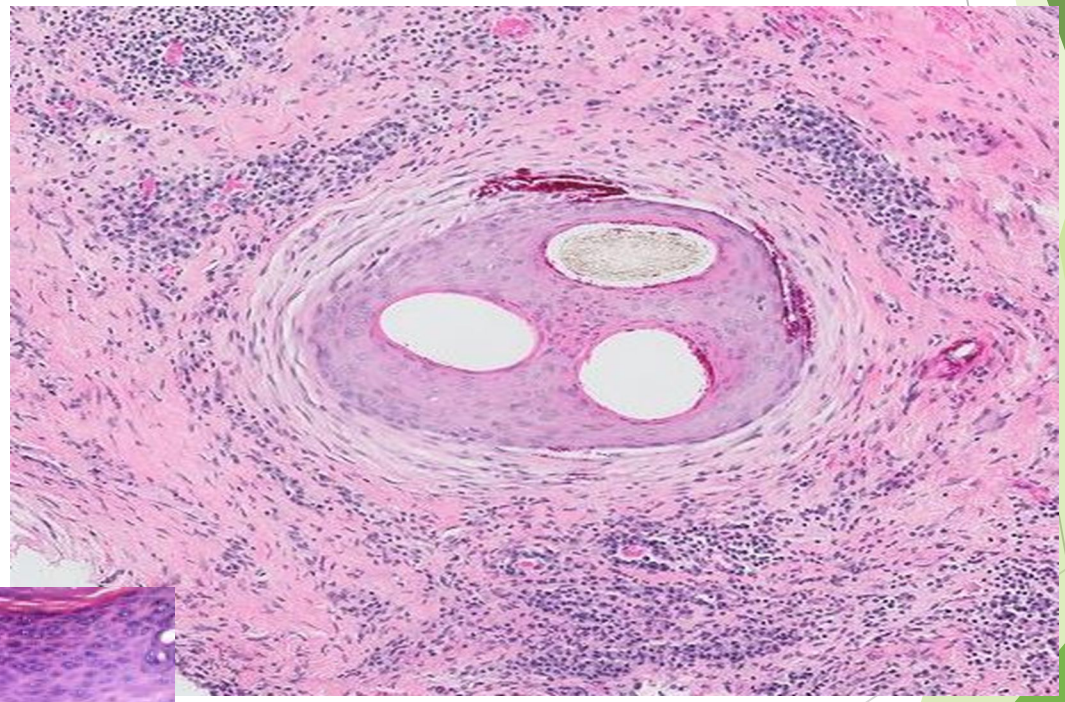


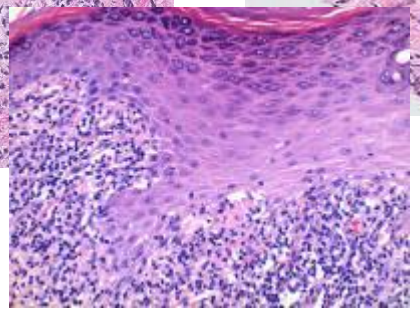
Premature desquamation of the inner root sheath

=

Squamotization of the follicular epithelium

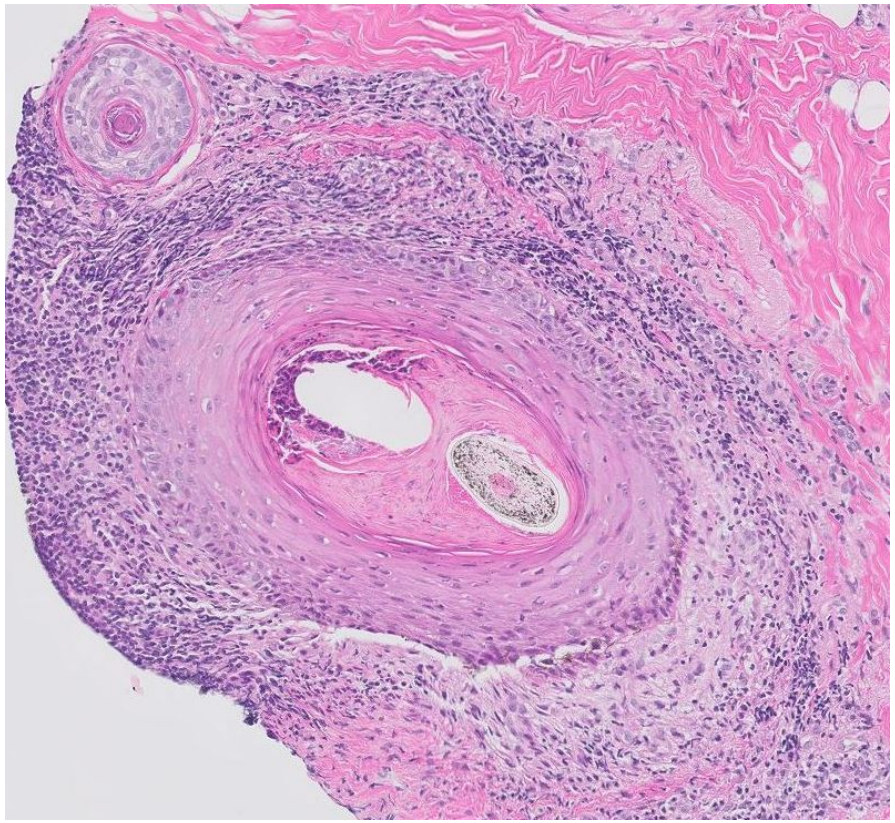




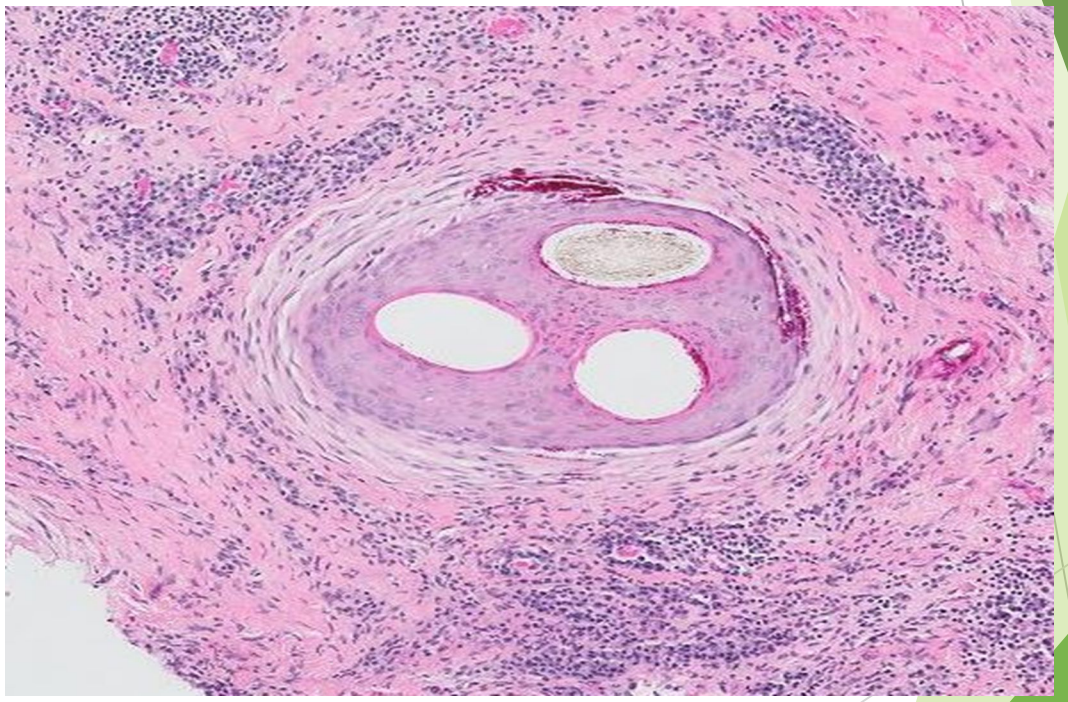


Lichen Planus

CCCA is LPP which has been induced by hair care practices in women of African descent.

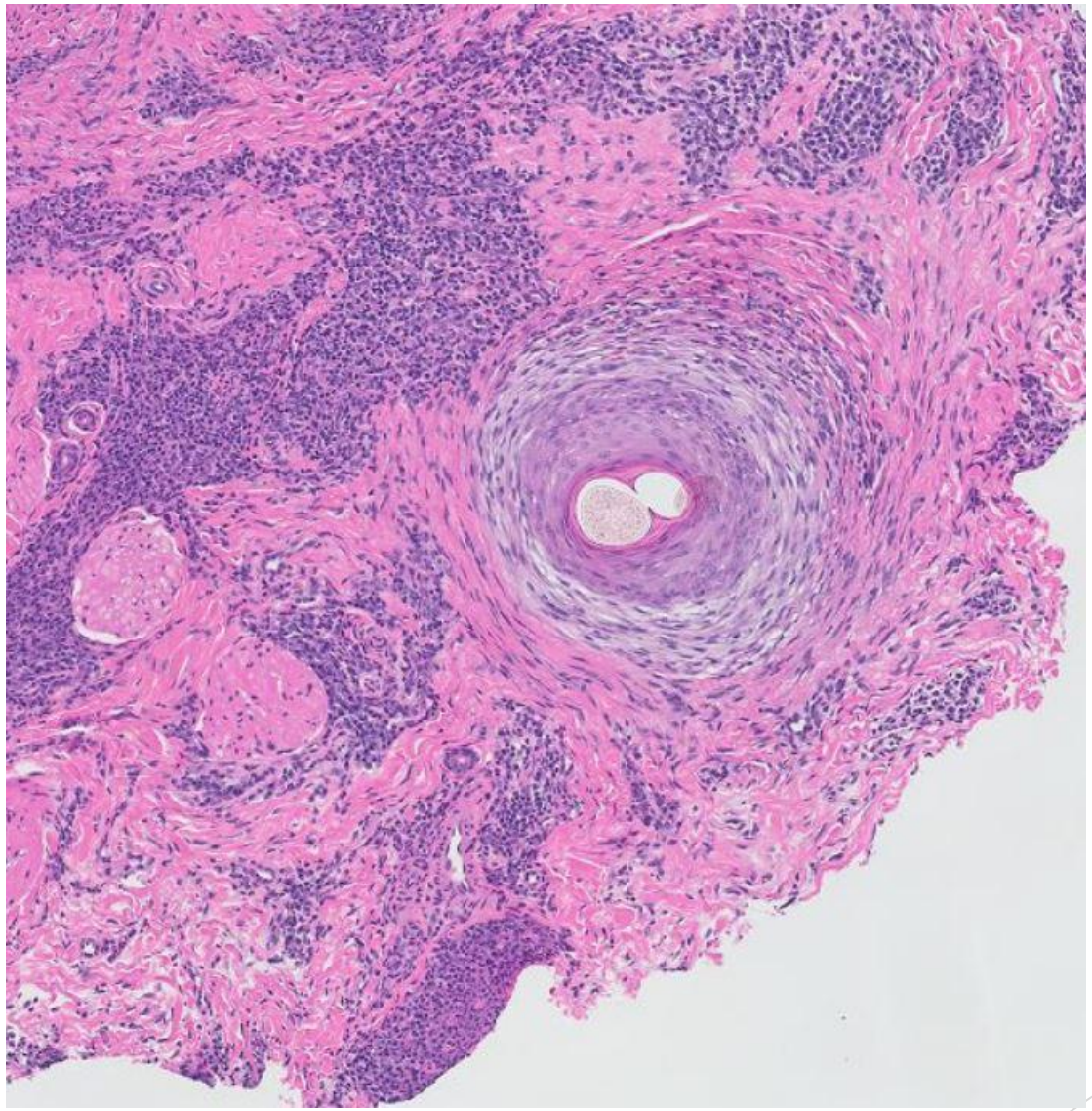


CCCA



LPP

Folliculitis decalvans or LPP?



