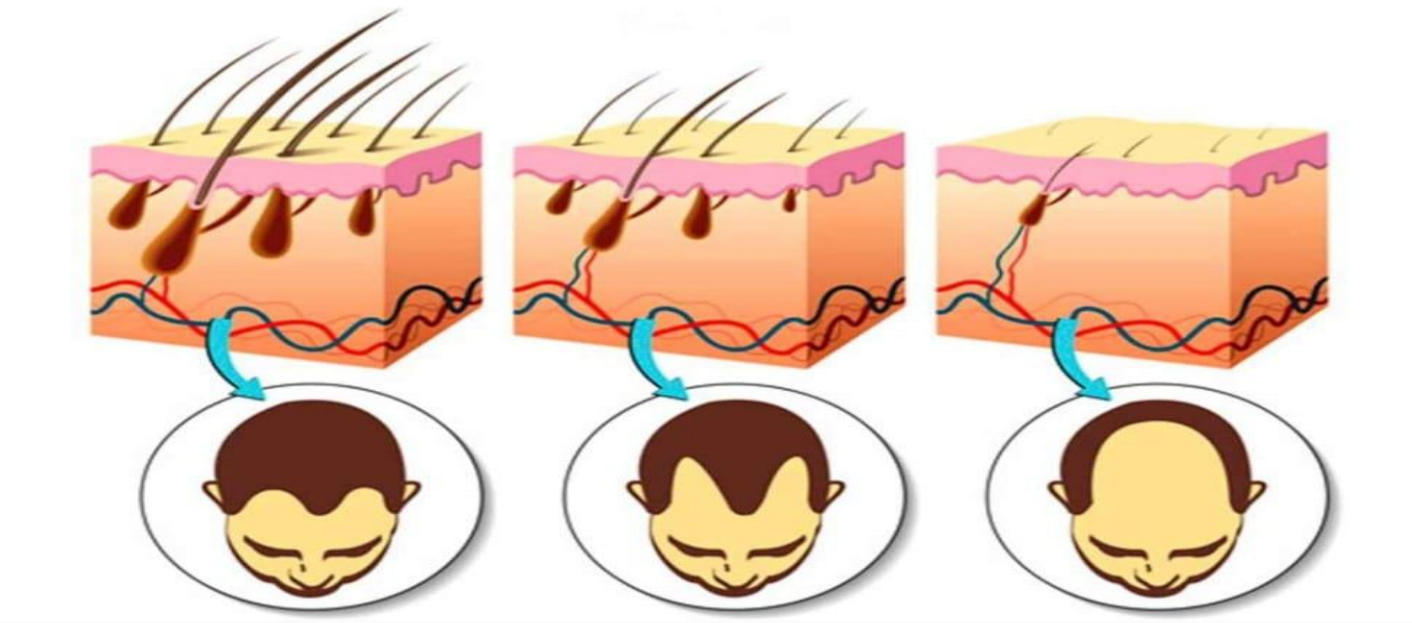

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Blessings
are not valued till
they are gone


Every
hair
is
precious

Hairs are keratinized elongated structures derived from invaginations of epidermis and project out from most of the body surface.

NUMBER OF HAIRS

Scalp : About 1,00,000 hairs.

Face : About 600 hairs /cm^2.

Rest of the body : About 60 hairs/cm^2.

TYPES OF HAIR

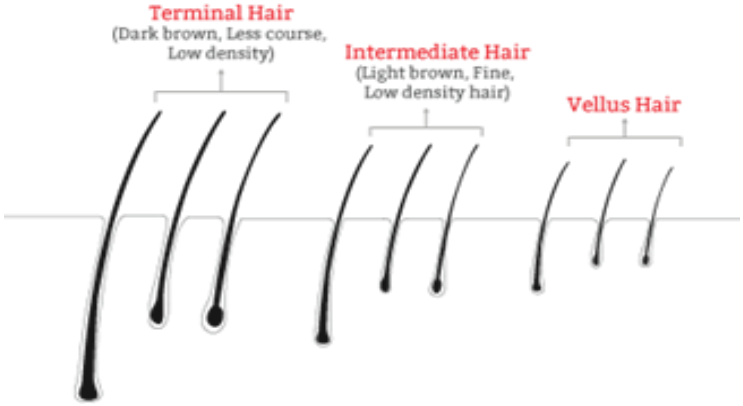
It is classified into 4 types :

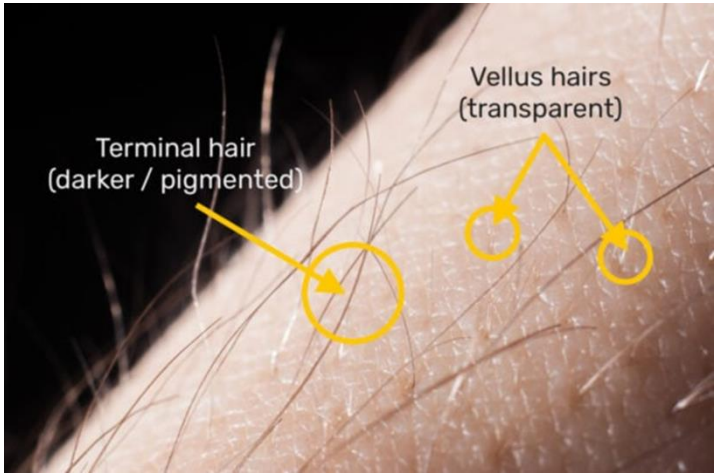
1) Lanugo Hair : Soft, fine, lightly pigmented hairs of fetus

2) Vellus Hair : Fine hairs cover most of the body of youngers and adults

3) Intermediate Hair : Transition stage between vellus and terminal hair

4) Terminal Hair : Long, coarse, pigmented hairs with larger diameter


Terminal Hair
(Dark brown, Less course, Low density)
Intermediate Hair
(Light brown, Fine, Low density hair)
Vellus Hair


Terminal hair
(darker / pigmented)
Vellus hairs
(transparent)


mipediatra
ONLINE

FUNCTION:

1. Protects body surface from external injury.
2. Helps in sensory function.
3. Psycho – social importance.
4. Forensic importance.
    i. Identification of race, sex, age .
    ii. Cause of death- can be determined.
    iii. Time of death- can be determined.
5. Assist in thermo- regulation.

STRUCTURE OF HAIR

Hair divided into :

1)Hair shaft –

The part that sticks out of the skin surface.

