Trichoscopic Findings of Frontal Fibrosing Alopecia

Abstract:

Background: Frontal Fibrosing Alopecia (FFA) is a type of scarring alopecia known as a clinical variant of lichen planopilaris (LPP). It is characterized by slowly progressive scarring alopecia on the hairline and affects explicitly postmenopausal women.

Objective: The aim of the present study was to assess trichoscopic findings in cases of Frontal Fibrosing Alopecia.

Method: The study was conducted on 50 female patients with frontal fibrosing alopecia who were recruited from Dermatology outpatient clinic of Benha University hospital in the period from January 2019 to January 2020. A written informed consent was obtained from all participants.

The study was approved by the local ethics committee on research involving human subjects of Benha Faculty of Medicine. All patients were subjected to Dermatological examination for clinical assessment and trichoscopic examination of frontal fibrosing alopecia.

Results : Trichoscopy highlighted a marked reduction in the number of follicular ostia, perifollicular desquamation, perifollicular blue-gray dots Follicular hyperkeratosis, Perifollicular erythema, Lonely hair , abrupt interruption of the hairline, with the absence of the vellus hairs that are typically observed in normal scalp.

Conclusion: Trichoscopy is a helpful tool in the diagnosis of frontal fibrosing alopecia.

Introduction

Frontal Fibrosing Alopecia (FFA) is a type of scarring alopecia known as a clinical variant of lichen planopilaris (LPP) **(Kossard et al., 1997)**. It is characterized by slowly progressive scarring alopecia on the hairline and affects explicitly postmenopausal women. A severity score was suggested to be effectively used for categorizing FFA patients in clinical practice and in research studies **(Saceda-Corralo et al., 2018).**

Comment [h1]: بصي على البيير اللي انا باعتاها ليكي الريفرانس بيتكتب في البيير بطريقة الأرقام مش زي الرسالة

Clinically, FFA presents mainly as a band-like recession of the frontotemporal hairline. The alopecic skin is slightly atrophic, devoid of follicular ostia, smooth, and lighter than the chronically sun-exposed forehead skin **(Fonda-Pascual et al., 2017)**.

Three clinical patterns of hair loss have been described in FFA, according to the different types of hairline recession described over the years: linear, diffuse zigzag, and pseudo-fringe. The linear pattern is the band of uniform frontal hairline recession in the absence of loss of hair density behind the hairline. The diffuse zigzag pattern is the same as linear but with at least 50% decreased hair density **(Mirmirani et al., 2016)**.

Pseudo-fringe hairline recession is a clinical presentation similar to traction alopecia (hence the term ‘pseudo’) where the fringe sign is the presence of some hair retained along the hairline (especially in the temporal area) ahead of the alopecic skin. Over the years, cases of isolated occipital or retro-auricular or sideburns FFA have been reported, establishing that this disease is not confined to the frontal scalp **(Moreno-Arrones et al., 2017)**.

Lateral or complete eyebrow loss, occasionally with perifollicular and inter follicular erythema, is a very common feature of FFA **(Saceda-Corralo et al., 2018)**. Volume loss has been reported for the eyelashes. Thinning of axillary, pubic, limb, and truncal hair, sometimes associated with follicular keratosis and/or erythema, can also occur before or after the scalp hair loss. These

features are usually confused with age-related body hair loss and never reported by patients themselves **(Diaz et al., 2018)**.

Classic lichen planus in other scalp areas or other body areas as well as lichen planus pigmentosus and less often depression of the facial veins have also been described in FFA-affected patients **(Meyer et al., 2017)**. Facial erythema, sometimes associated with follicular keratosis, may be diffuse or localized in the forehead and present as red dots **(Fernandez-Crehuet et al., 2018)**. Follicular hyperkeratosis (peripilar casts) and perifollicular erythema are seen **(Katoulis et al., 2017)**.

Patients and Method

The study was approved by the local ethics committee on research involving human subjects of Benha Faculty of Medicine. A written informed consent was obtained from all participants . The study was conducted on 50 female patients of frontal fibrosing alopecia were recruited from Dermatology outpatient clinic of Benha University hospital in the period from January 2019 to January 2020.

