

# The Psychological Impact Of Universal Alopecia: A Clinical Case Study

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## Abstract:

Universal alopecia represents the most severe form of alopecia areata, an autoimmune inflammatory disease affecting hair follicles and causing hair and/or body hair loss. It involves both total scalp baldness and depilation of all body hair. This rare condition has a prevalence ranging from 1 to 5 per 10,000 individuals. While it tends to affect genetically predisposed individuals, its exact causes remain relatively unknown, and its course is unpredictable. Universal alopecia can be associated with other diseases, particularly autoimmune conditions, and environmental factors may impact symptom development. The physical and psychosocial impact of the disease is substantial, negatively affecting the patient's quality of life with psychological repercussions and challenges in self-acceptance and social interactions. Numerous studies have highlighted an increased prevalence of mood disorders, particularly depression, with potential suicidal ideation. Many dermatologists underestimate the psychological sequelae of universal alopecia, emphasizing the importance of detecting psychiatric symptoms and addressing them within a multidisciplinary framework. This psychological impact will be illustrated in our article through a clinical case of a patient experiencing major depression induced by universal alopecia.

**Keywords:** Alopecia, Quality of Life, Psychosocial Impact, Depression.

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Date of Submission: 14-01-2024

Date of Acceptance: 24-01-2024

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## I. General introduction

Universal alopecia represents the most severe form of alopecia areata, an autoimmune inflammatory disease affecting hair follicles and causing hair and/or body hair loss<sup>[1-2]</sup>. It involves both total scalp baldness and depilation of all body hair. This rare condition has a prevalence ranging between 1 and 5 per 10,000 individuals<sup>[1]</sup>. The average age of individuals affected by alopecia is typically between 25 and 30 years, with 60% of cases initiating before the age of 20<sup>[3]</sup>. It affects both men and women equally<sup>[3]</sup>. However, there is a familial predisposition, with family members of an affected individual themselves experiencing alopecia in one out of three cases<sup>[2]</sup>. Alopecia is sometimes associated with other autoimmune diseases, affecting 29% of patients, such as autoimmune thyroiditis (4.7%), vitiligo (2.1%), atopy, and more rarely, psoriasis<sup>[4]</sup>.

The physical and psychosocial impact of the disease is substantial, negatively affecting the patient's quality of life with psychological repercussions and challenges in self-acceptance and social interactions<sup>[5]</sup>. Environmental factors can also impact symptom development, including sudden or prolonged stress<sup>[6]</sup>. The severity of universal alopecia is assessed based on the affected hair surface but also considering the impairment of the quality of life, leading to notable social repercussions for patients, such as discomfort, decreased vitality, anxiety, and even depression, which may escalate to suicide attempts<sup>[7]</sup>. In this regard, the overall prevalence of psychiatric disorders in patients with dermatoses is estimated to be between 30 and 60%<sup>[7]</sup>.

Unfortunately, most dermatologists underestimate the psychological consequences of universal alopecia, emphasizing the importance of detecting psychiatric symptoms and addressing them within a multidisciplinary framework<sup>[7]</sup>. The psychological impact will be illustrated in our article through a clinical case of a patient experiencing major depression induced by universal alopecia.

## II. Patients and observations

Patient XX, a 27-year-old woman from Algeria, single, and professionally employed as an operator in a pharmaceutical distributor, was admitted to the dermatology department for the management of universal alopecia that had been evolving for 3 years, posing a therapeutic challenge. In the family history, there was a reported occurrence of cranial alopecia in her paternal grandfather and ophiasic alopecia in her paternal uncle. In her personal history, the patient had a two-year follow-up in gynecology for polycystic ovary syndrome and an adenofibroma of the right breast. There were no reported instances of similar dermatoses in the family.