Folliculitis decalvans or LPP?

- Insert myeloperoxidase

J Cutan Pathol. 2017 Apr;44(4):352-357. doi: 10.1111/cup.12892. Epub 2017 Jan 27.

Epidermal psoriasiform hyperplasia, an unrecognized sign of folliculitis decalvans: A histological study of 26 patients.

Matard B[1], Cavelier-Balloy B[2], Reygagne P[1].

Author information

Abstract

BACKGROUND: Follicular hyperkeratosis along with hyperplasia of the follicular and interfollicular epithelia are major histopathological characteristics of hidradenitis suppurativa (HS). The presence of an occasional thickening of lesional skin in some folliculitis decalvans (FD) patients and histological similarities between FD and HS led us to look for epidermal hyperplasia and follicular hyperkeratosis in FD patients.

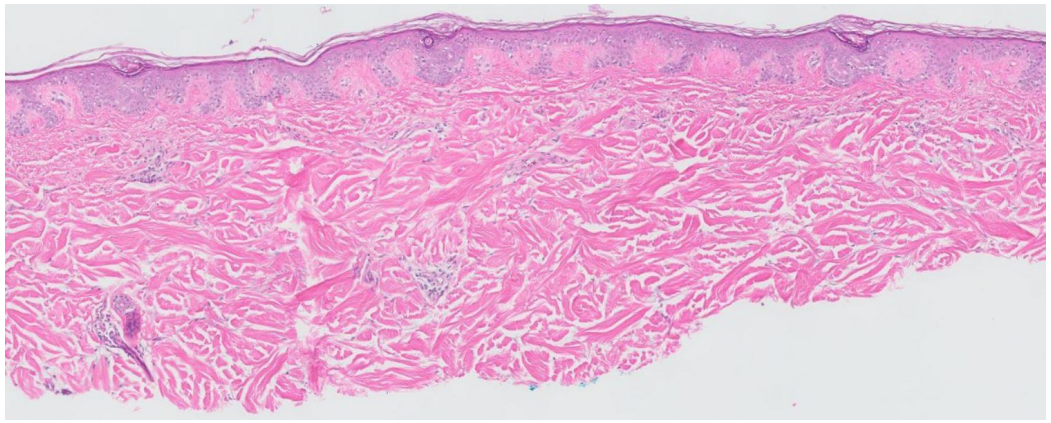
PATIENTS AND METHOD: We performed a retrospective histological analysis of 26 patients with FD.

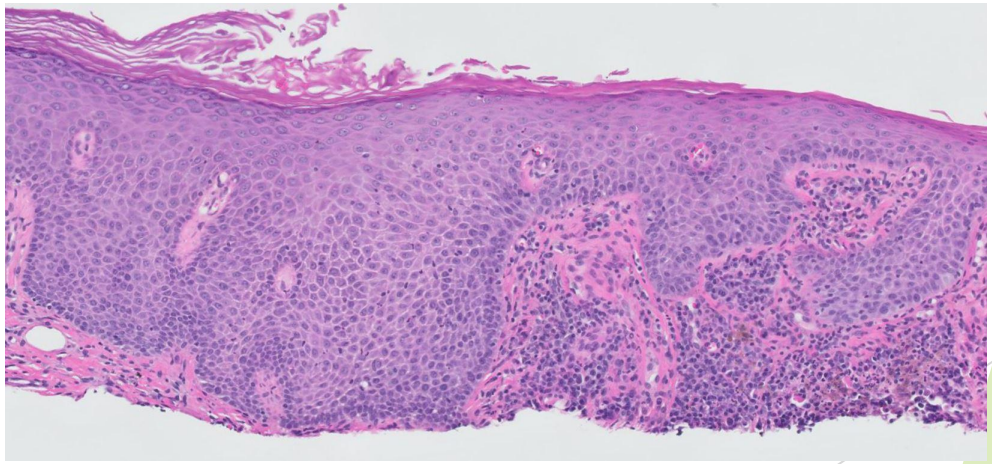
OBJECTIVE: We sought to find out whether the presence of hyperplasia of the interfollicular epidermis and of the follicular epithelia could be verified in FD, with reference to the work of von Laffert et al. concerning HS.

RESULTS: The main quantitative and qualitative data were: follicular hyperkeratosis (77%), hyperplasia of the interfollicular epidermis (92%) with a psoriasiform aspect (88%), atrophy of the follicular epithelia (85%), plasma cells in infiltrate (92%) in large quantities (42%), follicular microcysts (60%), atrophy of the sebaceous glands (85%) and polytrichia (54%).

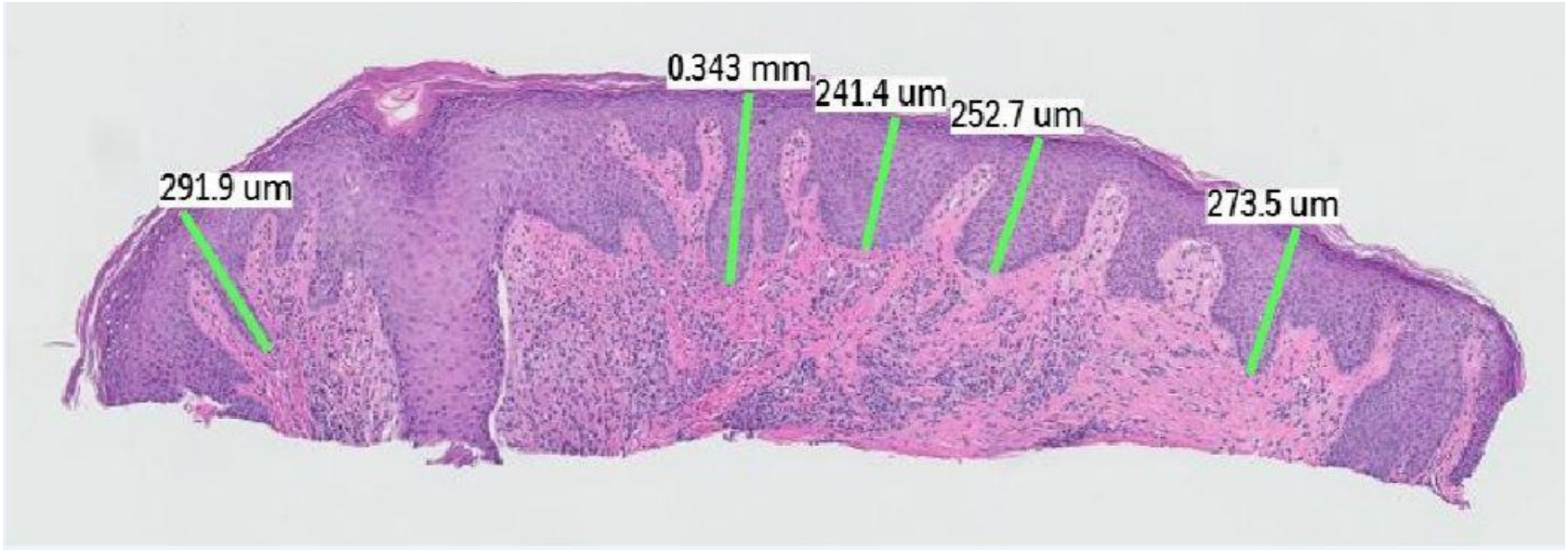
CONCLUSION: Epidermal hyperplasia, sometimes psoriasiform and follicular microcysts, are significant histological signs of FD, which have been ignored until now although they seem very common.

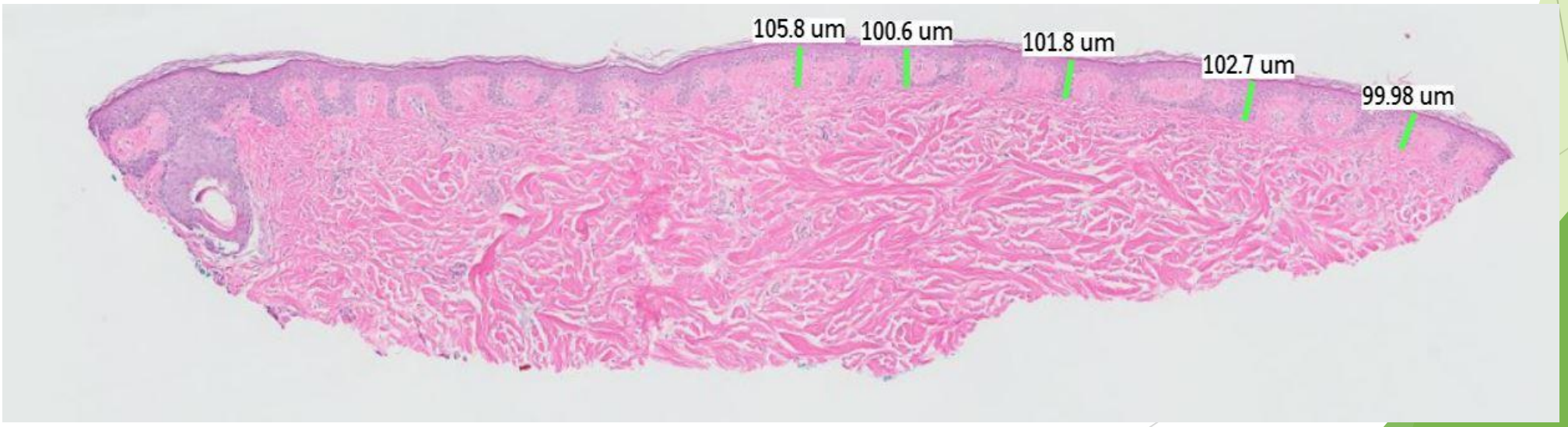
Folliculitis decalvans or LPP?





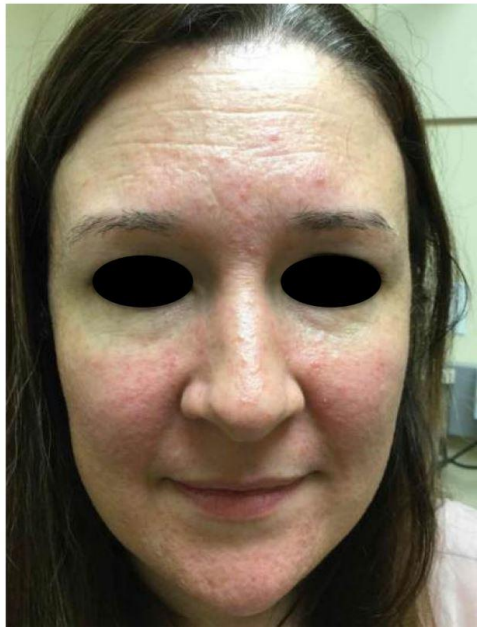
Folliculitis decalvans or LPP?