All patients were subjected to the following:

١.Full history taking:

- **Personal history:** name, age, special habits of medical importance.
- **Present history:** age of onset, duration of disease
- **Past history (**Hypertension, drugs, diabetes mellitus, thyroid disease, lichen planus , rheumatoid arthritis , systemic lupus)
- **Family history of FFA.**

2. Clinical Examination:

General examination:

- Each subject's weight in kilograms and height in meters was measured
- BMI The formula is BMI = kg/m^2 where kg is a person's weight in kilograms and m^2 is their height in meters squared.) A BMI of 25.0 or more is overweight, while the healthy range is 18.5 to 24.9. BMI applies to most adults 18-65 years **(Trefethen and Nick, 2019).**

Local and skin examination:

- Skin was examined for other skin diseases
- Dermatological examination for clinical assessment of frontal fibrosing alopecia.
- Trichoscopic examination.

Results

The study included 50 female patients with frontal fibrosing alopecia. Their age ranged from 39 to 60 years old. The age of disease onset ranged from 38 to 58 years old. The disease duration ranged from 1 to 3 years **(Table 1)**.

Table 1. History findings in the studied cases.

		Patients N=50
Patients age (years)	**Range**	39 :60
Age of onset (years)	**Range**	38:58
Duration (years)	**Range**	1:3

SD, standard deviation.

The disease was associated with comorbidities in most of the patients **(Figure 1)**.

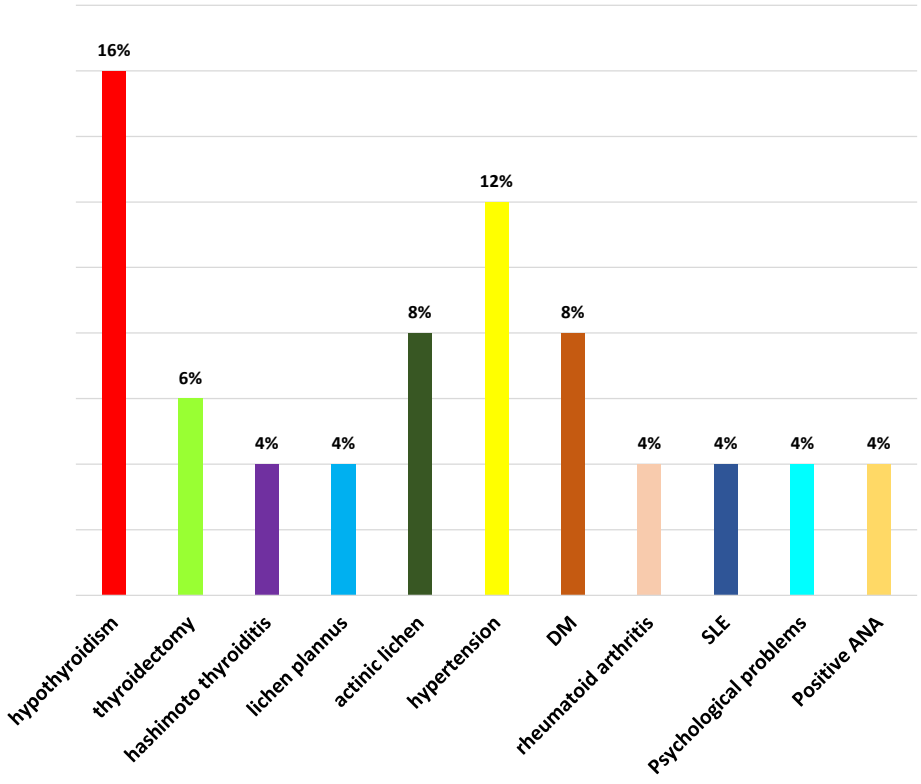

Figure 1. Comorbidities in all studied cases.

Clinical examination revealed the following clinical signs: frontotemporal and frontoparietal hair recession, eyebrows and eyelashes loss, facial papules and depressed facial viens **(Figures 2,3).**