2)Hair follicle –

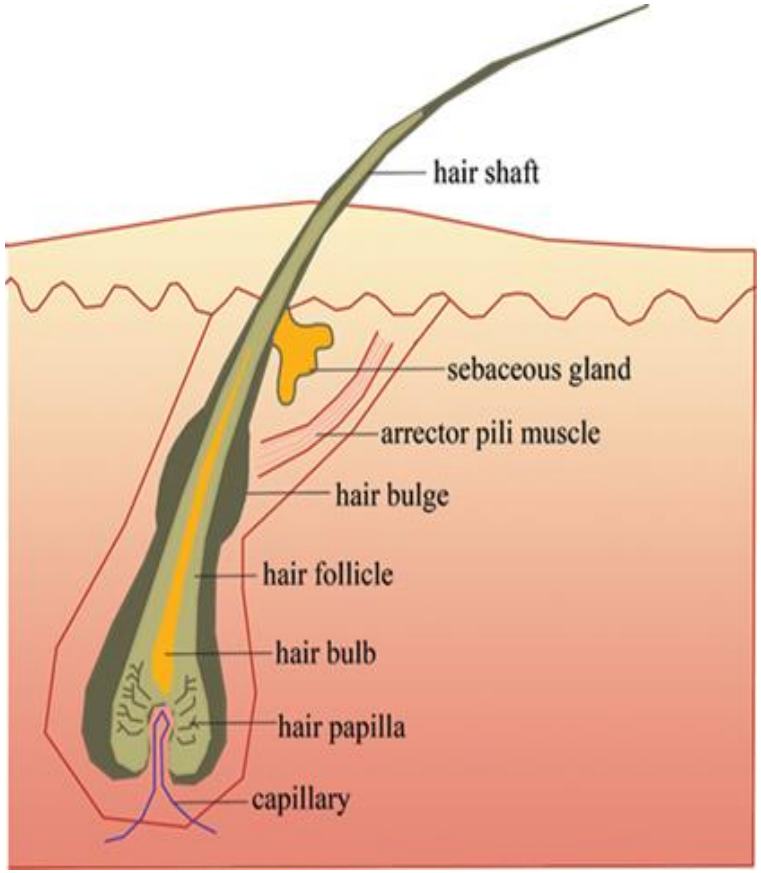
The part that located under the skin surface.

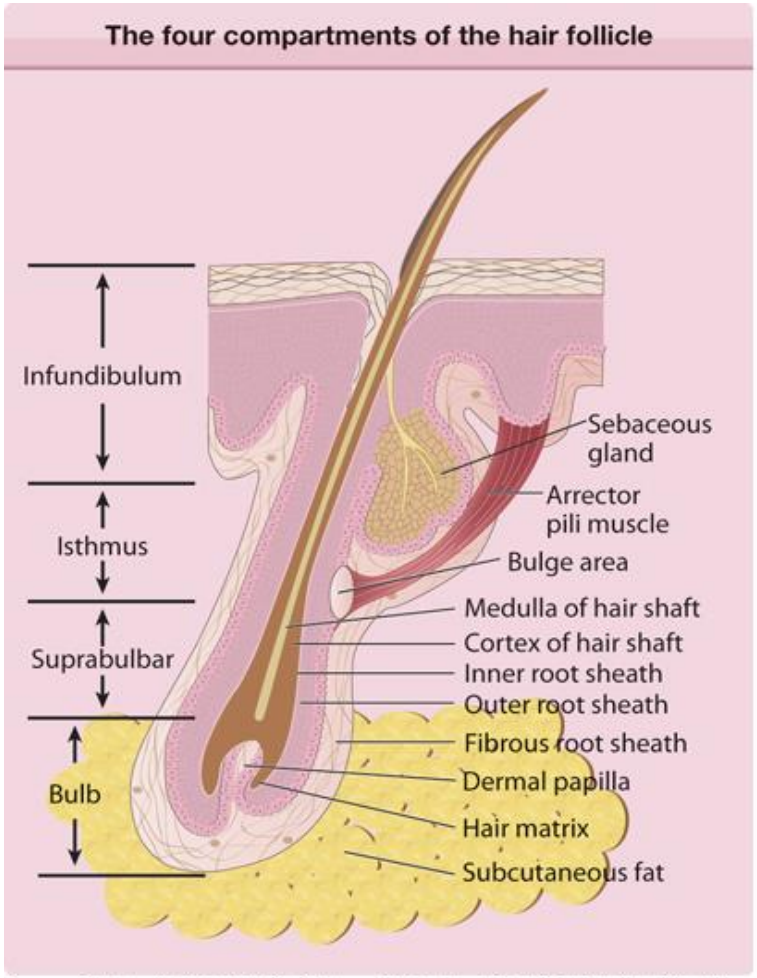
It has 4 parts: Infundibulum

Isthmus

Suprabulbar

Bulb





Source: Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ, Wolff K: *Fitzpatrick's Dermatology in General Medicine, 8th Edition*: www.accessmedicine.com

HAIR CYCLE:

It is believed that each hair follicle goes through 10-20 hair cycle in a life time.

There are four phases-

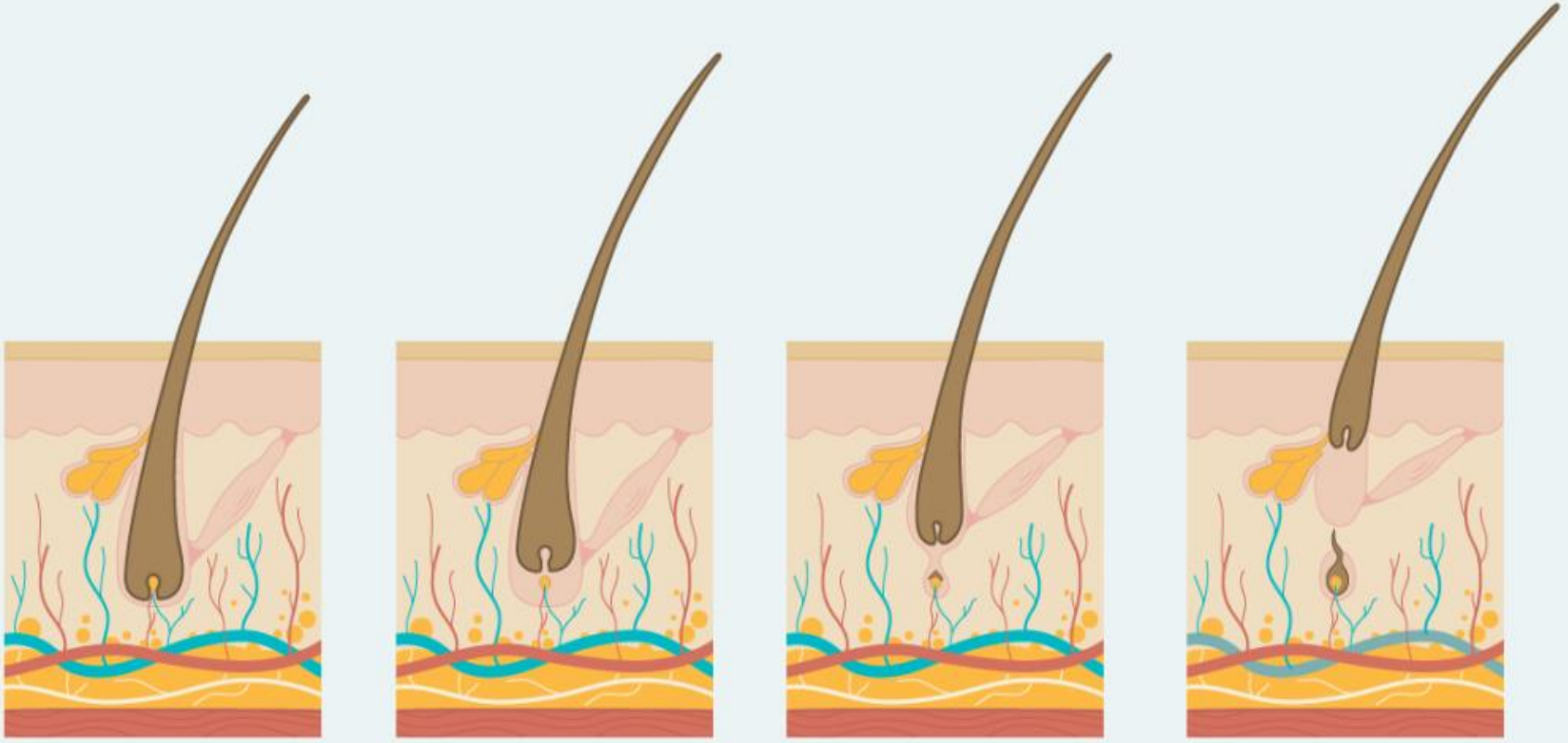
Anagen : Active phase (last for 2-8 years)