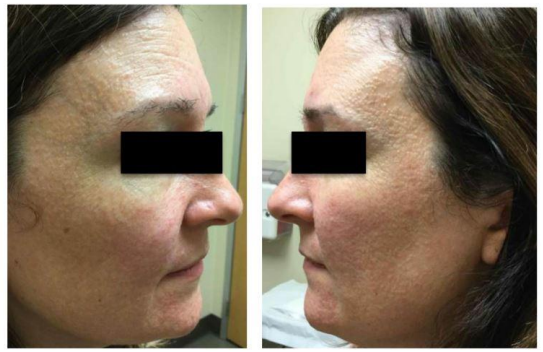
Clinical case

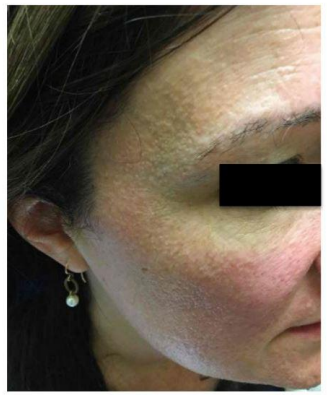
- 7/2016
- 39 yo female
- Erythema, papules and pustules on forehead, cheeks and chin
- Rosacea
  - Doxy 100 mg BID
  - Metrogel

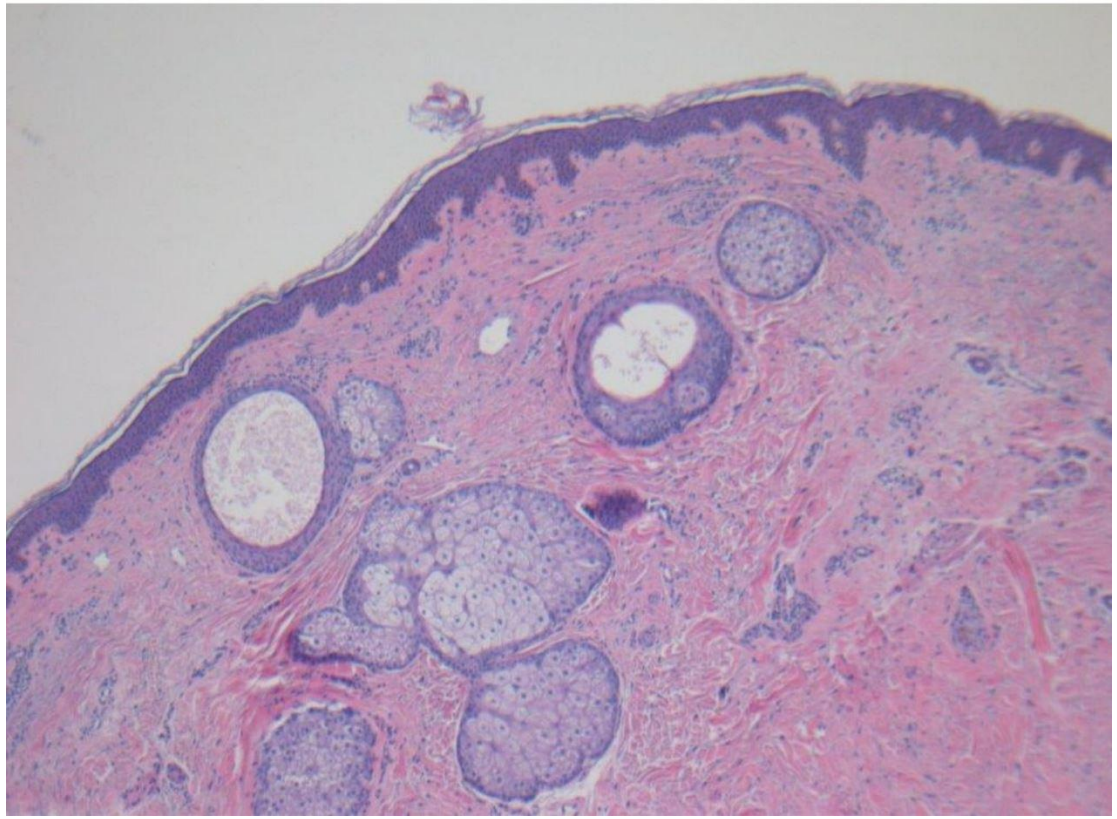


Clinical case

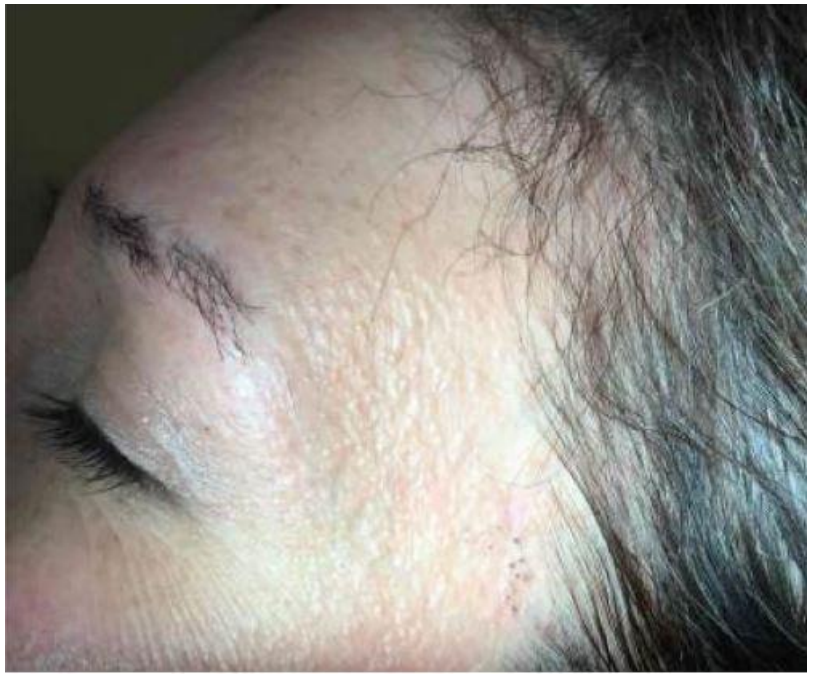
- 9/2016
- Erythema and pustules resolved
- Changes in texture of skin “roughness”
- Ddx:
  - Keratosis pilaris atrophicans (KPa), fibrofolliculomas, comedones??



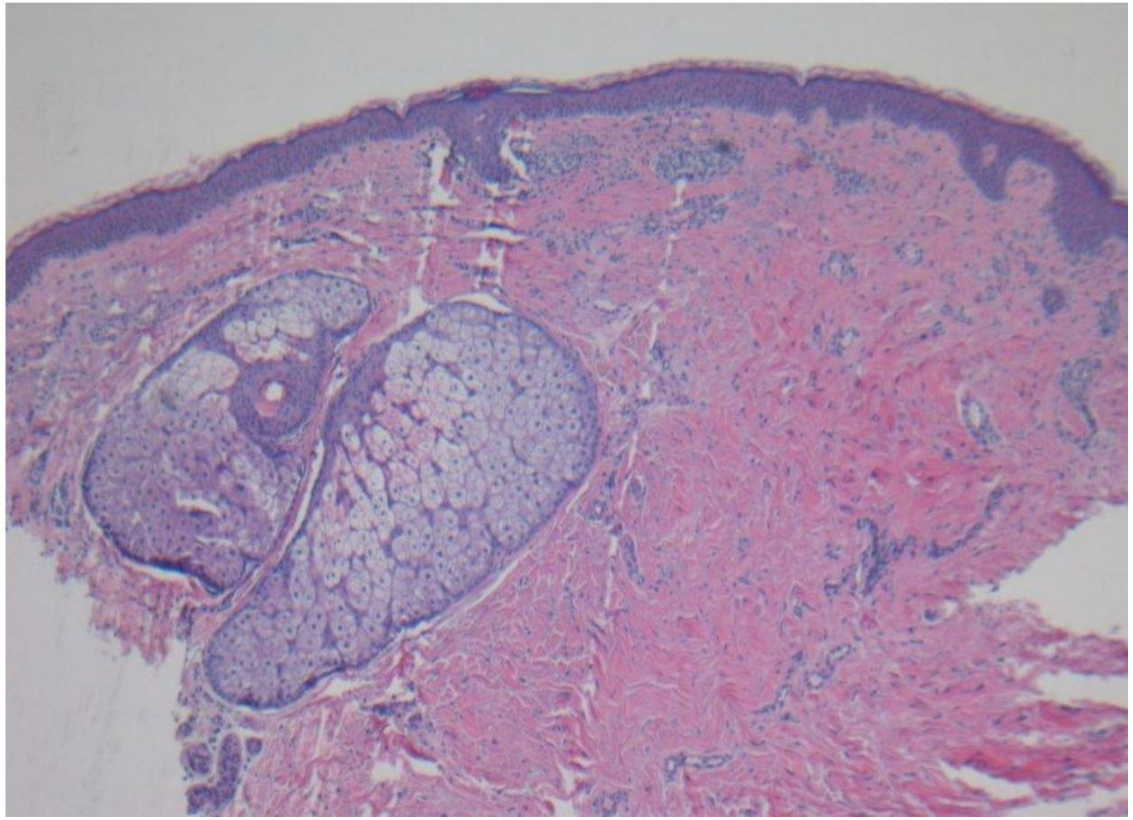




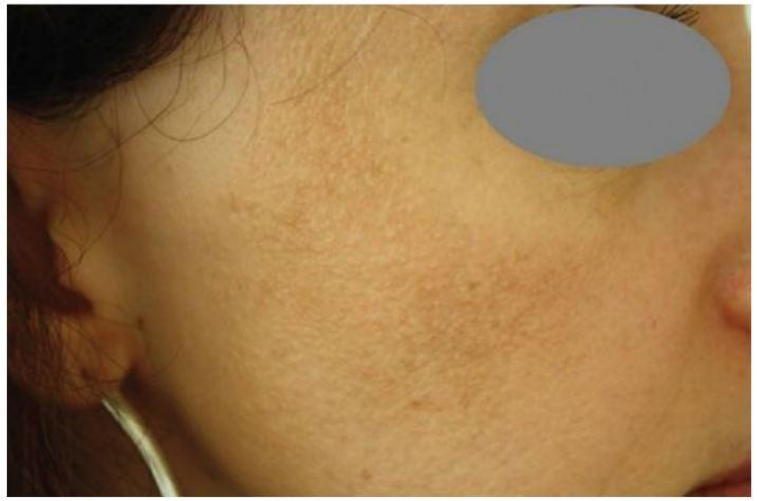
3rd Visit--Frontal Fibrosing Alopecia

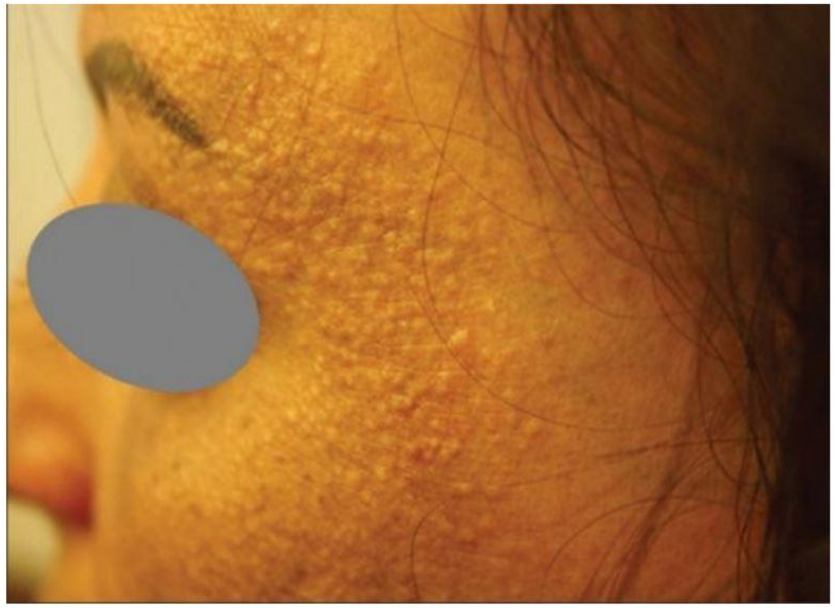


Frontal Fibrosing Alopecia (Variant of LPP?)