The dermatological disease's history dates back three years, marked by the onset of patchy alopecia on the scalp, initially treated locally without improvement. Dermatologists decided to administer 1g boluses of solumedrol for three days every three months, in combination with methotrexate 15mg/week, followed by precortyl 6 tablets/day (30mg/day) from the third month, leading to complete regrowth. At the 9th month, there was a recurrence of patchy alopecia followed by total scalp baldness, progressing to universal alopecia. The same therapeutic regimen was applied, but unfortunately, it was unsuccessful with no improvement.

**The dermatological examination reveals (Fig. 1 to 2):**

- Non-scarring alopecia of the scalp with a slight fuzz and visible follicular openings, no scales, or erythema.
- Alopecia on the rest of the skin, except for some regrowth in the eyelashes, eyebrows, pubic, and axillary hair.
- Reticulated livedo with small meshes, non-infiltrated on the hands, forearms, feet, and legs.
- Acrocyanosis of the hands and feet.
- Mucous membranes and nails show no abnormalities.

The rest of the examination is unremarkable, except for adenomegaly in the cervical lymph node chains, which requires further exploration.

**Paraclinical Examinations:**

- General blood tests showed no abnormalities.
- Antinuclear antibodies (ANA) test (formerly called anti-nuclear factor) was negative.
- Thyroid hormones (TSH, FT4) and anti-thyroid peroxidase antibodies (anti-TPO antibodies) were within normal ranges, excluding autoimmune Hashimoto's thyroiditis.

Management: In the face of non-recovery and the decision to discharge the patient for outpatient follow-up, the patient exhibited behavioral disturbances, agitation, tearful outbursts, and self-inflicted head banging against the wall, drawing the attention of the entire medical and paramedical staff. She adamantly refused to leave the hospital, forcing us to desperately find solutions for her case. Her stay exceeded two months, during which she had formed emotional bonds with the staff.

Given the agitation based on emotional distress and exaggerated behavior, a psychiatric consultation became necessary. The discharge treatment plan included the prescription of platelet-rich plasma (PRP) injections, considering the normal thyroid function tests. This was combined with methotrexate 15mg/week and prednisone 20mg/day. A follow-up appointment at day 15 was scheduled for consultation with the psychiatrist's report.

**Psychiatric Examination:**

The interview was initially conducted with the patient and later with her parents. The combined history and mental examination revealed the following elements:

The patient is an only child and the eldest of four siblings. She comes from a disadvantaged background. During adolescence, she had a history of eating disorders, specifically anorexia nervosa. She started working at a young age, sacrificing education to support her family. In her romantic life, a stressful event involving a breakup with her fiancé occurred just before the onset of the disease.

In terms of family dynamics, there was a distant relationship with the illiterate and submissive mother, who was mistreated by the father and unable to defend her children due to fear of reprisals.

The onset of evident psychiatric symptoms dates back to around fifteen days after her discharge from the dermatology department.

The patient, during the mental examination, presented as a young woman of normal height and low body weight. She established contact quickly. Her mood was sad, and her eyes were full of tears when asked to remove her hat, revealing a completely bare scalp with tattooed eyebrows.

She avoided eye contact with the examiner. Her speech was low, initially limited to question-and-answer format. Once trust was established, and a relationship based on empathy was formed, she began to express all her emotions, fears, and apprehensions regarding her current and future health, for which she saw no resolution.

She was in total despair. The change in physical appearance disrupted her self-image, experienced as a trauma leading to a diminished ability to recover, accompanied by a sense of incurability.

This disturbance caused her to withdraw socially; she no longer left the house except to visit the doctor, fearing the judgment of others and stigmatization. These motivations resulted in difficulties adapting to the new self-image and psychological exhaustion, leading to psychological distress with suicidal thoughts, exacerbated by the decision to discharge from the hospital (after more than two months), perceived by the patient as rejection and abandonment by the medical team, leaving her with no solution, no hope for recovery.

The patient did not exhibit perceptual or belief disorders. Symbolic functions were intact, but instinctual functions were disturbed, particularly sleep disturbance and significant weight loss due to dietary restriction.