Catagen: Transitional phase (last for 2-4 weeks)

Telogen : Resting phase (last for 2-4 months)

Exogen : Hair shedding phase.

Stages of Hair Growth



Anagen
(growing phase)

Catagen
(transition phase)

Telegen
(resting phase)

Exogen
(shedding phase)

CLINICAL SIGNIFICANCE OF HAIR CYCLE

- Physiological hair shedding: 30-50 hairs/day,
  up to 150 hairs/day

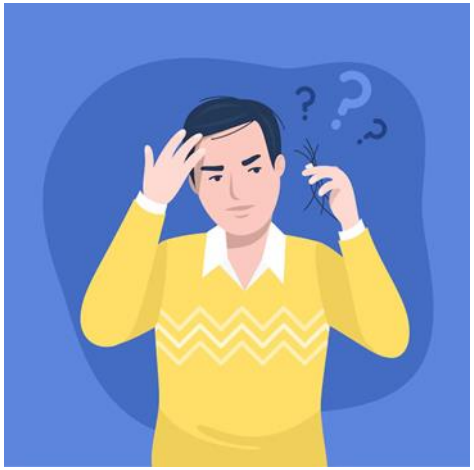
- Pathological hair shedding: more than 150 hairs/day

ALOPECIA

.....A Silent Social Stigma

WHAT IS ALOPECIA?

Absence or loss of hair specially of the scalp refers to alopecia.



WHAT PATIENT COMPLAINS?

- Hair shedding
- Hair loss
- Hair thinning
- Drinking iron containing water
- Using helmet
- Changing place
- Scaly scalp
- Itchy scalp
- Painful scalp
- Burning scalp

WHAT WE WANT TO KNOW?

- Duration of hair loss
- Onset – sudden/gradual
- Occupation
- Life style
- Food habit
- Family history
- Smoking history
- Co-morbidity(thyroid/SD/Psoriasis/LP)
- Treatment history

WHAT EXAMINATION WE SHOULD DO?

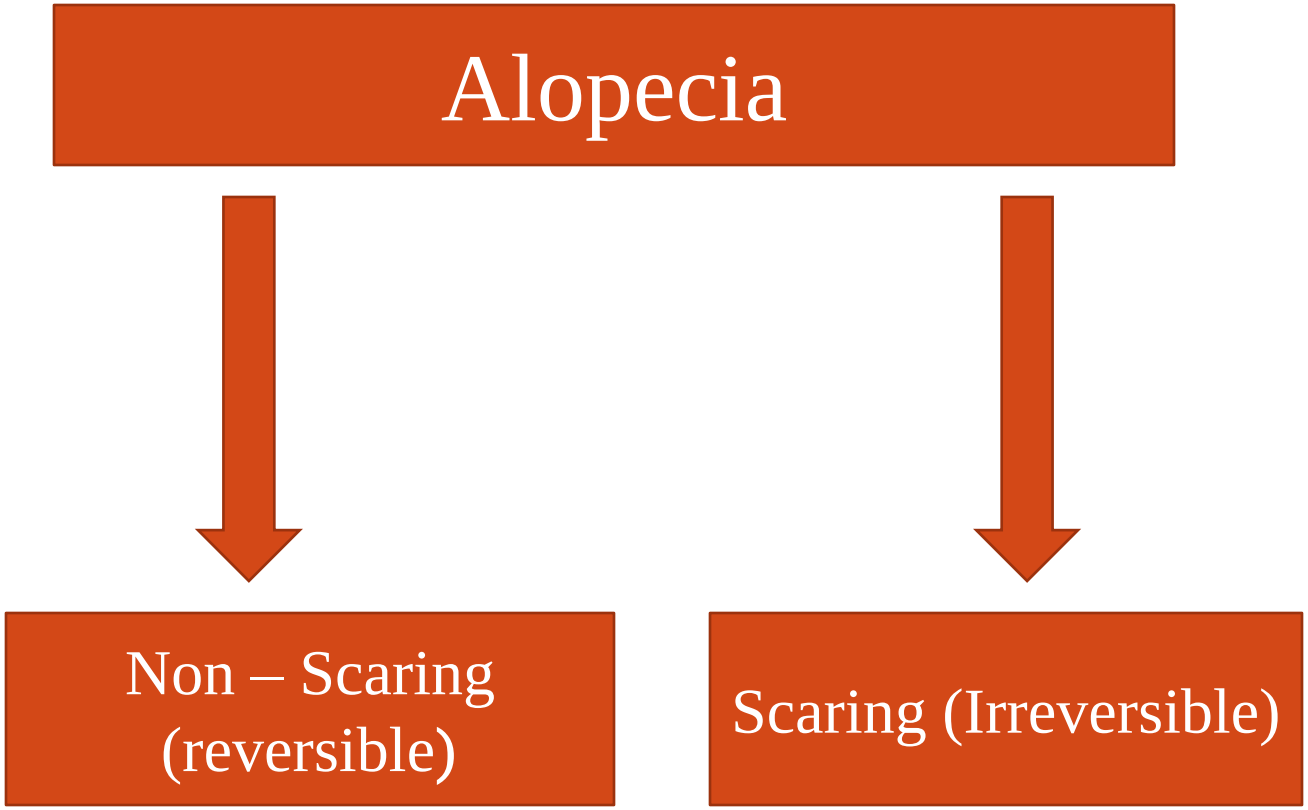
Hair and scalp examination

- Inspection
- Palpation
- Dermoscopy
- Trichoscopy
- Hair pull test

WHAT LABORATORY WORK UP WE CAN DO?