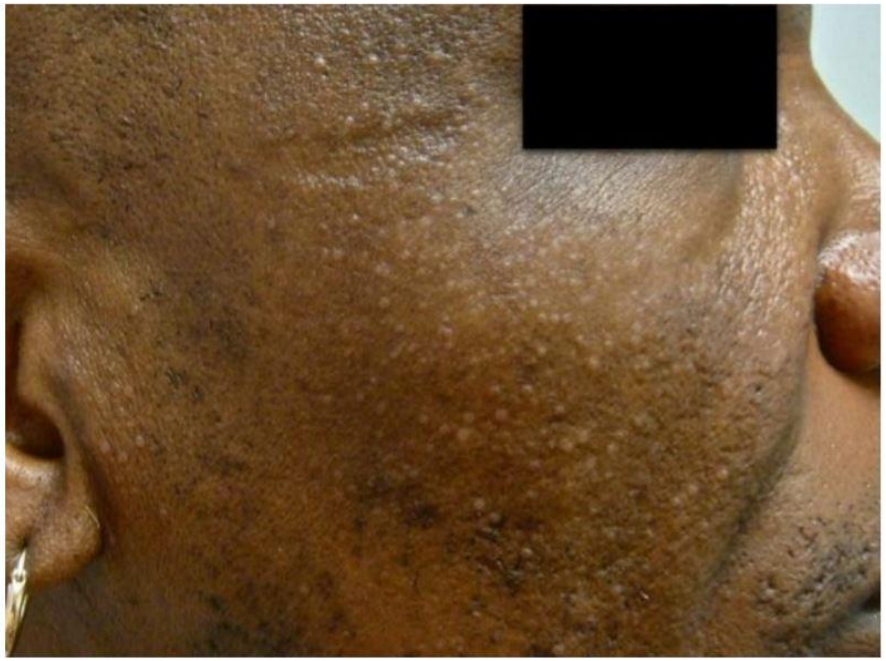
Facial Papules in Fibrosing Alopecia in a Pattern Distribution

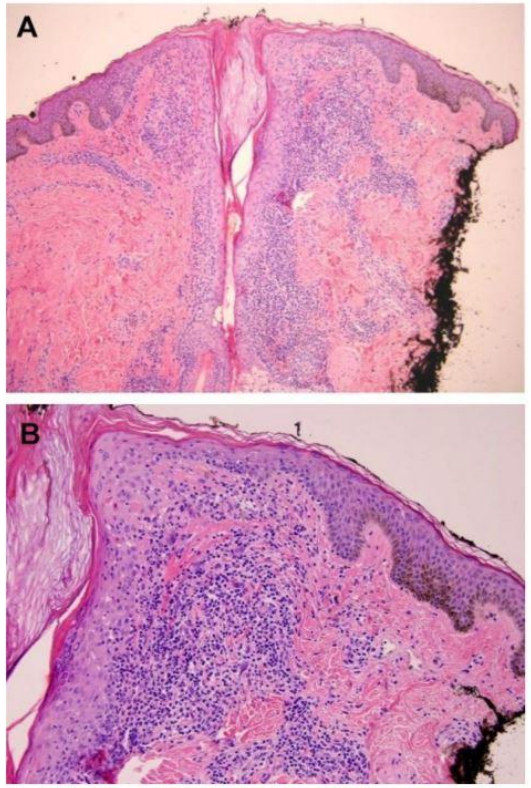




Ramanauskaite A. Facial Papules in Fibrosing Alopecia in a Pattern Distribution (Cicatricial Pattern Hair Loss)Int J Trichology. 2015 Jul-Sep; 7(3): 119–122.

A papular eruption on the face. A distinct subtype of lichen planopilaris?

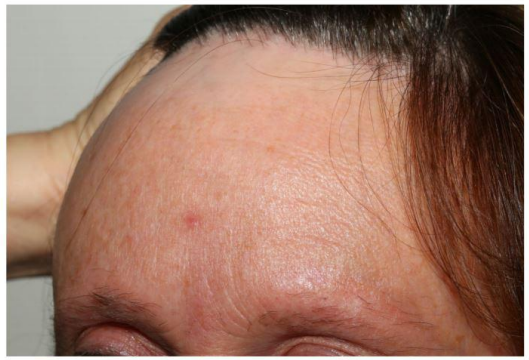


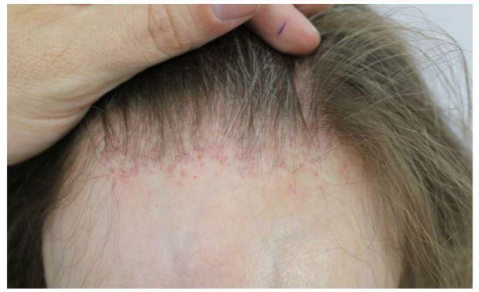


Andrews ID etal. Photoletter to the editor: A papular eruption on the face. A distinct subtype of lichen planopilaris? J Dermatol Case Rep. 2013 Mar 30; 7(1): 23–24.

Frontal Fibrosing Alopecia (FFA)

- Kossard first described frontotemporal recession of the scalp associated with scarring in six women in 1994
- Scalp: uniformly pale with loss of follicular orifices, and perifollicular erythema
- Frontotemporal recession with scarring
- Reduction or complete loss of eyebrows





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Br J Dermatol. 2016 Oct;175(4):762-7. doi: 10.1111/bjd.14535. Epub 2016 Jun 30.

Frontal fibrosing alopecia: possible association with leave-on facial skin care products and sunscreens; a questionnaire study.

Aldoori N[1], Dobson K[1], Holden CR[1], McDonagh AJ[1], Harries M[2], Messenger AG[3].

Author information

Abstract

BACKGROUND: Since its first description in 1994, frontal fibrosing alopecia (FFA) has become increasingly common, suggesting that environmental factors are involved in the aetiology.

OBJECTIVES: To identify possible causative environmental factors in FFA.

METHODS: A questionnaire enquiring about exposure to a wide range of lifestyle, social and medical factors was completed by 105 women with FFA and 100 age- and sex-matched control subjects. A subcohort of women with FFA was patch tested to an extended British standard series of allergens.

RESULTS: The use of sunscreens was significantly greater in the FFA group compared with controls. Subjects with FFA also showed a trend towards more frequent use of facial moisturizers and foundations but, compared with controls, the difference in frequencies just failed to reach statistical significance. The frequency of hair shampooing, oral contraceptive use, hair colouring and facial hair removal were significantly lower in the FFA group than in controls. Thyroid disease was more common in subjects with FFA than controls and there was a high frequency of positive patch tests in women with FFA, mainly to fragrances.

CONCLUSIONS: Our findings suggest an association between FFA and the use of facial skin care products. The high frequency of sunscreen use in patients with FFA, and the fact that many facial skin care products now contain sunscreens, raises the possibility of a causative role for sunscreen chemicals. The high frequency of positive patch tests in women with FFA and the association with thyroid disease may indicate a predisposition to immune-mediated disease.

Frontal fibrosing alopecia in men: an association with facial moisturizers and sunscreens

DOI: 10.1111/bjd.15311

Dear Editor, Frontal fibrosing alopecia (FFA) was first described by Kossard in 1994 in six postmenopausal women.[1] FFA remained rare during the 1990s, but in the last 10–15 years it has become increasingly common, a phenomenon observed worldwide. The recent onset and apparently rising incidence of FFA suggest involvement of environmental factors in the aetiology. We previously reported a questionnaire study in women with FFA that asked about a wide range of medical, social and environmental exposures. The results suggested an association between FFA and leave-on facial products, including moisturizers and sunscreens.[2] However, although the regular use of moisturizers was greater in women with FFA, these products are used by most women and we were unable to show a significant difference in their use between women with FFA and similarly aged controls. The use of primary sunscreens was significantly greater among women with FFA than in controls, but we were not able to assess whether patients were also exposed to sunscreens from other sources.

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As FFA is rare in men, patients were recruited from across the U.K. and one case was recruited from Belgium. In all cases the diagnosis was made by a clinician with special expertise in hair disease, and it was supported by histology in most cases. The clinical diagnosis was based on scarring alopecia affecting the frontal hairline causing recession of the hairline. Additional features included loss of eyebrows, follicular erythema of the frontal hairline and loss of sideburn and beard hair. Male controls aged 35–80 years were recruited from three sites (Sheffield, Salford and Glasgow). The patients completed a questionnaire similar to that used in our female study, but inviting more detailed information on the use of facial skincare and hair care products. Male patients with FFA were asked about the timing and distribution of hair loss, but otherwise the questionnaires completed by both groups were identical.

Seventeen men with FFA and 73 controls were recruited. The mean age of onset of hair loss in the patients with FFA was 54·5 years (range 35–77). All had loss of hair from the frontal hairline, and 16 (94%) had lost eyebrows. Twelve men (71%) reported loss of hair from the beard and 13 (76%) reported loss of hair from the limbs. All men with FFA reported using facial moisturizers, compared with 40% in the control group. Facial moisturizers were used at least twice a week by 94% of patients with FFA, but by only 32% of controls ($P < 0·001$) (Table 1). Sixteen patients reported using moisturizers for a period consistent with their use prior to the onset of FFA. The use of primary sunscreens by men with FFA was significantly more common than by controls. Overall 35% of men with FFA reported using a sunscreen at least twice a week all year round, compared with 4% of controls ($P = 0·0012$).

When moisturizers containing sunscreen chemicals were included in the analysis, at least 71% of men with FFA applied a product containing a sunscreen at least twice a week all year

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- Zinc oxide and titanium dioxide
- 50% of women in study has +Patch Test on a screen

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Alopécie frontale fibrosante post ménopausique : une réaction lichénoïde aux nanoparticules de dioxyde de titane présentes dans les follicules pileux?