The interview with the parents revealed significant family distress. The mother felt ashamed for her daughter and struggled with the change in appearance. She was obsessed with constant questioning to identify the cause of the disease, changing dermatologists and sometimes resorting to charlatans and "Roqya" (Islamic healing practices) in search of a miracle cure. Over time, she had become exhausted, leading to psychological suffering, despair, and guilt.

The father, on the other hand, denied his daughter's medical issue. He mistreated and rejected her, under the influence of anger and aggression, as if he didn't want to see his daughter in front of him; this alopecia reminded him of his own hidden suffering. He managed to maintain emotional distance from his daughter to avoid sinking, he said. He expressed concerns about the healthcare system, which provided insufficient explanations and failed to treat their daughter.

The brothers also suffered from this situation, lasting for three years. They complained about the conflict-ridden atmosphere within their family: a depressive and absent mother and an angry father. All discussions revolved around their sisters without finding real solutions to stabilize the family.

The evaluation of the intensity of psychiatric symptoms using the Beck Depression Inventory indicated a severe level of depressive symptomatology with a potential for suicidal danger.

#### **Psychiatric Examination Summary:**

- In terms of biography and the history of the illness, the following observations were made:
- Anorexia nervosa during adolescence, indicating a bodily discomfort and a rejection of femininity (subconsciously, the patient did not want to resemble her mother, who was perceived as submissive).
- Some character traits suggestive of a histrionic personality.
- Stressful life events were characterized by precarious living conditions, a disrupted family dynamic, and a separation from her fiancé just before the onset of dermatological problems, representing a significant psychological stressor.
- Evident psychiatric troubles began approximately fifteen days prior, precipitating feelings of rejection from caregivers, loss of hope for recovery, and the belief that she would forever bear an appearance deemed unacceptable, facing societal judgment and stigmatization. The significance of this psychological impact is evident in the adaptive strategies employed by the patient.
- On the mental examination, the symptoms presented by the patient were indicative of a mood disorder, specifically a severe depressive episode induced by a general medical condition (chronic autoimmune disease: universal alopecia) as per DSM-5 criteria (Tab.1) [8]. This condition was precipitated by chronic stress factors, including the severity of the illness, treatment resistance, treatment side effects, dysfunctional family dynamics (expressed emotions), emotional attachment to healthcare personnel, and ultimately, the patient's fragile and histrionic personality. Psychiatric management was based on prescribing an antidepressant concurrently with dermatological treatment, taking into consideration the balance of benefits and risks. Individual and family psychotherapy were deemed essential, with psychotherapeutic intervention complementing dermatological care. Therapeutic alliance was achieved through attentive listening. Systematized psychotherapies primarily focused on addressing the disrupted physical appearance, guiding the patient toward reconciling with her new self-image. Additionally, addressing the acceptance of anger, despair, and relearning to live with the disease aimed to alleviate suffering.
- In addition to psychotherapeutic intervention, camouflage techniques such as wigs, keratin fibers, hair prosthetics, and tattooing of eyebrows and eyelashes were proposed and proven effective in concealing alopecic areas. The goal was to promote psychological well-being and destigmatization.
- This pathology has not been without painful consequences for the patient's family; family therapy was conducted for all members, aiming to ease tensions and address expressed emotions that perpetuated the patient's suffering and the rapid deterioration of her alopecia. Ultimately, the primary objective of these therapies was to provide psychological support for the patient and her family, helping them learn to live better with this incurable condition.

