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Usefulness of Dermoscopic Findings in the Clinical Evaluation of Beard Alopecia Areata

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ABSTRACT

Objective: The aim of this study is to investigate the usefulness of dermoscopic findings in the clinical evaluation of beard alopecia areata (BAA).

Materials and Methods: A total of 38 patients who presented with BAA diagnosed via clinical evaluation and 38 adults who did not have BAA (control group) were included. Their age, skin phototype, localization, severity, scalp involvement, duration of the disease, laboratory findings, and concomitant disorders were noted. Clinical and dermoscopic photos were taken by videodermoscope and recorded. Dermoscopic findings were analyzed according to the checklist described in previous articles for scalp alopecia.

Results: Clinical severity of alopecia areata was observed as 13 (34.2%) solitary lesions, 22 (57.9%) multiple lesions, and 3 (11.1%) cases of total beard loss. According to the follicular features, white vellus and tapering hairs were detected 26 (68.4%) and 8 (21.1%) in the patient group, respectively. The difference between white vellus (p=0.001) and tapering hairs (p=0.003) was significant between the patient and the control groups. Other follicular findings, such as yellow dots, black dots, black vellus hairs, broken hairs, hair diameter diversity, and gray–white dots, did not show a significant difference between the patient and control groups. None of the interfollicular findings were significantly different between the two groups.

Conclusion: According to our study, a dermoscopic evaluation is useful in the clinical evaluation of BAA. Detection of the white vellus and tapering hairs may guide diagnosing of BAA.

Keywords: Alopecia, alopecia areata, beard, dermoscopy, trichoscopy, videodermoscopy

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INTRODUCTION

Alopecia areata (AA) is a non-scaring, autoimmune disease with a wide spectrum of manifestations and an unpredictable course (1). The prevalence is 0.1%–0.2% in the general population, whereas the cumulative lifetime incidence is approximately 2% (2). There are few reports relevant to the characteristics of beard AA (BAA) (3, 4). In a previous study, 45.5% of the patients with isolated BAA were reported to develop AA of the scalp within 1 year (3). Hence, it is recommended to monitor the patients with BAA regularly to detect the scalp hair loss (3).

Dermoscopic findings of scalp AA have been found to be rewarding in diagnosis, differential diagnosis, and treatment follow-up (5–7), There is an article related to the dermoscopic features of AA of the eyebrows as well (8). In addition, to the best of our knowledge, there are no studies available regarding the dermoscopic findings of BAA in the literature.

In this study, we aimed to investigate the usefulness of dermoscopic BAA features that were previously determined for scalp AA.

MATERIALS and METHODS

A total of 38 males who presented with beard alopecia and diagnosed as BAA by clinical examination between October 2012 and November 2018 were included in the study. Patients who had acne vulgaris, seborrheic dermatitis, and congenital hypotrichosis on the face were excluded. Dermoscopic findings were evaluated after minimum 3 days of beard rest. Thirty-eight males who had symptoms other than the beard loss, or any dermatologic disorder on the skin of face-and-neck area, constituted the control group.

This study was approved by the Institutional Review Board and Ethics Committee (Approval No: 2018/658), and the study was conducted in accordance with the principles of the Declaration of Helsinki. All participants gave informed consent before the study.

Their age, skin phototype, localization, severity, scalp involvement, duration of the disease, laboratory results, and

concomitant disorders were noted. A histopathological investigation was not performed. Diagnosis was made using clinical findings.

Clinical and dermoscopic photos were taken by videodermoscope (Molemax HD, Dermamedical Systems, Austria) and recorded. Dermoscopic photos were obtained using the 30-fold magnification. Photos were taken from the central and peripheral parts of the alopecic patches in patients with BAA. Dermoscopic findings were investigated according to the checklist obtained from the findings described by previous trials involving the scalp.

Continuous variables were shown by the mean+standard deviation, and constant variables were shown as percentages. Intergroup comparisons were made using the chi-squared. A P-value <0.05 was accepted as statistically significant. Statistical analysis was obtained using the SPSS v. 16.0 statistical analysis software (Microsoft Windows, SPSS Inc, Chicago, IL).