- CBC
- TSH, FT4
- S.Testosterone
- Vit-D3
- SGPT
- S.Creatinine
- RBS
- S.Iron
- S.Ferritin
- S.Calcium
- ANA
- Hair plucking for M/E and culture
- Scalp biopsy and DIF

CLASSIFICATION OF ALOPECIA:



CAUSES OF SCARRING ALOPECIA

- DLE
- Lichen planopillaris
- Pressure alopecia (traction alopecia)
- Localized scleroderma (Morphea)
- Dissecting cellulitis
- Sarcoidosis
- Aplasia cutis congenita

DISCOID LUPUS ERYTHEMATOSUS

- 58 year old male
- Presented with erythematous patch and plaque with hair loss
- Duration 2 years

LICHEN PLANO PILARIS

- 30 year old female
- Patchy hair loss for last 2 years
- Burning sensation on scalp
- Taking common hair loss medicine
- No improvement

PRESSURE ALOPECIA

- 35 year old, female
- Regularly making tight bun or braid
- Presented with gradual broadening of the forehead

LOCALIZED SCLERODERMA(MORPHEA)

- 16 year old, female
- Presented with atrophic plaque with loss of hair on scalp
- History of hair fall for 2 years

CONGENITAL ALOPECIA CUTIS

- A male newborn baby, 1 day of age
- Presented with absence of hair along with loss of skin over the vertex about 4-5 cm since born
- Red, eroded, lacerated surface was exposed

CAUSES OF NON – SCARRING ALOPECIA

- Alopecia Areata
- Telogen effluvium
- Anagen effluvium
- Androgenic Alopecia
- Trichotillomania
- Endocrinologic alopecia

CASE 1

- A 5 year old boy
- Presented with sudden onset of two oval patch over scalp
- Completely absence off hair with smooth surface

ALOPECIA AREATA

Rapid and complete loss of hair in one or most often several round or oval patches, usually on the scalp, beard area, eyebrows, eye lashes and less commonly on other hairy areas of the body.

Alopecia Barbae

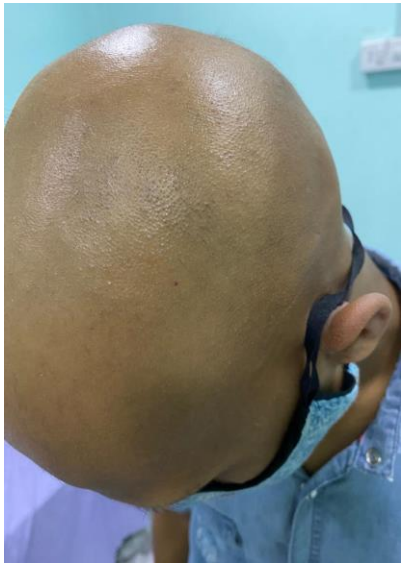
CLINICAL VARIANTS

- **Alopecia totalis – Total loss of scalp hair.**
- **Alopecia universalis – Loss of entire body hair including scalp hair.**
- **Ophiasis – Loss of hair confluent along the temporal and occipital scalp.**
- **Sisaipho - Loss of hair of entire scalp except temporal and occipital area.**

CASE 2





ALOPECIA TOTALIS

ALOPECIA UNIVERSALIS

OPHIASIS

SISAIPHO

ASSOCIATED DISEASE

Higher incidence of alopecia areata in patients of-

1. ***Atopic dermatitis.***
2. ***Autoimmune disease –***
    - ***SLE***
    - ***Thyroiditis.***
    - ***Myasthenia gravis.***
    - ***Vitiligo.***
3. ***Lichen planus.***
4. ***Down syndrome.***

TREATMENT OF ALOPECIA AREATA

- Spontaneous recovery is extremely common for patchy alopecia areata
- Treatment options are : 1) Topical corticosteroid
  2) I/L corticosteroid
  3) Minoxidil 2-5%
  4) Cryotherapy
  5) PUVA
- Treatment for non responsive patch are : 1) Systemic steroid
  2) Methotrexate
  3) Tofacitinib
  4) Baricitinib
  5) Sulfasalazine
  6) Cyclosporine
  7) Oral PUVA
  8) Excimer laser

CASE 3

- 22 year old, male
- Gradual hair thinning since last 3 years
- Specially in frontal area and crown
- Positive family history
- History of applying hair gel

CASE 4

- 25 year old male
- Gradual thinning of hair for last 7 years
- Specially in crown and frontal area
- Positive family history

CASE 5

- 23 year old, female
- Gradual hair thinning
- 5 years history of hair fall
- Christmas tree pattern hair loss

CASE 6

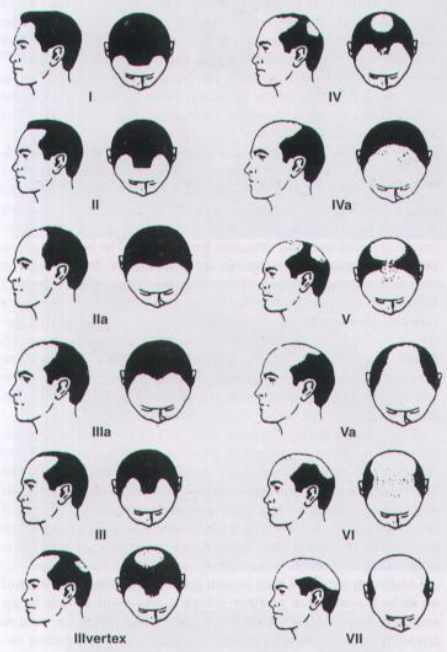
- 20 year old, male
- Gradual thinning of hair
- Temporal hair recession present
- History of hair fall for 4 months
- Poor dietary habit

ANDROGENIC ALOPECIA

It is a very common, potential reversible scalp hair loss that generally spares parietal and occipital areas of the scalp occur at age twenties or early thirties.

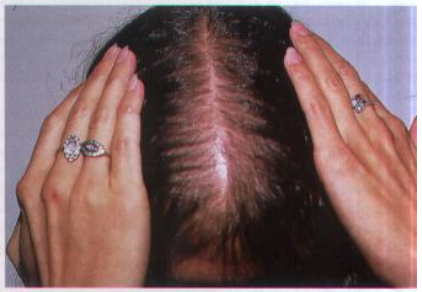
MALE PATTERN OF HAIR LOSS

FIGURE 71-17



Hamilton-Norwood classification of androgenetic alopecia in men. (*Reprinted with permission from Olsen.*[91])

FIGURE 71-18



Hair loss in a woman with androgenetic alopecia. Note the "Christ tree" pattern of progressive loss towards the frontal margin.

minoxidil 2% is a nonspecific hair-growth promoter. This medi tion must be applied to the scalp a minimum of twice a day (l is subthreshold for response), with the earliest response seen a months and generally a maximum response at 1 year.[91] About to 25 percent of persons so treated will have notable regrowth, generally these are the men and women whose involved hairs finer than normal but not minuscle at treatment onset. Most patie will experience at least a stabilization of loss. Higher concentrati of topical minoxidil (5%) are more effective[105] and have recen been approved for use in men with androgenetic alopecia.