Charlotte Gary[1], Florence Brunet-Possenti[1], Eduardo Marinho[2], Lydia Deschamps[2], Hester Colboc[3], Dominique Bazin[4], Vincent Descamps[1]

[1] Service de Dermatologie, Hôpital Bichat, Université Paris Diderot
[2] Service d'Anatomopathologie, Hôpital Bichat, Paris
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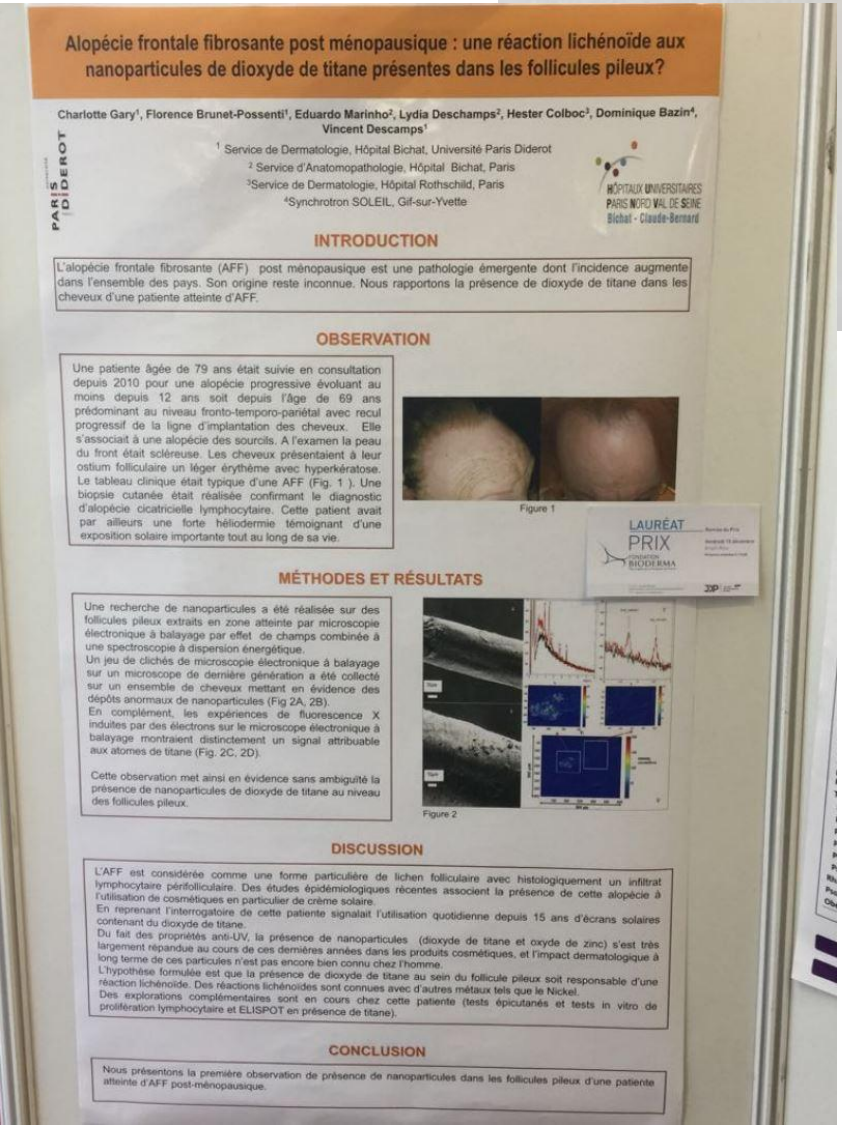


HÔPITAUX UNIVERSITAIRES PARIS NORD VAL DE SEINE Bichat - Claude-Bernard

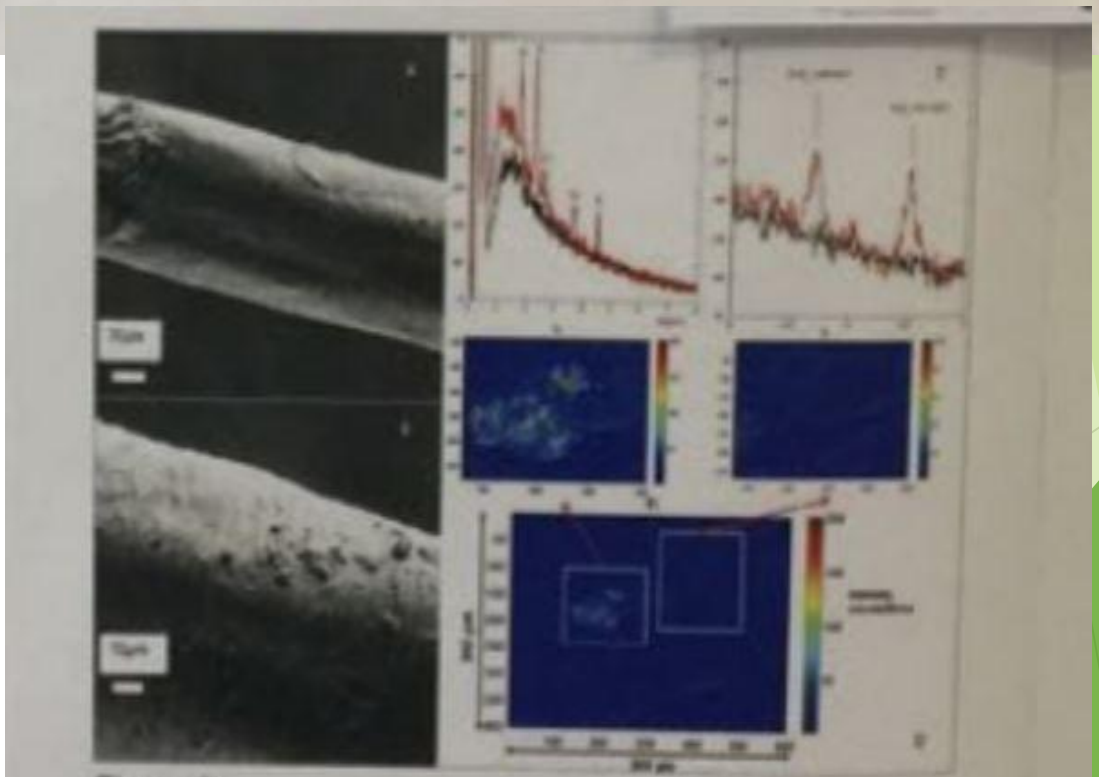
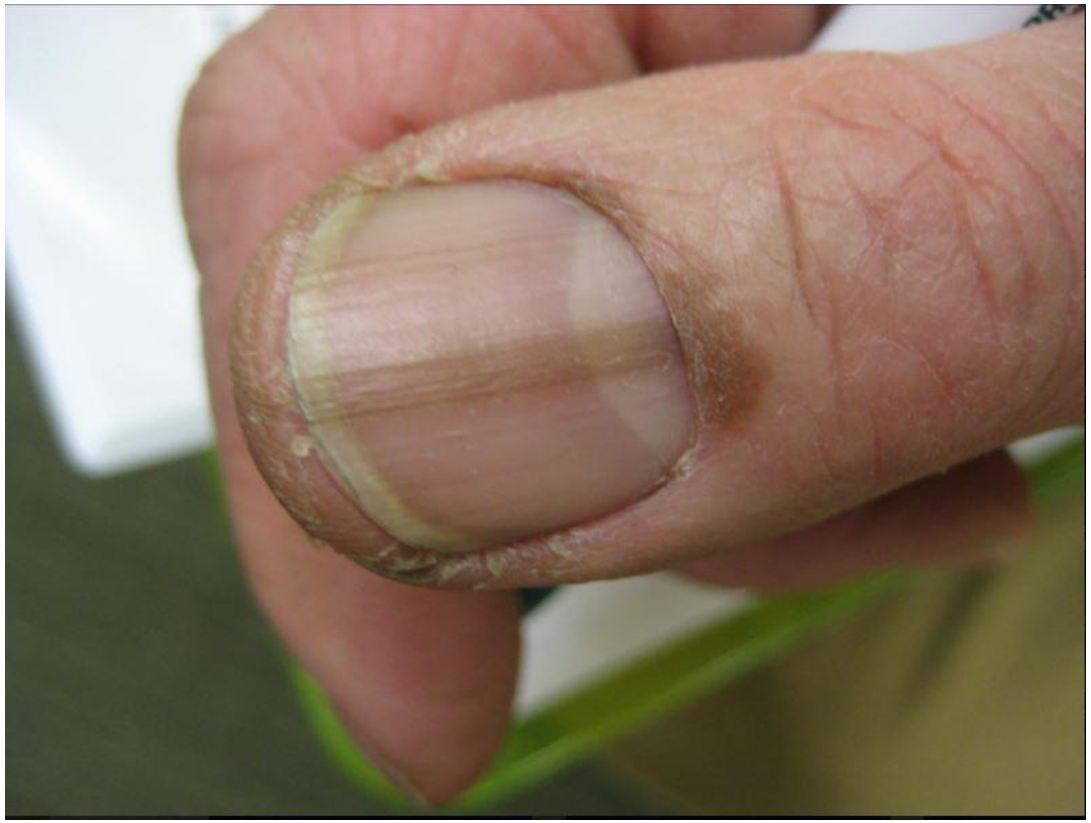


Figure 2

MIS versus Benign



MIS versus benign activation.

- 10 cases of benign activation of nail unit melanocytes
- 8 cases of MIS of the nail unit
  - Archival tissue database for patients 2008 to 2017.
  - H&E and Fontana-Masson and MelanA (Mart1) immunohistochemical studies (IHC).
- Additional stains performed
  - p16
  - HMB45
  - Dual-color Ki67/MelanA(Mart1)

MIS versus Benign

Table 1. Patients diagnosed with BAM and MIS with staining results

Group	Case	p16	HMB45	Ki67/MelanA	MelanA	Fontana	Epithelial Pigment	Melanophages	Obvious melanocytes
BAM	1	-	+	-	+	+	+	-	-
	2	-	+	-	+	+	+	-	-
	3	-	+	-	+	+	+	+	-
	4	-	+	-	+	+	-	-	-
	5	-	+	-	+	+	+	-	-
	6	-	+	-	+	+	+	-	-
	7	-	+	-	+	+	+	-	-
	8	-	+	-	+	+	+	-	-
	9	-	+	-	+	+	+	-	-
	10	-	+	-	+	+	+	+	-
MIS	11	+	+	-	N/A	N/A	+	-	+
	12	+	+	+	N/A	N/A	+	-	+
	13	+	+	-	+	N/A	+	+	+
	14	-	+	-	+	N/A	+	+	+
	15	+	+	-	+	N/A	-	+	+
	16	+	+	-	+	N/A	+	+	+
	17	+	+	+	+	N/A	-	+	-
	18	+	+	-	N/A	N/A	+	+	+

MIS versus Benign

p16 Immunohistochemistry usually distinguishes melanoma in-situ of the nail unit from benign activation of junctional melanocytes.

Background

Distinguishing between benign activation of melanocytes (a.k.a. melanotic macule or benign lentigo of the nail unit) from melanoma in-situ of the nail unit remains a diagnostic challenge. Current diagnostic tools are limited to an assessment of melanocytes density using H&E and melanocytic immunohistochemical studies (IHC) and a close clinical correlation, rather than qualitative tests, such as molecular markers which distinguish benign from malignant melanocytes.