RESULTS

All of the patients in each group (n=38 for each) were males. The ages of the patients were 26–62 (mean, 36.5+7.1). The skin phototype of patients was Type 2 in 11 (28.9%), Type 3 in 19 (50%), and Type 4 in 8 (21.1%) patients. There were no significant differences between patients and controls regarding the distribution of age, gender, and skin phototype. The clinical subtype of AA were a solitary lesion in 13 (11.1%), multiple lesions in 22 (57.9%), and total beard loss in 3 (11.1%) patients. The scalp involvement was noted in 5 (13.2%) patients, and it presented as alopecia universalis (n=3), a solitary lesion (n=1), and multiple lesions (n=1). Laboratory investigation revealed a deficiency in vitamins B12 (n=17), D (n=9), and folate (n=7). Two patients had a comorbid thyroid disorder. We did not do any laboratory test in the control group.

Dermoscopic Features

Dermoscopic features determined in BAA were divided into two subgroups according to their location as follicular and interfollicular findings (Table 1).

Yellow dots in the follicular area were detected in 10 (26.3%) cases from the patient group (Fig. 1a) and 4 (10.5%) cases from the control group with an insignificant difference. Also, the black dots did not show significance between these two groups. In the patient group, black vellus hairs (Fig. 1b, c), broken hairs (Fig. 1d, e), and hair diameter diversity (Fig. 1b) were seen in 52.6%, 34.2%, and 78.9%, respectively. These three features showed an insignificant difference. White vellus hairs (Fig. 1c, e, f) and tapering hairs (including the exclamation mark hairs) (Fig. 1b, c) were detected at 68.4% and 21.1%, respectively. Tapering hairs were only present in the control group. The difference between the patient and control groups for white vellus (p=0.001) and tapering hairs (p=0.003) was statistically significant. Comparison between the two groups for gray–white dots (Fig. 1b, c, f) did not reveal a significant difference.

Interfollicular features in this study were interfollicular scaling (Fig. 1d, f), perifollicular scaling (Fig. 1d, f), arborizing red lines (Fig. 1d), red dots, dirty dots (Fig. 1c–e), and honeycomb pigment pattern. None of these features showed statistical significance between the two groups (Table 1).

Table 1. Dermoscopic features of beard Alopecia areata

Dermoscopic features	Patients n=38		Controls n=38		p
	n	%	n	%	
Follicular features					
Yellow dots	10	26.3	4	10.5	0.760
Black dots	7	18.4	3	7.9	0.175
Black vellus hairs	20	52.6	13	34.2	0.105
White vellus hairs	26	68.4	12	31.6	0.001
Hair diameter diversity	30	78.9	23	60.5	0.080
Tapering hairs	8	21.1	–	–	0.003
Broken hairs	13	34.2	8	21.1	0.200
Grey-white dots	13	34.2	7	18.4	0.118
Interfollicular features					
Interfollicular scaling	12	31.6	6	15.8	0.105
Perifollicular scaling	9	23.7	13	34.2	0.312
Arborizing red lines	25	65.8	16	41.2	0.490
Red dots	11	28.9	7	18.4	0.280
Dirty dots	6	15.8	5	13.2	0.744
Honeycomb pigment pattern	5	13.2	4	10.5	0.723

DISCUSSION

AA is a T-cell-mediated hair disorder that occurs due to genetic predisposition, is triggered by environmental factors, and is characterized by well-circumscribed, round patches in normal-looking skin (3). AA can occur on any hair-bearing area, the most affected area in >90% of patients being the scalp (9). BAA is found in 20%–28% of patients with AA (10, 11). No data on exclusive beard involvement were reported. Although BAA is accepted as a cosmetic problem, a high number of patients suffer from anxiety and depressive symptoms (4). BAA is a frequent disease, but the number of trials on this topic is scarce, and these are mostly case reports (3, 4, 10–17). Epidemiological, clinical, and prognostic properties were described in a study where BAA were followed for 1 year (3). In this study, AA of the scalp developed in 45.5% of BAA patients during the follow-up, and 20% of these were in the alopecia totalis or universalis form (3). BAA may progress to scalp AA in a significant number of patients, so it was recommended to follow BAA patients (3). In the literature, there is no specific treatment for BAA. It is recommended to determine the treatment protocol according to the age of the patient and severity of the disease (18). In our trial, comorbidities and laboratory results are similar to those in the literature (3, 4, 10, 11).