**Table.1:** diagnostic criteria for depression according to DSM-5

Reminder of DSM-5 diagnostic criteria A and B for depression
<p><b>A. Five (or more)</b> of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.</p> <p>Note: Do not include symptoms that are clearly attributable to another medical condition.</p> <ol style="list-style-type: none"><li>1). Depressed most of the day, nearly every day as indicated by subjective report (e.g., feels sad, empty, hopeless) or observation made by others (e.g., appears tearful)</li><li>2). Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by subjective account or observation)</li><li>3). Significant weight loss when not dieting or weight gain (e.g., change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day</li><li>4). Insomnia or hypersomnia nearly every day</li><li>5). Psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)</li><li>6). Fatigue or loss of energy nearly every day</li><li>7). Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).</li><li>8). Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by subjective account or as observed by others)</li><li>9). Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide</li></ol> <p><b>B. The symptoms cause clinically significant distress</b> or impairment in social, occupational, or other important areas of functioning.</p>

### III. Discussion

Alopecia areata, like many dermatological pathologies, is a multifactorial disease involving genetic predisposition, autoimmune response, and environmental factors.

#### The pathophysiological hypothesis

The pathophysiological hypothesis posits that the causes of alopecia are related to the immune system. This hyperactivity of the immune defenses leads to the narrowing of follicles, significantly slowing down the growth and production of hair shafts. Specifically, T lymphocytes start to perceive hair follicles not as cells of the body but as foreign entities to be eliminated.

Consequently, these lymphocytes attack the hair follicles, resulting in hair and fur loss. While stress is often implicated, it is not considered a standalone cause but rather as an accelerator of alopecia <sup>[2]</sup>, as observed in our patient's case.

#### Genetics

From a genetic standpoint, the increased risk of alopecia areata among the relatives of a patient with alopecia has led to the consideration of genetic predisposition, as observed in our patient, who had a familial history of alopecia on her paternal side <sup>[9]</sup>. Indeed, several genes have been identified as predisposing factors for the occurrence of alopecia <sup>[9-11]</sup>.

#### Environmental Factors

##### Quality of Life

The diagnosis of chronic total or universal alopecia in our patient did not pose a diagnostic challenge; however, it had a significant impact on the quality of life and self-image with substantial psychological repercussions <sup>[12]</sup>. The absence of hair in our patient had a considerable effect on social functioning, and the discomfort due to the lack of eyebrows and eyelashes explained this significant impairment of quality of life <sup>[13]</sup>. It tends to be associated with avoidance of attachment, significant alexithymia <sup>[14]</sup>, combined with an anxious and histrionic personality profile, as evidenced by her reaction toward the medical staff in the dermatology department at the time of discharge announcement, where emotional bonds had been formed.

Furthermore, social support was very limited. This led to great suffering for the patient, turning it into a fixation. She tended to avoid social contacts, isolating herself more and more. This impairment of quality of life appears to be slightly improved, particularly with eyelash tattooing. Indeed, literature case studies reveal that patients with total and universal alopecia had statistically higher Dermatology Life Quality Index (DLQI) scores than those with patchy alopecia <sup>[15]</sup>, indicating significant impairment of quality of life, consistent with our clinical case <sup>[16]</sup>.

A study showed that 58% of alopecia patients believed that it had major consequences on their lives <sup>[17]</sup>, affecting their social, familial, sexual lives, and daily activities. In this context, systemic psychotherapy and stress management were implemented in our patient and her family to better cope with stressful situations. Given the significant psychological impact altering self-image, our approach, in addition to antidepressant medication,

involved supportive and guidance psychotherapy. This intervention ideally should have been initiated early in the course of the somatic illness to help the patient and her family come to terms with this severe and consequential disease.

### **The involvement of stress episodes:**

They are not directly implicated in the genesis of alopecia areata but are associated with outbreaks of the condition. It seems that patients with alopecia areata exhibit an inappropriate reaction to stress, related to alexithymia (difficulty expressing emotions). Stress activates the adreno-hypothalamo-pituitary axis, or rather the adrenergic and corticotropin-releasing axes [18]. In response to acute stress, there is an overproduction of catecholamines and glucocorticoids. In response to chronic stress, there is a continuous overproduction of glucocorticoids with accentuated peaks of secretion of catecholamines and glucocorticoids in cases of superimposed acute stress [18]. Corticosteroids are regularly used as a treatment for autoimmune diseases. In the literature, several studies note a significant association between the clinical severity of alopecia areata and the onset of mental health issues, which aligns with our clinical case.