Objective

We sought to identify IHC studies that could be used qualitatively to help distinguish between benign activation of nail unit melanocytes (BAM) versus melanoma in situ (MIS).

Methods

In this retrospective study, a total of 10 cases of BAM and 8 cases of MIS were selected from an archival tissue database for patients with samples submitted between 2008 to July 2017. Archival slides available for review included H&E and Fontana-Masson and MelanA (Mart1) immunohistochemical studies (IHC). Tissue used in this research project was not needed for further diagnostic purposes. Tissue slides from paraffin embedded blocks were prepared and IHC studies for p16, HMB45, and dual-color Ki67/MelanA(Mart1) were performed.

Results

A p16 IHC study reliably distinguishes between BAM and MIS, with BAM being negative and MIS being positive ($p<=0.001$). The HMB45 and Ki-67/MelanA IHC studies did not show utility in distinguishing BAM and MIS.

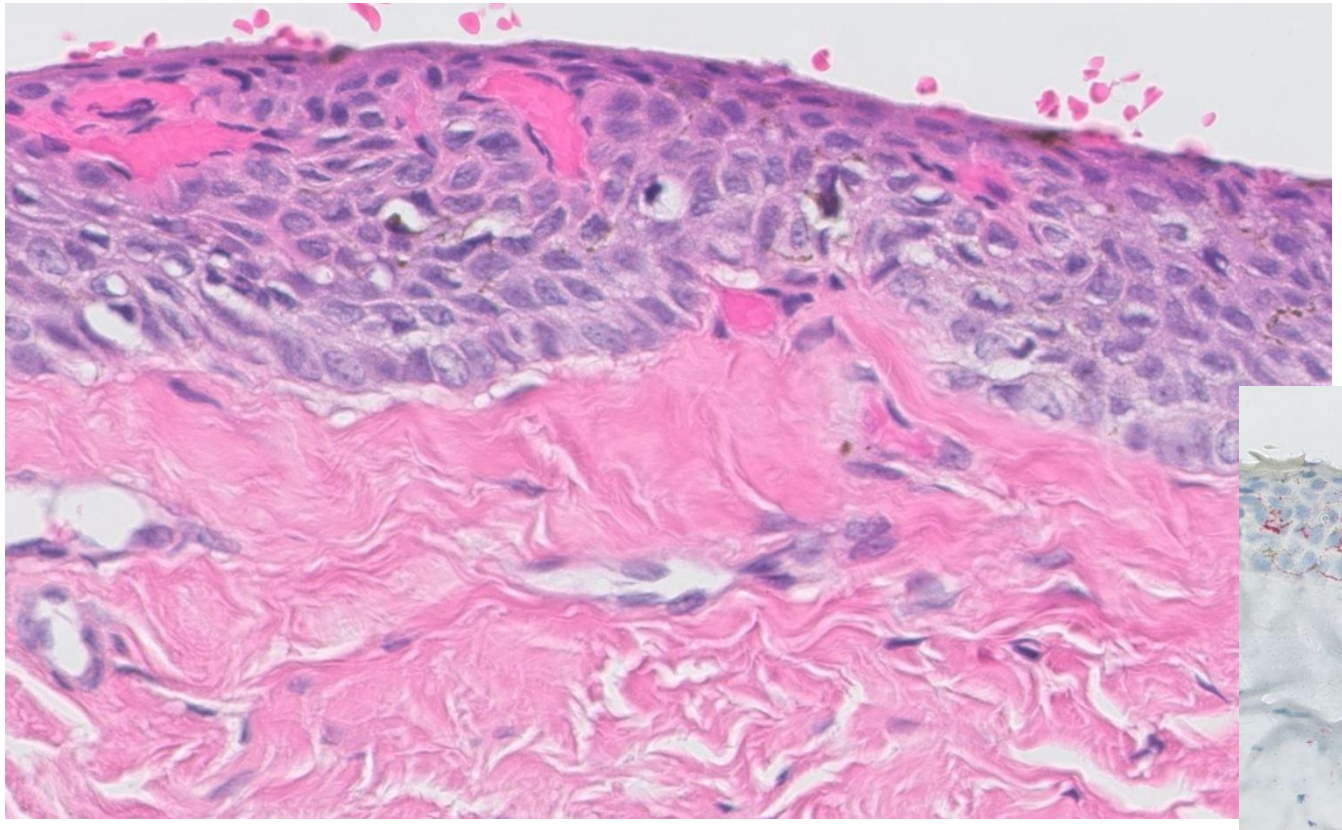
Limitations

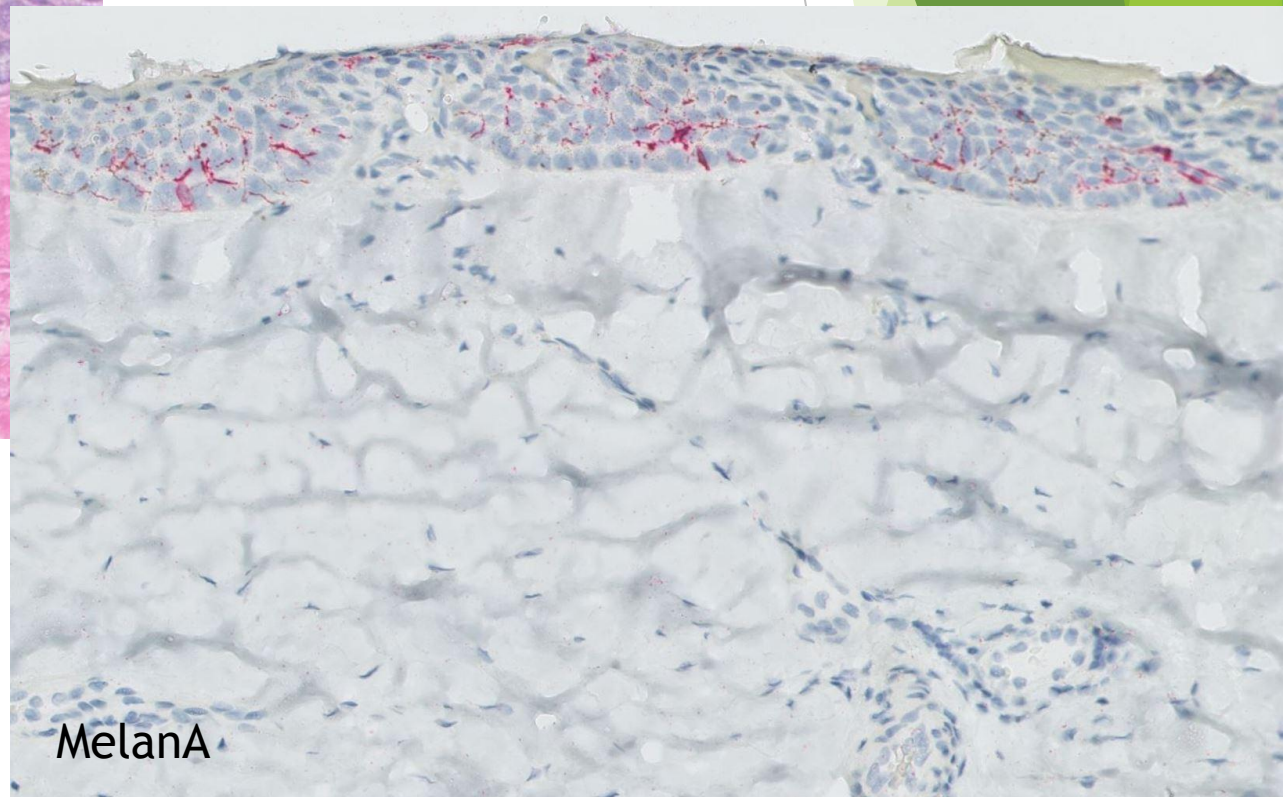
A limited number of the rare cases of MIS prevented an increase of statistical power in this study.

Conclusion

IHC staining for p16 provides one of the first qualitative tools for addressing the diagnostic impasse faced by dermatopathology in distinguishing BAM from MIS.

Benign Activation (Melanotic Macule)