There are a lot of articles related to trichoscopic findings of AA of thescalp (5, 7, 19). Trichoscopy was shown to be effective in the treatment follow-up and assigning the prognosis of scalp AA (5, 7, 19–20). The dermoscopy of eyebrows has also been investigated (8). In this work, dermoscopic properties of the eyebrow loss caused by AA were reported as tapering hairs, broken hairs, and black dots (8). In a review regarding BAA, white hairs were detected clinically in the periphery of well-circumscribed, smooth patches (4). In this review, dermoscopic features of BAA were stated as yellow dots, broken hairs, and short vellus hairs. However, these

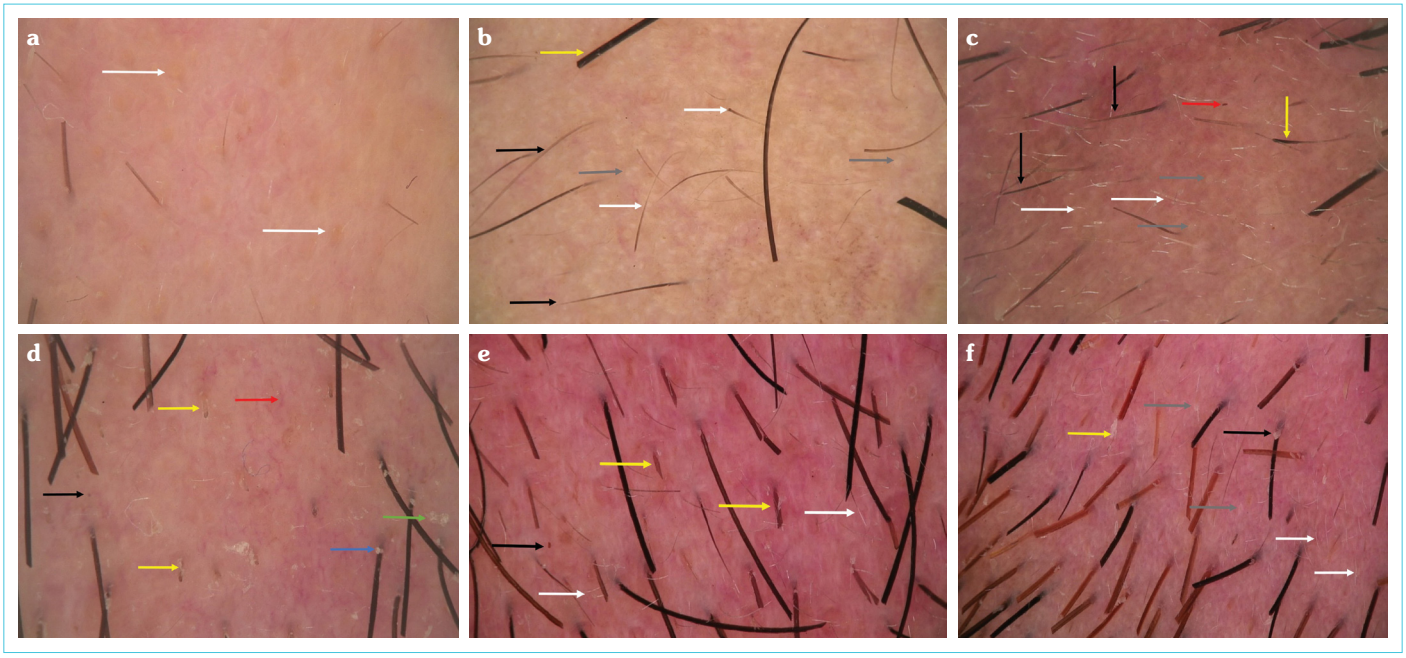

Figure 1. a–f. (a) Dermoscopic features of beard alopecia areata. Yellow dots (white arrows). (b) Dermoscopic features of beard alopecia areata. Black vellus hairs (black arrows), tapering hairs (white arrows), gray–white dots (gray arrows), hair diameter diversity (yellow and black arrows). (c) Dermoscopic features of beard alopecia areata. White vellus hairs (white arrows), black vellus hairs (black arrows), tapering hairs (yellow arrow), dirty dot (red arrow), and gray–white dots (gray arrows). (d) Dermoscopic features of beard alopecia areata. Broken hairs (yellow arrows), dirty dot (black arrow), perifollicular scaling (blue arrow), interfollicular scaling (green arrow), and arborizing red lines (red arrow). (e) Dermoscopic features of the control group. Broken hairs (yellow arrows), dirty dot (black arrow), and white vellus hairs (white arrows). (f) Dermoscopic features of the control group. Perifollicular scaling (black arrow), interfollicular scaling (yellow arrow), gray–white dots (gray arrow), and white vellus hair (white arrows). (Videodermoscope, X30)

features have been mostly described as personal experience, and to the best of our knowledge, no study has been arranged. It has been determined that there have been no studies published about the BAA dermoscopy before (4). To the best of our knowledge, there are no studies investigating the dermoscopic features of BAA performed by a handheld dermoscope or videodermoscope.