Surgical treatment for androgenetic alopecia has undergone d matic improvement in recent years.[106] Cosmetic coverage is limi by the amount and density of available occipital donor hair and expertise of the surgeon. Ideally, male candidates for this proced should be those in whom final resculpturing of the frontal h line has naturally occurred. A combination of minigrafts (1.5- 2.5-mm grafts) and micrografts (1 to 2 hairs each graft) of do hair are used more frequently now than standard 4-mm plugs to in areas of baldness. The micrografts are particularly useful as t do not require removal of a plug of tissue into which to insert graft; rather, a small hole or incision can be made to accommod a single or a few donor hairs. Micrografting is the surgical treatm

FEMALE PATTERN OF HAIR LOSS

Figure 3 Global photographs taken at baseline and at 12 weeks after the initiation of treatment in eight women with female pattern hair loss treated with conditioned media of adipose tissue-derived stem cells (ADSC-CM)

ETIOPATHOGENESIS OF ANDROGENIC ALOPECIA

- Exact mechanism is unknown
- Genetic predisposition
- Androgen excess,

  Ovarian cause-

  - Polycystic ovarian syndrome,
  - Other ovarian tumor,

- Adrenal cause- Congenital adrenal hyperplasia (androgenital syndrome)
- Carcinoma – Adrenal adenoma

TREATMENT OF ANDROGENIC ALOPECIA

1. General measure

2. Topical – Minoxidil

Adenosine

3. Systemic - Finasteride

Dutasteride

Fluridil

4. In women – Spiranolactone

Flutamide

Cyproterone acetate

5. Minimal invasive surgery-

PRP

CASE 7

- 30 year old , female
- Presented with excessive diffuse hair loss for last 5 months
- History of delivery of a baby 5 months back

CASE 8

- 8 year old, girl
- Broad hairline and prominent temporal recession present
- No significant family history
- Poor diet
- History of hair fall for short duration

TELOGEN EFFLUVIUM

Telogen effluvium presents with excessive shedding of normal telogen hairs most often, occurs 3-5 months after the premature conversion of many anagen hairs to telogen hairs.

CAUSES OF TELOGEN EFFLUVIUM

- **Endocrine**
  - Hypo- or hyperthyroidism.
  - Postpartum.
  - Peri- or postmenopausal state.
- **Nutritional**
  - It includes biotin, protein, iron, zinc, essential fatty acid deficiency and caloric deprivation
- **Others**
  - Drugs
  - OCP
  - Physical stress
  - Psychological stress
  - Surgery

Post partum alopecia

- Temporary hair loss at the end of pregnancy
- Hair growth cycle usually returns to normal within one year after delivery of the baby

Treatment of telogen effluvium

- It is mostly self correcting
- Patient is advised to gentle handling of hair
- Underlying cause have to be treated if present like any scalp disorder or hormonal problem

CASE 9

- 10 year old, female
- Patchy hair loss
- Right post auricular area, both eyebrows
- 3 years history of hair fall

TRICHOTILLOMANIA

- A neurotic practice of plucking or breaking hair from scalp or eyelash resulting usually localized or widespread areas of alopecia, contains hairs of varying length.
- Mostly girls under age of 10 years.
- Disturbed mother- child relationship.
- Behavior therapy is the main treatment .

Clinical, Cosmetic and Investigational Dermatology
Dovepress
CASE REPORT

A Case of Acute Telogen Effluvium After SARS-CoV-2 Infection

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Abstract: As the number of COVID-19 cases increasing, more and more patients are concerning about alopecia, a sequela after SARS-CoV-2 infection. We here report a case of a 38-year-old woman with a typical acute telogen effluvium (ATE) after recovery from COVID-19.

Keywords: COVID-19, SARS-CoV-2, acute telogen effluvium, alopecia

Case Presentation

On January 29, 2020, a woman aged 38 years old presented fever and cough but she did not visit a doctor. When she visited Beijing Haidian Hospital on February 8, she was diagnosed with COVID-19 and admitted to the hospital. On February 21, she recovered and was discharged from the hospital. Up to April 30, she visited our department with complaint about severe hair loss in the past week (>150 hairs/day), as well as oily scalp and trichodynia. Dermatology examination revealed diffuse hair loss involving the entire scalp. There was no obvious patchy hair loss area, and the forehead hairline was not significantly receded (Figure 1A). The pull test was positive in the whole head. Dermoscopy showed scalp inflammation, capillarectasia, dandruff, increased density of telogen hairs, and relatively uniform diameter of the terminal hair shaft. There was no broken hair, black dots, exclamation point hairs, etc (Figure 2A). The pigmentation at the proximal end of hair root was reduced, and the end of hair root was clubbed (Figure 3). Blood tests excluded vitamin B12, trace elements deficiencies, autoimmunity, and thyroid dysfunction. Therefore, the patient was diagnosed as acute telogen effluvium. Topical 5% minoxidil, mixed with halcinonide solution, was sprayed evenly on the hair loss area 1–2 times a day for treatment. Meanwhile, selenium sulfide lotion mixed with shampoo 2–3 mL was used to wash hair 2–3 times a week. After 3 months of treatment, the patient felt hair loss was significantly alleviated; symptoms of oily scalp and trichodynia disappeared. The hair pull test turned negative, and many new hairs grew out (Figures 1B and 2B). The study protocol was approved by the Medical Ethical Committee of China–Japan Friendship Hospital, and written informed consents were obtained from the patient to publish the case details.

Discussion

Acute telogen effluvium (ATE) is clinically manifested as diffuse alopecia of the whole head with a sudden increase in hair loss. The clinical manifestation of this "the pain in the hair" are named trichodynia. The onset and progression of hair loss

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LETTER TO THE EDITOR

A case of telogen effluvium followed by alopecia areata after SARS-CoV-2 infection

Dear Editor,

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, which causes coronavirus disease 2019 (COVID-19), is associated with various conditions, including autoimmune diseases, such as systemic lupus erythematosus, as it induces a cytokine storm.[1] As key components of the immediate antiviral response, type I interferons (IFNs) are crucial for restricting viral replication and spread through autocrine and paracrine type I IFN receptor signaling.[2]

We report herein a case of alopecia areata (AA) followed by telogen effluvium (TE) after SARS-CoV-2 infection. A 47-year-old woman experienced sore throat, headache, and fever of 38.5°C. A polymerase chain reaction test indicated that she was positive for SARS-CoV-2, and she was admitted to a designated medical institution for continuous high fever and severe pneumonia induced by COVID-19. Three weeks after discharge, she experienced patchy hair loss on her head, and she was referred to our hospital 7 weeks after discharge (Figure 1a). Dermoscopic observation revealed black dots (blue arrow) and yellow dots (yellow arrow; Figure 1b). Flow cytometric analysis of peripheral blood mononuclear cells (PBMCs) showed a relatively high frequency of IFN-γ-producing T cells (10.2%) when compared to IL-4-producing T cells (0.64%) by the intracytoplasmic staining of the PBMCs (Figure 1c). The patient also experienced significant hair shedding (more than 200 hairs/day) from the whole scalp skin shortly after the AA improved (13 weeks after the COVID-19 infection; Figure 1d). Dermoscopic observation revealed many vellus hairs on the scalp skin (Figure 1e). As a result of the hair plucking test, telogen hair accounted for about 40%. After 8 weeks, terminal hair regrowth was observed, and the excessive hair shedding had almost completely stopped.