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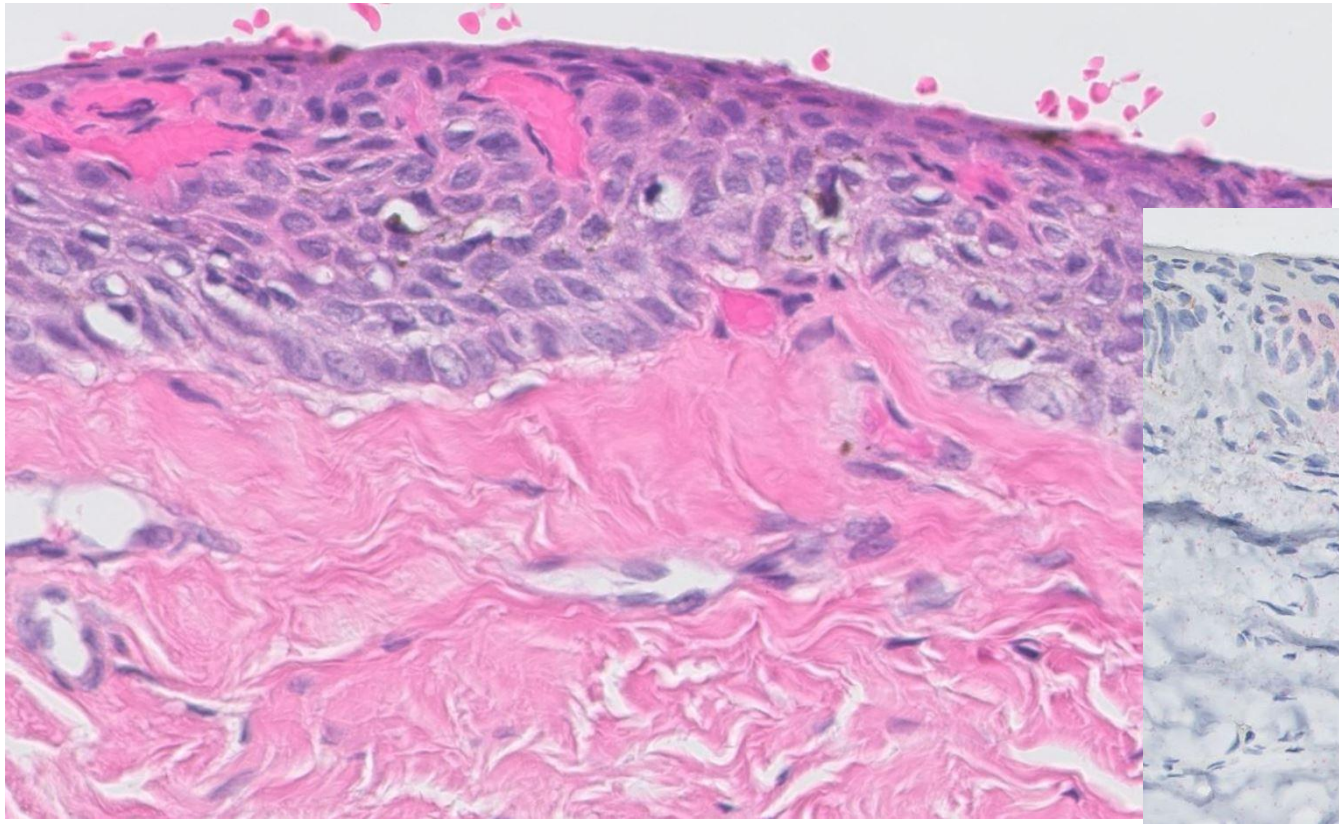
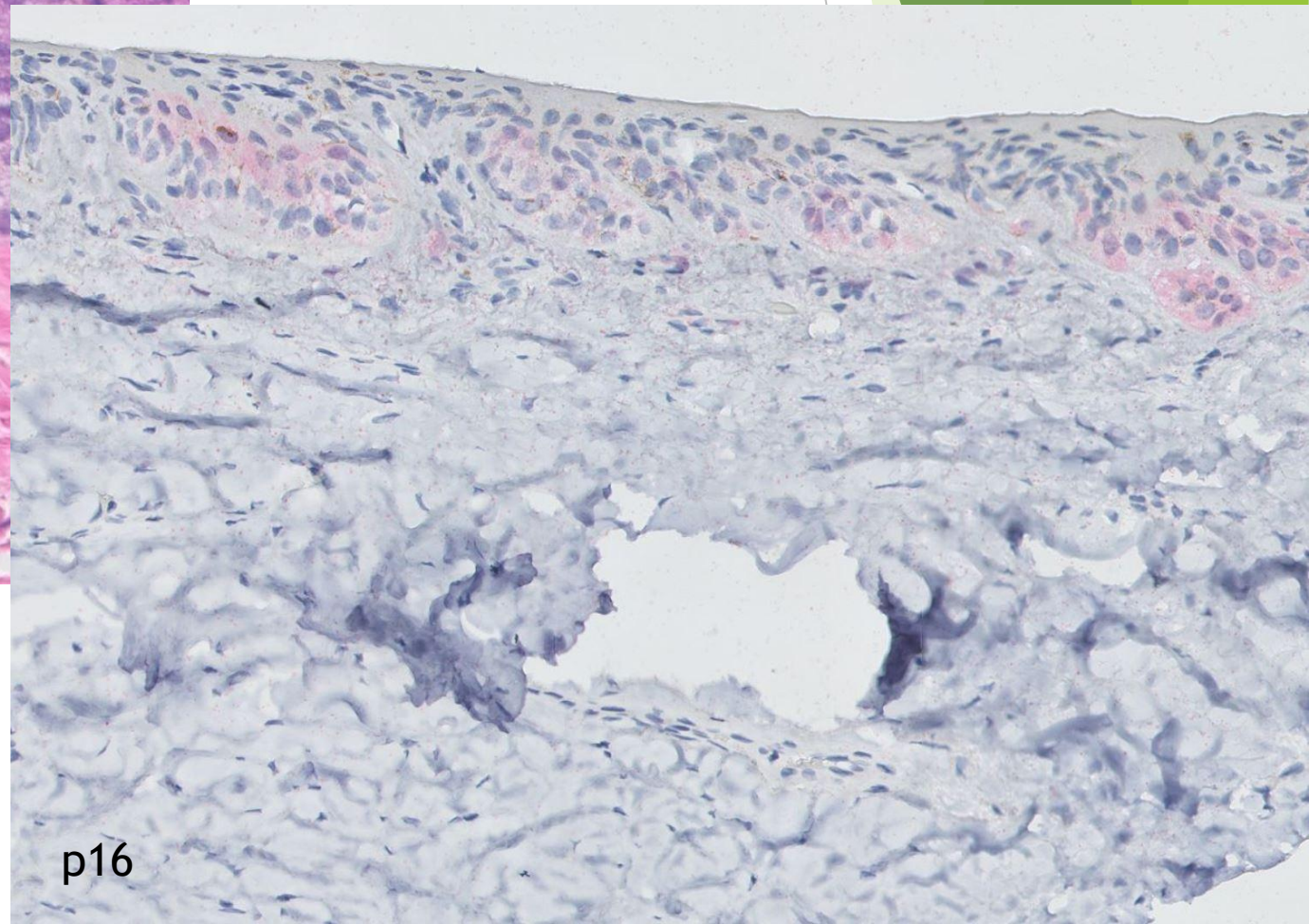
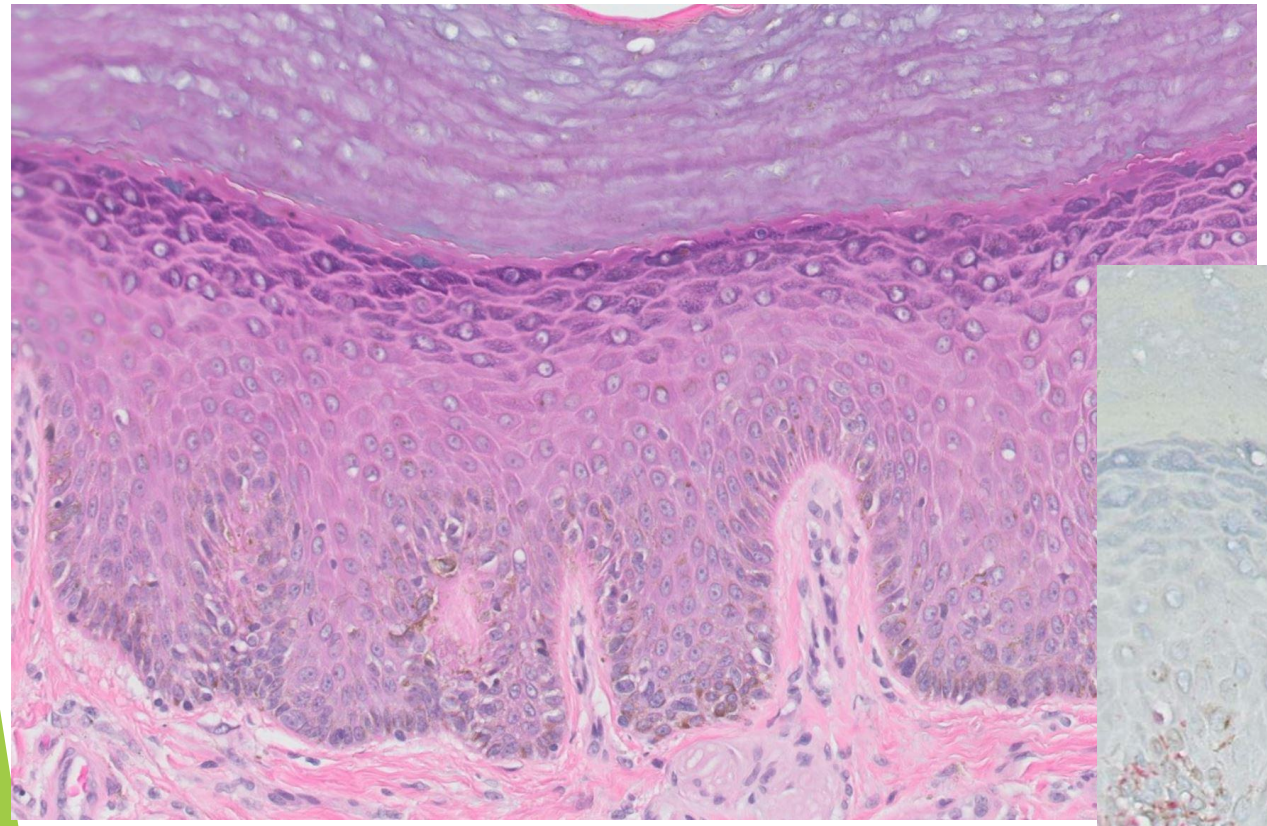
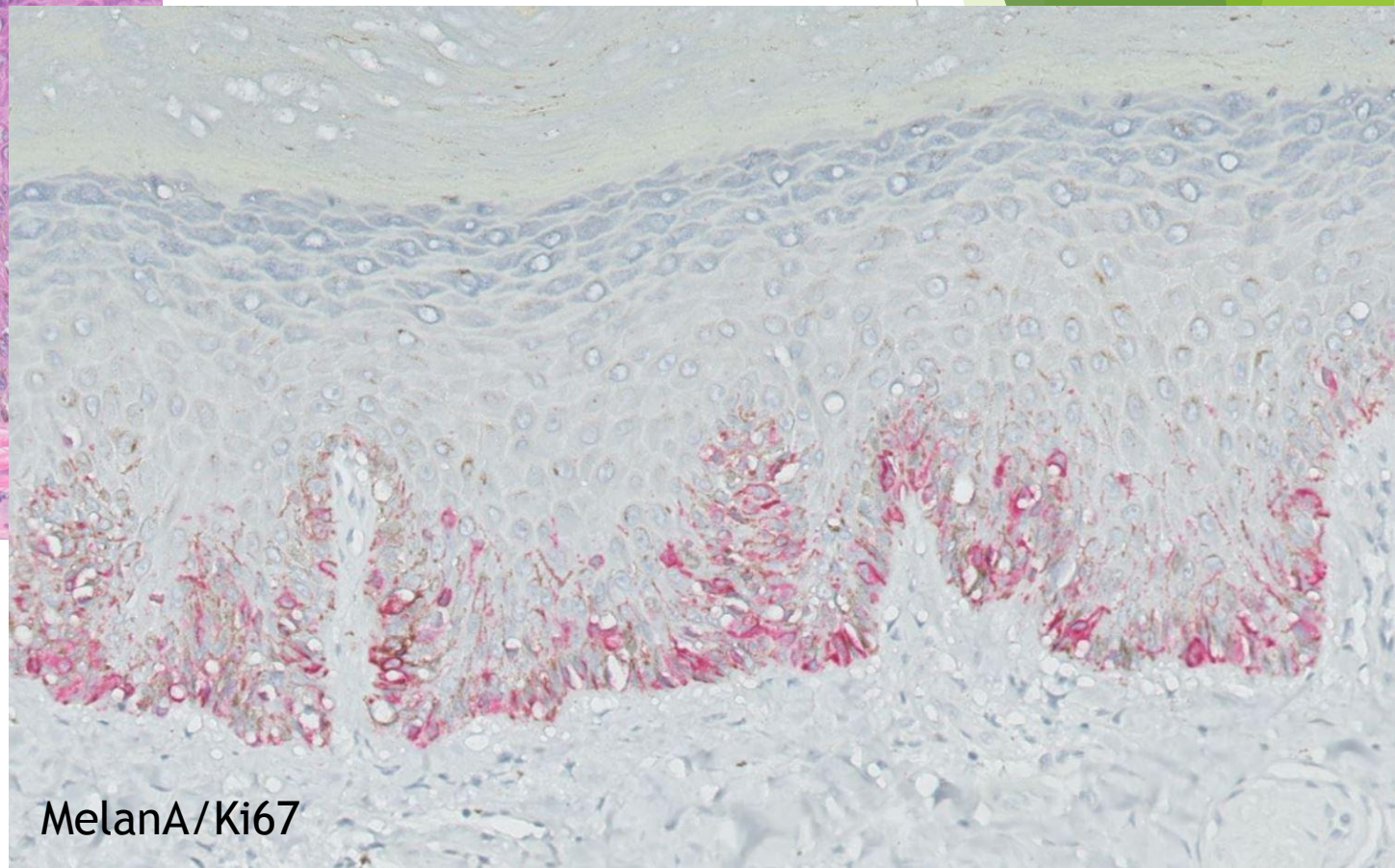