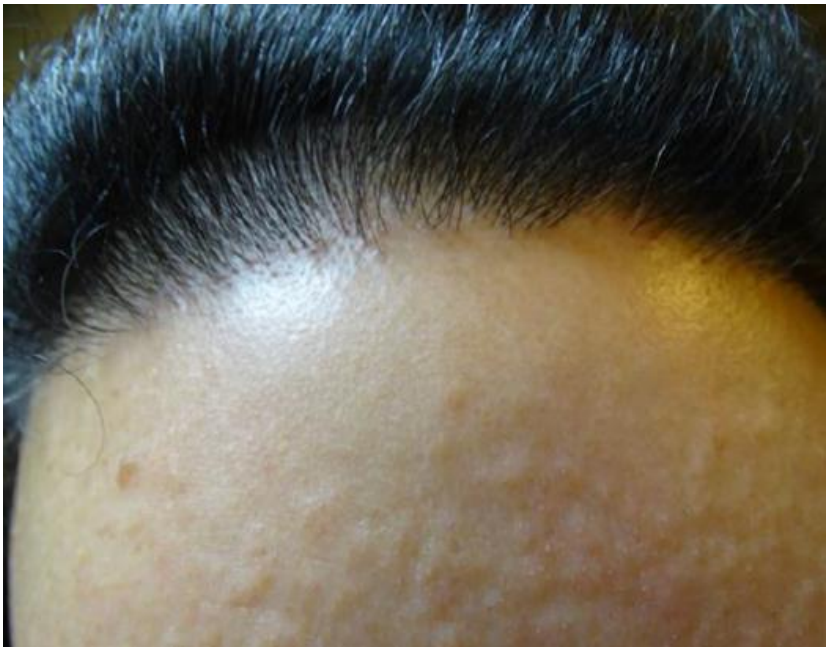

Figure 2: FFA with prominent facial papules.

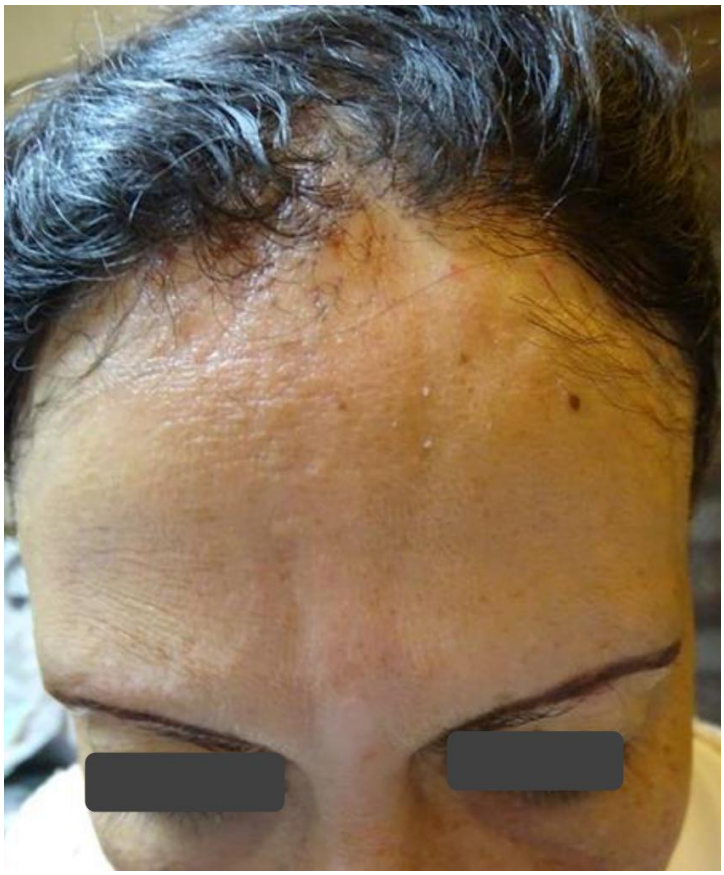

Figure 3: FFA; Anterior hair line recession, eyebrows affection, depressed facial veins.

Trichoscopic findings

Trichoscopy highlighted a marked reduction in the number of follicular ostia, perifollicular desquamation, perifollicular blue-gray dots Follicular hyperkeratosis, Perifollicular erythema, Lonely hair , abrupt interruption of the hairline, with the absence of the vellus hairs that are typically observed in normal scalp **(Figure 4)**.

Figure 4: Trichoscopy shows loss of vellus hairs, loss of follicular opening, perifollicular scaling, inter-follicular scales and lonely hairs.

Discussion

Associated comorbidities in the current cases included hypothyroidism, had thyroidectomy, Hashimoto thyroiditis, Lichen planus, actinic lichen, hypertension, Diabetes Mellitus, Rheumatoid arthritis A, SLE, psychological problems, and positive ANA.