COVID-19 is characterized by mild to severe respiratory illness due to overzealous cytokine production, the so-called cytokine storm, especially IFNs from plasmacytoid dendritic cells.[3] This cytokine storm can lead to other disorders, including several autoimmune diseases.[1] IFN-α and IFN-γ are also a crucial inducer of AA after viral infections.[2] Indeed, there have been several case reports of the new onset of AA 1–2 months after the onset of COVID-19.[4] Similarly, our case suffered from patchy hair loss on the scalp skin 5 weeks after the onset of COVID-19. Of course, there is no direct way to prove that COVID-19 is the cause of AA, but IFN-γ dominant intracytoplasmic cytokine balance may indicate COVID-19-induced AA in our case.

Our patient also suffered from acute TE, which is characterized by significant hair shedding that lasts <6 months and results from an abrupt shift in the hair cycle from the anagen phase to the catagen phase and subsequent entry into the telogen phase. In our case, the COVID-19-induced cytokine storm may have caused not only high fever and severe pneumonia but also a sudden switch from the anagen to the catagen phase, followed by the telogen phase.[5] As the COVID-19 pandemic continues, more patients may experience several types of hair loss. Careful observation of each hair loss symptom, and appropriate diagnosis and treatment selection are important.

CONFLICT OF INTEREST

None declared.

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CASE REPORT

Not just thinning: A case of alopecia universalis after mild COVID-19

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Key words: alopecia areata; alopecia universalis; areata; COVID-19; hair loss; COVID-19 infection; SARS-CoV-2 virus.

INTRODUCTION

SARS-CoV-2 infection and its inflammatory sequelae have been reported to affect hair, with the most common association being telogen effluvium (TE).[1] Onset of TE noted as diffuse thinning following SARS-CoV-2 infection is reported to occur after 1 to 3 months on average, with trichoscopy findings of empty hair follicles, thin terminal hairs, and 1-hair follicular units.[2] Implicated mechanisms include stress of the disease, proinflammatory cytokine release, or direct viral damage to the hair follicles.[2] COVID-19 has also been associated with exacerbation of autoimmune conditions. Although 1 study showed that patients with preexisting alopecia areata (AA) did not have worsened hair loss after mild-to-moderate COVID-19,[3] reports on new-onset or recurrent AA associated with COVID-19 are scarce.[4]

The majority of SARS-CoV-2 infections are considered being of mild severity (81%),[5] defined by the National Institutes of Health as having signs and symptoms such as fever, cough, loss of taste or smell, and diarrhea, but without dyspnea or abnormal findings on chest imaging. Although we do not usually expect mild cases to involve a severe impact on hair, we report a case of a patient with rapid-onset *ale-totro* AA that presented in a diffuse pattern and that in the early stages was clinically indistinguishable from TE.

Abbreviations used:
AA: alopecia areata
SALT: severity of alopecia tool
TE: telogen effluvium

CASE REPORT

A 28-year-old woman with a history of allergic rhinitis initially presented to an outside dermatologist with a new-onset rapid diffuse hair loss 1 month after a mild SARS-CoV-2 infection. A scalp biopsy taken by the outside dermatologist was consistent with AA, showing a decrease in the number of anagen follicles and an increase in the number of catagen and telogen ones. Surrounding inferior portions of numerous follicles showed aggregates of lymphoid cells. Periodic acid–Schiff staining was negative for hyphae. Despite timely treatment with 1 to 2 cc intralesional triamcinolone injections (5.0 mg/cc) every 2 to 6 weeks, methylprednisolone dose pack, and platelet-rich plasma injections to the scalp, she had near-complete hair loss, when she presented to our dermatology clinic 5 months after onset. She was previously healthy, with no previous personal or family history or AA, no recent surgeries, allergy exacerbations, or new medications. She had not received any COVID vaccinations, as they were not yet available to the general public at this time. She had acne that was well controlled on spironolactone 50 mg daily and norethindrone/ethinyl estradiol. Her family history was notable for psoriasis and psoriatic arthritis in her father. Physical examination revealed a 90% hair loss on the scalp with a Severity of Alopecia Tool (SALT) score of 90 (Fig 1, *A*) and complete loss of her eyelashes and eyebrows. Trichoscopy of the scalp revealed yellow dots, short vellus hairs, black dots, and exclamation mark hairs. General examination revealed no other cutaneous or

From the Department of Dermatology, University of California–Irvine.
Funding sources: None.
IRB approval status: Not applicable.
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Anais Brasileiros de Dermatologia 2022;97(2):193–203

Anais Brasileiros de Dermatologia

REVIEW

Effects of chemical straighteners on the hair shaft and scalp*

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Available online 17 January 2022

KEYWORDS
Alopecia;
Hair;
Hair diseases;
Hair preparations;
Keratins, hair-specific

Abstract
Background: The effects of chemical straighteners on the scalp and hair shaft are not fully known, although such substances are widely used. Hair straightening became popular in Brazil with the use of formaldehyde and its derivatives, despite the prohibition by the current legislation.
Objective: To identify changes in hair shaft and scalp caused by the use of chemical straighteners.
Methods: A search was performed using keywords in three databases from 03/16/2020 to 05/20/2020, with publications between the years 2000 to 2020. After applying the inclusion and exclusion criteria, 33 articles were selected for review.
Results: In some studies, hair relaxers were associated with eczema, desquamation, pain, burns, and inflammation in the scalp. Hair loss, damage to the shaft, alteration in the color of the hairs and in the composition of their amino acids were observed. Findings are variable across the studies.
Study limitations: The search was restricted to three databases, in two languages, different study designs were accepted.
Conclusions: Straightening techniques can have side effects, including scalp inflammation, damage to the shaft, and hair loss. Its long-term effects remain unknown and further studies are necessary.