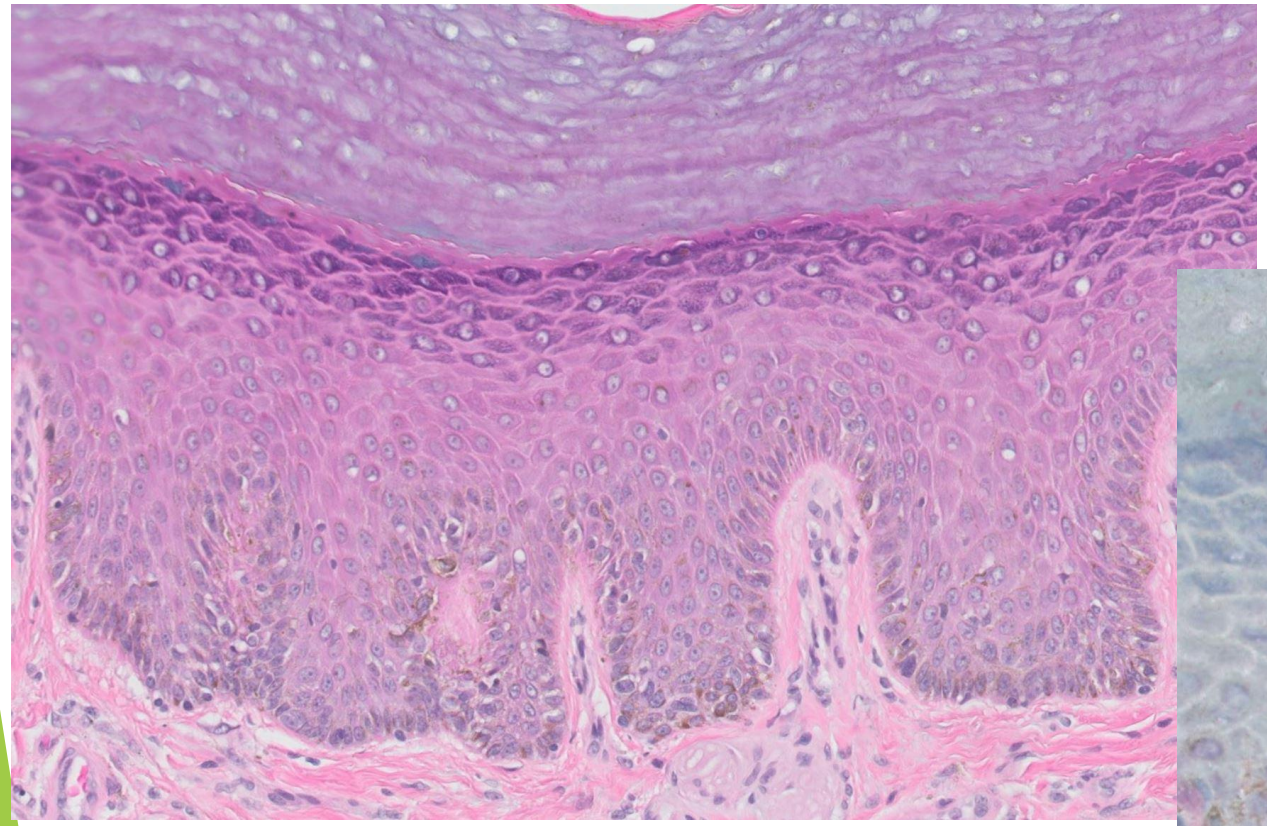
MIS

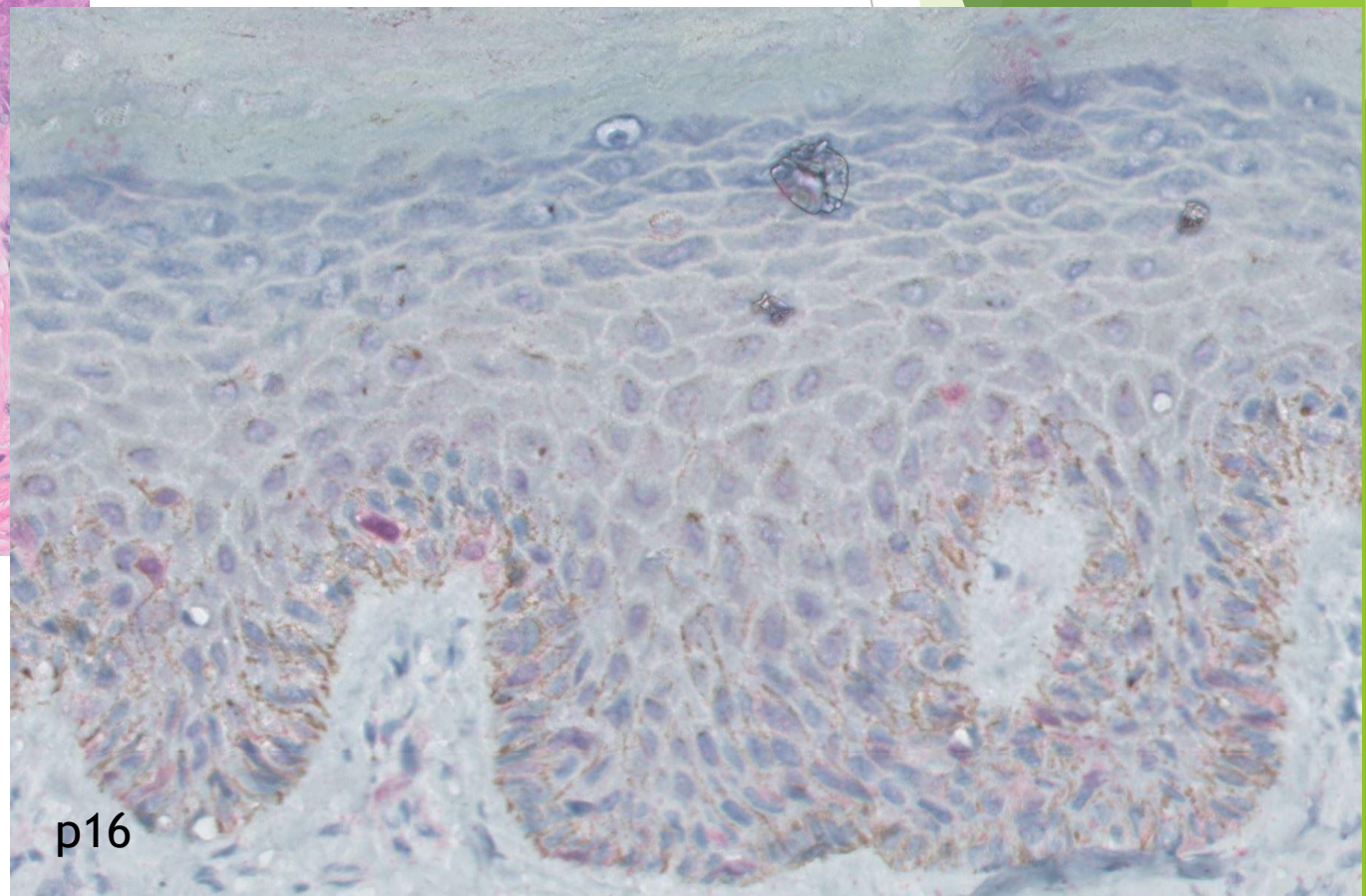




MelanA/Ki67

MIS





MIS versus benign activation. Summary

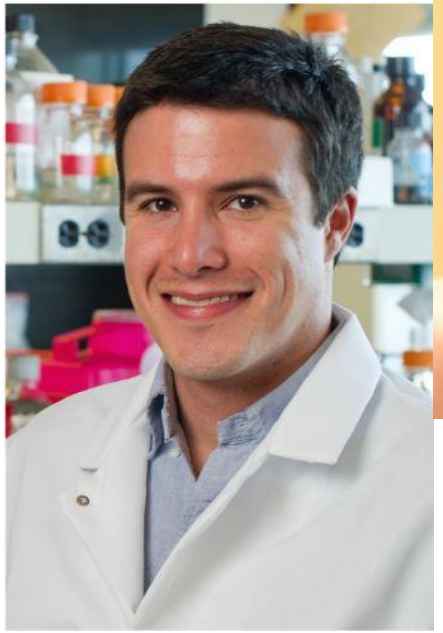
- p16 IHC studyreliably distinguishes between BAM and MIS, with BAM being negative and MIS being positive (p<=0.001).
- No utility with HMB45 and Ki-67/MelanA IHC studies.
- Study being expanded with collaboration with Dr. Josette André in Brussels

Results

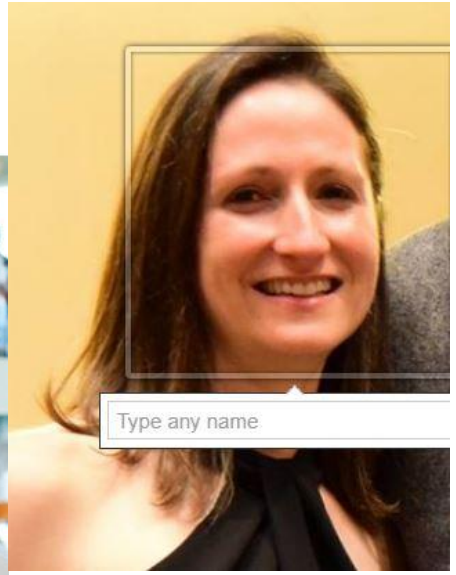
Contingency Table			
	MIS ("Rare tumor")	BAM ("Not so rare tumor")	Totals
p16 positive	1 (ECF* 5.052631579)	11 (ECF 6.947368421)	12
p16 negative	7 (ECF 2.947368421)	0 (ECF 4.052631579)	7
Totals	8	11	19
Fisher's two tailed exact test	P = 0.0002	Chi-squared test with Yates' correction	P = 0.0006

* Expected cell frequencies (ECF)

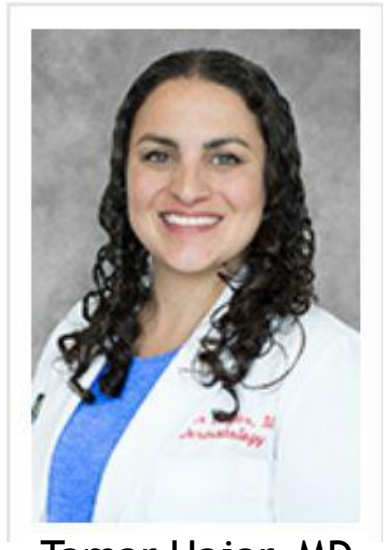
Alex Chu, Medical Student
p16 Nail B9 versus MIS



Christian Joran, MD, PhD
CCCA vs LPP



Cindi Chapman, MD
CCCA vs LPP



Tamar Hajar, MD
FFA Facial Papule

Thank you!

Mary Clare Bohnett, Medical Student
Folliculitis Decalvans vs LPP

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Thank you!