When the beard is totally shaved or cut too short, it will not be easy to evaluate dermoscopic findings. We recommended to conduct a dermoscopic examination after 2–3 days of beard rest. In our study, dermoscopic features detected in BAA were divided into two headings according to their location as follicular and interfollicular features (Table 1).

Yellow dots were suggested as a diagnostic but not a specific finding for AA in trichoscopy studies (5, 20). In our trial, yellow dots in BAA (26.3%) did not show a significant difference compared with the control group (10.5%). In contrast to the scalp, we suggest that yellow dots are not a pathognomonic BAA marker.

Black dots were reported to be a suggestive finding for scalp AA in previous studies (5, 7). However, it was an indispensable finding for BAA in our study.

Detection of short vellus hairs in the scalp has been found as a characteristic feature of AA, but it was documented in all alopecia types in some of the trials (5, 7). Likewise, we noted black vellus hairs both in the patient (52.6%) and in control (34.2%) groups.

Asz-Sigall et al. defined clinical forms and possible pathophysiological mechanisms of white hairs in AA (21). They defined white hairs as a frequent sign and a well-known condition in the regrowing stage of AA. Also, it was suggested that the protection of white hairs by falling of black hairs caused patchy or diffuse hair whitening (21). In this study, white vellus hairs in the patient group (68.4%) were significantly (p=0.001) frequent. Therefore, we thought that the presence of white vellus hairs can be considered as a clue for BAA.

The hair diameter diversity was observed in AGA, AA, and primary cicatricial alopecia (5, 20, 22). Our data also indicated that it does not constitute as a helpful diagnostic finding.

Tapering hairs in scalp were demonstrated in 31.7% and 42.9% of AA cases in two different studies, respectively (5, 7). They were described as a diagnostic finding for AA (5, 7). Cervantes et al. suggested that tapering hairs were less noticeable in the beard than in the scalp (4). We encountered them only in patients (21.1%), and this was a significant difference compared with the control group. Therefore, this feature can be accepted as a BAA hallmark similar to the scalp AA.

Broken hairs were reported to be suggestive, but not an indicative sign of AA (5, 7). They were a common feature like black and yellow dots for both the patient (34.2%) and control groups (21.1%). Broken hairs in the beard might be observed in the control group because of the fact that the beard-growing speed was not synchro-

nous in all hair follicles (Fig. 1f). We consider that detecting broken hairs such as terminal hairs in normal beard would limit the use of broken hairs in the BAA diagnosis.

When compared with the studies of scalp AA in the literature, the frequency of yellow dots, black dots, and broken hairs, which were dystrophic hair findings, was lower and was not different than in controls in our study. White dots have been defined as presenting to the eccrine pores or fibrotic follicules (5). Gray dots are considered to be a feature of demodicosis (23). In our study, we could not detect what corresponded to gray or white dots, so we reported them as gray–white dots. Our results provide no evidence that this feature is an indicative marker. No test was used for demodicosis. In our study, none of the interfollicular findings showed difference between the patient and control groups. Various colors of pigmented hair in the beard were detected at the same time including red, yellow, or brown. However, the incidence of this variety was not investigated.

Dirty dots have been described as potential mimickers of black dots (5). They are variably sized black-colored dust particles that disappear after shampooing (5). They have been detected in both the patient and control groups of any age (5). In this study, they were also detected in both the groups as a non-diagnostic finding.

The differential diagnosis of trichotillomania and AA is tricky. In a recent case report, the "pluck-out sign," characterized by round hemorrhages around the hair shaft, was accepted as a typical finding of beard trichotillomania (24). To the best of our knowledge, there are no articles available about dermoscopic features of tinea barbae, and primary and secondary cicatricial alopecias in the beard area (4). It would be helpful to define the dermoscopic findings of other diseases, including the differential diagnosis of BAA in the future.

CONCLUSION

According to our study, dermoscopic BAA evaluation represents a useful tool in clinical diagnosis. Detecting of white vellus and tapering hairs may be indicative of dermoscopic BAA features. Yellow dots, black dots, and broken hairs that were previously stated as pathognomonic markers for AA of the scalp are not suggested as characteristic for BAA in this study.

Ethics Committee Approval: This study was approved by the Institutional Review Board and Ethics Committee (Approval No: 2018/658), and the study was conducted in accordance with the principles of the Declaration of Helsinki.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Conflict of Interest: The author have no conflict of interest to declare.

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