An observational, cross-sectional and descriptive study was conducted in France and Germany (in the Centre de Sant_e Sabouraud, Paris, France, and the Department of Dermatology and Allergy of the Charit_e – Universit€atsmedizin Berlin, Germany. Between August 2013 andApril 2018,) found that of the most commonly reported comorbidities include thyroid function disorders (38% of women), arterial hypertension (18% of women)and lipid metabolic disorders (22% of women) (Alegre-Sanchez A, etal 2017)

Distribution of hair loss differed between studied subjects; frontoparietal, and frontotempoal , eye brow loss and eye lashes loss. High hairline is a critical finding for frontal fibrosing alopecia diagnosis. Fronto-parieto-temporal hairline recession usually develops bilaterally and symmetrically] and it can extend through to the retro auricular region and occipital margin Additionally, frontal fibrosing alopecia may cause pain, itching or burning sensations in the band across the frontal hairline. Bilateral eyebrow loss is another clinical warning sign for frontal fibrosing alopecia, and may represent one of the earliest manifestations which could precede alopecia by several months to years. The distal third is commonly affected and, unlike the scalp, it is unusual to find evident erythema or scaling on the eyebrow area. Eyelash loss may also occur, More evident frontal veins can be detected by palpation as a localized depression, near the original hairline. Cutaneous atrophy is thought to be responsible. Facial papules in frontal fibrosing alopecia were described as follicular, normochromic and monomorphic papules, randomly distributed on facial skin and are not easily noticed, being better visualized over the temples **(Esteban-Lucía et al., 2017).**

Trichoscopic findings include the absence of follicular openings and vellus hair in the frontal hairline, follicular hyperkeratosis, perifollicular scaling, and erythema , perifolicular scaling is generally less frequent and milder in FFA than LPP. Yet, pili torti was noted more frequently revealing a helpful marker for FFA. Moreover, as a novel finding a study indicated that vellus hairs can be visible in FFA **(Abedini et al., 2016).**

In the current study Trichoscopy highlighted a marked reduction in the number of follicular ostia, perifollicular desquamation, perifollicular blue-gray dots Follicular hyperkeratosis, Perifollicular erythema, Lonely hair , abrupt interruption of the hairline, with the absence of the vellus hairs that are typically observed in normal scalp

FFA may be considered as a trichological emergency which needs proper diagnosis and early treatment to stop the hair follicles fibrosis and preserve the remaining hairs.

Refrences

- Kossard S. Postmenopausal frontal fibrosingalopecia. Scarring alopecia in a patterndistribution. Arch Dermatol 1994; 130: 770–774.
- Saceda-Corralo D, Moreno-Arrones OM, Fonda-Pascual P, Pindado-Ortega C, Buendía-Castaño D, Alegre-Sánchez A, et al. Development and validation of the frontal fibrosing alopecia severity score. J Am Acad Dermatol 2018;78:522–9.
- Fonda-Pascual P, Saceda-Corralo D, Moreno-Arrones OM, et al. Frontal fibrosing alopecia and environment: may tobacco be protective? Defining environmental impact on FFA patientsand a possible protective influx of smoking habit. J Eur Acad Dermatol Venereol. 2017;31:e98–9.

- Mirmirani P, Zimmerman B. Cocking the eyebrows to find the missing hairline in frontal fibrosing alopecia: a useful clinical maneuver. J Am Acad Dermatol. 2016;75:e63
- Moreno-Arrones OM, Saceda-Corralo D, Fonda-Pascual P,et al. Frontal fibrosing alopecia: clinical and prognostic classification. J Eur Acad Dermatol Venereol. 2017;31:1739–45.
- Diaz AA, Miteva M. Peripilar, "guttate" hypopigmentation of the scalp and idiopathic guttate hypomelanosis in frontal fibrosing alopecia. Skin Appendage Disord. 2018.
- Meyer V, Sachse M, Rose C, Wagner G. Follicular red dots of the hip in frontal fibrosing alopecia—do we have to look twice? J Dtsch Dermatol Ges. 2017;15:327–8.
-
- Katoulis AC, Diamati K, Sgouros D, et al. Frontal fibrosing alopecia and vitiligo: coexistence or true association? Skin Appendage Disord. 2017;2:152–5.
- .(*Trefethen, Nick. " Institute, University of Oxford. Retrieved 5 February 2019.)*
-
- Alegre-Sanchez A, Saceda-Corralo D, Bernardez C, Molina-Ruiz AM, Arias-Santiago S, Vano-Galvan S. Frontal fibrosing alopecia in malepatients: a report of 12 cases. J Eur Acad Dermatol Venereol 2017; 31: e112–e14.

- Esteban-Lucía L , Molina-Ruiz AM , Requena L . Update on frontal fibrosing alopecia . Actas Dermosifiliogr 2017 ; 108 (4):293 – 304 .
- Abedini R, Kamyab Hesari K, Daneshpazhooh M, et al. Validity of trichoscopy in the diagnosis of primarycicatricialalopecias.Int Dermatol 2016;55:1106–14