* Study conducted at the Department of Dermatology, Complexo Hospital de Clínicas, Universidade Federal do Paraná, Curitiba, PR, Brazil.
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ORIGINAL ARTICLE

A Comparative Study on the Prevalence of Depression and Suicidal Ideation in Dermatology Patients Suffering from Psoriasis, Acne, Alopecia Areata and Vitiligo

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Background: Due to their chronic nature, influences on the body image, hopelessness toward complete recovery and frequent recurrences, dermatological diseases seem to be one of the important predisposing factors in depression and suicidal ideation. Thus, the present study aimed at evaluating the degree of depression and suicidal ideation in patients with psoriasis, acne, alopecia areata and vitiligo.

Methods: The study was carried out on 300 patients with psoriasis, acne, alopecia and vitiligo who were referred to the dermatology clinic of Ghaem Hospital in Mashad. Beck depression questionnaire was used to collect the data which was then statistically analyzed with ANOVA and T-test, using SPSS software.

Results: In this study, 35.7% (107) of the subjects were female and

Table 2. Prevalence of suicidal ideation according to the type of skin disease

Kind of Skin disease	Lack of suicidal ideation		Existence of suicidal ideation	
	Frequency	Percentage	Frequency	Percentage
Acnes	76	97.4	2	2.6
Psoriasis	60	96.8	2	3.2
Vitiligo	71	81.6	16	18.4
Alopecia areata				
Diffuse	9	75	3	25
Universalis	2	40	3	60
Ophiasis	8	100	0	0
Localized	39	81.3	9	18

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Psychology of Hair Loss Patients and Importance of Counseling

Lakshyajit Dhami

Additional article information

Abstract

Androgenetic alopecia (AGA) is highly prevalent in society, affecting both men and women. More than the sociological meaning of hair loss, it has become a very important part of self-identity or "body image." A psychological concept of body image refers to one's thoughts, feelings, perceptions, and behavioral changes related to one's physical looks. In spite of alopecia's common occurrence, it often leads to psychological disturbance and distress. Hair thinning and perceived hair loss also has a very important negative impact on the psyche of the individual. The common emotional aspects associated are self-consciousness, embarrassment, frustration, and jealousy.

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Research Article

Prevalence of Psychological Disorders in Patients with Alopecia Areata in Comparison with Normal Subjects

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Alopecia areata is a chronic disease with a great impact on the patient's quality of life. In this study we reviewed the frequency of psychological disorders in patients with alopecia areata in comparison to a control group. We enrolled 40 patients with alopecia areata and a 40-volunteer random age-sex matched control group. The study is based on anxiety and Beck Depression Inventory (BDI) and the Eysenck Personality Questionnaire (EPQ). Analytical evaluation was done by Mann-Whitney, Kruskal Wallis, and t-tests. There was a significant difference between the case and control group regarding the prevalence of depression (P value = 0.008), anxiety (P value = 0.003), and neuroticism (P value = 0.05). There was no significant differences regarding extraversion (P value = 0.249), psychosis (P value = 0.147), and lying (P value = 0.899) between the two groups. In alopecia areata involving the head, there was a significant relation only between neuroticism (P value = 0.045) and lying (P value = 0.005). The facial involvement had a significant relation with depression (P value = 0.020), anxiety (P value = 0.039), and neuroticism (P value = 0.029). The frequency of psychological disorders in the case group is significantly greater than the control group.

1. Introduction

Psychosomatic (psychophysiological) medicine has been considered as a particular field of psychology and psychiatry for over 50 years. The history of this branch of medicine is very closely related with the theory of unity of body and mind. Disorders of mind and body and how these two parts of human beings function together is reflected in "The Diagnostic and Statistical Manual of Mental Disorders (DSM)," a criterion for classification of mental disorders [1].

Skin-related mental disorders include a wide range of dermal pathologies which present with psychological signs or stresses. In spite of the evidence on the interactions between nervous, immune, and endocrine systems, which have made the understanding of psychocutaneous diseases easier, further investigations are still required [2]. Skin, as a tangible and visible part of the body, can have a magnificent effect on psychological status which is continuously involved in socialization processes from childhood to adulthood [3, 4].

Alopecia areata is a common chronic disease of skin with sudden onset loss of hair in a clear circular area [5]. The role of psychological factors in extension of alopecia areata has also been discussed. Social and familial problems and uncontrollable events have more influences on these patients than on normal society [6] and most of them experience psychological problems in long-term such as depression, anxiety, and paranoid disorders [6–10]. Also, studies have shown that the low quality of life in these patients has significant relation with depression [11]. It seems that the patients with alopecia areata are mainly depressed, worried, and hysteric, present with higher rates of hypochondriasis tendency, and experience frequent conflicts in daily interactions with other people [12]. Tendency to suicide is high in these patients [13]. Studies have shown that there is a significant relation between loss of hair and stress, stress intensity, and stressful events [14]. There is evidence that besides the medical therapies, hypnotherapy is also effective in treatment of alopecia areata [15, 16].

Original Contribution

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Protein loss in human hair from combination straightening and coloring treatments

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Summary

Background Hair chemical treatments, such as dyeing and straightening products, are known to cause damage that can be assessed by protein loss.
Objectives The aim of this study was to evaluate the hair protein loss caused by combined chemical treatments (dye and relaxer) using the validated bicinchoninic acid (BCA) method. Three kinds of straighteners, based on ammonium thioglycolate, guanidine hydroxide and sodium hydroxide, were evaluated and the least harmful combination indicated.
Methods Caucasian virgin dark brown hair tresses were treated with developed natural brown color oxidative hair dyeing and/or straightening commercial products based on ammonium thioglycolate, sodium hydroxide, or guanidine hydroxide. Protein loss quantification was assessed by the validated BCA method which has several advantages for quantifying protein loss in chemically treated hair.
Results When both treatments (straightening and dyeing) were combined, a higher negative effect was observed, particularly for dyed hair treated with sodium hydroxide. In this case, a 156% increase in protein loss relative to virgin hair was observed and 208% in relation to only dyed hair. The combination of dying and relaxers based on ammonium thioglycolate or guanidine hydroxide caused a small increase in protein loss, suggesting that these straightening products could be the best alternatives for individuals wishing to combine both treatments.
Conclusions These results indicated that when application of both types of products is desired, ammonium thioglycolate or guanidine hydroxide should be chosen for the straightening process.