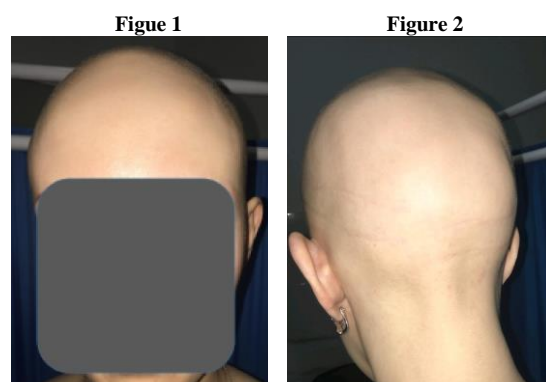
Studies seem to confirm this, as one in four individuals with alopecia areata reports having experienced a traumatic event or an inappropriate reaction to stress just before the onset of the disease, as was the case with our patient. She had experienced a separation just before the onset of her symptoms. Stress related to the revealing skin condition leads to relapses and, at times, hinders remission, which aligns exactly with our patient's experience.

The stressful event can thus be both an aggravating and protective factor for this skin condition. Regarding psychotherapeutic work, it was based on the disturbed physical appearance, guiding the patient to reconcile with her new self-image for better adaptation (coping). Indeed, coping (a term created by LAZARUS, 1984) [19] represents the cognitive and behavioral mechanisms used by individuals to face and manage stressful situations. It is about how the individual handles these situations. Coping strategies are not specific to the nature of the event but are determined by dispositional characteristics of the individual. The strategies used depend on how the individual perceives and interprets the event, based on their cognitive and conative personal characteristics (COHEN 1983 cited by BRUCHON-SCHWEITZER 2002) [20]. Thus, certain personality traits such as anxiety, neuroticism, depression, and hostility would predict specific assessments (perceived high stress, low perceived self-efficacy) and coping strategies focused on emotion (VAN HECK 1997 cited by BRUCHON-SCHWEITZER 2002) [20].

In general, the consequences of total alopecia areata will be influenced by the developed coping strategies and pre-existing personality traits. In other words, stress is indeed the combination of a stressful event, an inadequately adjusted subject, resonance with a personality, personal history, and personal defensive capabilities, a constitution allowing endocrine and immune repercussions, with a subject-specific expression of the disease.

### **Comorbidity of Alopecia Areata and Depression**

The interaction between these two pathologies is indeed complex; studies have demonstrated that each of these conditions could potentially affect the onset, progression, exacerbation, or persistence of the other [21]. The disability experienced by patients with extensive alopecia areata is more closely linked to social concerns and their beliefs regarding the severity, chronicity, and visibility of the disease. This aligns precisely with our clinical case. The management of universal alopecia areata and depression requires a specialized multidisciplinary approach involving a dermatologist and a psychiatrist, as it was the case for our patient.



**Figure 1:** Universal Alopecia (front view)

**Figure 2:** Universal Alopecia (back view)

### **Conflict of Interest**

The authors declare no conflicts of interest.

### **Authors' Contributions**

All authors contributed to the completion of this work and have read and approved the final version of the manuscript.

## **IV. Conclusion**

Universal alopecia areata is a rare autoimmune condition that can have profound psychological effects on patients and their families. Its occurrence following psychological trauma (acute or chronic stress) has long raised the possibility of a psychogenic factor triggering this condition, even though prospective studies have not been able to provide absolute proof. This is not contradictory to the autoimmune concept of alopecia areata, as the relationship between stressful events and autoimmune diseases has been well documented. The psychological impact of universal alopecia areata is severe and underestimated by dermatologists. It should be recognized and addressed within the framework of a multidisciplinary approach.

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