Keywords: bicinchoninic acid, hair, protein loss, straightening, dyeing

Introduction

The reasons for women seeking hair chemical treatments, such as dyes and relaxers, include beauty, social acceptability, convenience, and ease of management of the relaxed hair.[1] Hair coloring systems are divided into three categories according to the color durability time and coverage power after application onto hair strands: *temporary, semi-permanent, and permanent*.[2,3]

Temporary dyes consist of acid water-soluble molecules of high molecular weight which do not penetrate the cuticle and are deposited onto the surface layers. These dyes remain on the hair for up to 1 week depend-

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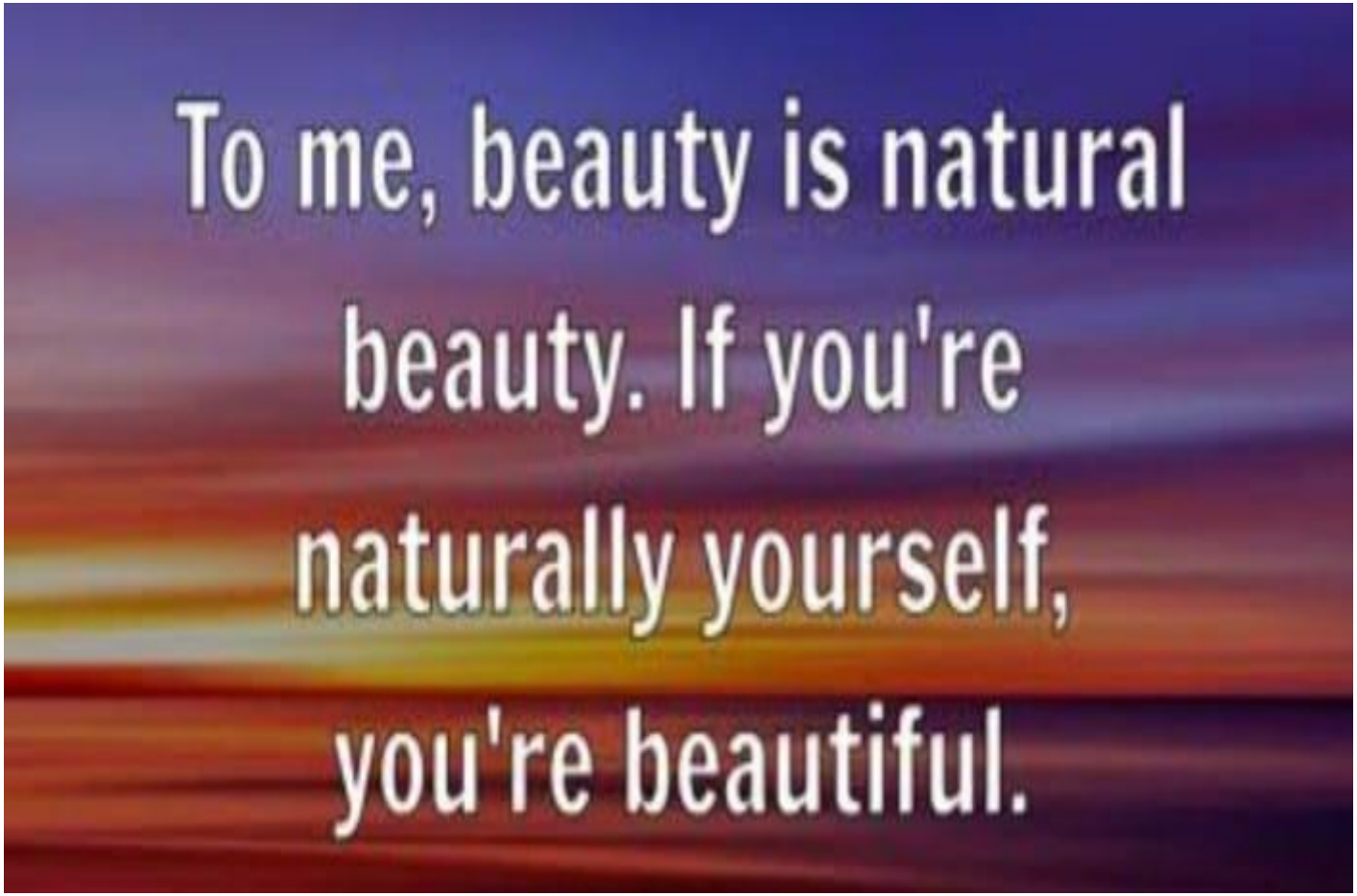
- This year we have received 125 patients till now with different types of hair disease.

- Every year first Saturday of August is celebrated as ‘Alopecia Awareness Day’.

TAKE HOME MESSAGE:

- Scarring alopecia is treatment resistant because there is permanent hair follicle destruction occur.
- Hair loss may occur as a part of an underlying disease, so it is important to find out the cause.so that it can be treated
- Some medications can cause hair loss eg: anticoagulant, chemotherapeutic drug.
- PRP therapy is an effective treatment in early stage
- Treatment is very lengthy.
- Shaving of hair will not increase the amount of healthy hair on scalp.
- Use of hair dye, hair color, straitening decrease the longevity of hair and initiate early graying of hair.

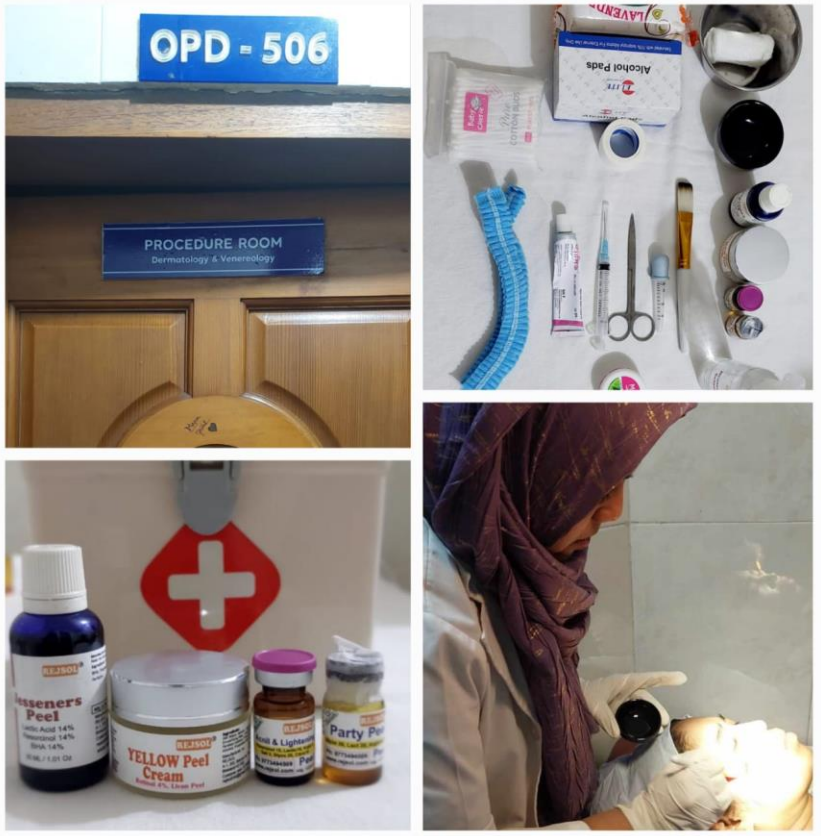

DON'T
Treat your hair
like a science lab
EXPERIMENT


To me, beauty is natural
beauty. If you're
naturally yourself,
you're beautiful.

CHEMICAL PEELING

Indication :

- Post acne pigmentation
- Acne scar
- Melasma
- Fine wrinkles
- Uneven skin tone
- Photoaging




THANK
YOU