Lifelong Learning

Keep Your Hair On – Hair Loss in Women

Hair is a skin appendage that covers most of the external surface of our body. Our clothes offer us protection, thus the need for body hairs has decreased over the years. However, hair on the scalp is commonly used to enhance beauty and to make fashion statements and any disorder can lead to severe distress.

Hair types

Basically, there are three types of hair:

- **Lanugo hair** is present in utero and shed during the eighth month and is only visible in premature babies.
- **Vellous hair** is a fine, downy hair that covers the skin other than the palms, soles and parts of the genitalia. It may be transformed into terminal hair by androgens.
- **Terminal hair** is thicker and more pigmented than vellous hair. It comprises the medullated hair of the scalp, eyebrows and eyelashes and at puberty develops in the axillae and pubic areas of both sexes and in the male, also in the beard area and the body.

Alopecia

The process of balding or hair loss is called alopecia. Conversely, excessive hair growth through the conversion of vellous hair to terminal hair is called hypertricosis. Abnormal excessive hair growth in a female is called hirsutism and can also have other androgenic effects in the female body.

About the author

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Categories of alopecia

Alopecia is divided into two main categories: the Cicatricial alopecias and non-cicatrical alopecias (table 1). Most of the non-cicatricial alopecias can be treated if identified early enough, however, the cicatricial alopecias can only be arrested if identified and the underlying cause treated.

Growth cycles of hair

The hair follicle goes through three main cycles:

- An active growth phase called **anagen**
- **Catagen** when the hair follicle regresses
- **Telogen** when the hair is largely quiescent.

The length of each phase depends on the type of hair follicle involved as well as its location on our body. Around 85% of our hair is in the anagen phase, less than 1% in the catagen phase and around 15% in the telogen phase. An imbalance in this ratio can lead to excessive hair loss. Visible baldness is perceivable when there is more than 20% loss in hair volume. The baldness can become visible due to excessive shedding of hair as well as miniaturisation of the remaining hair follicles.

Non-cicatricial alopecia

Telogen effluvium

Telogen effluvium can lead to diffuse hair loss all over the scalp, without miniaturisation of the follicles. Unlike animals, human hairs grow in an

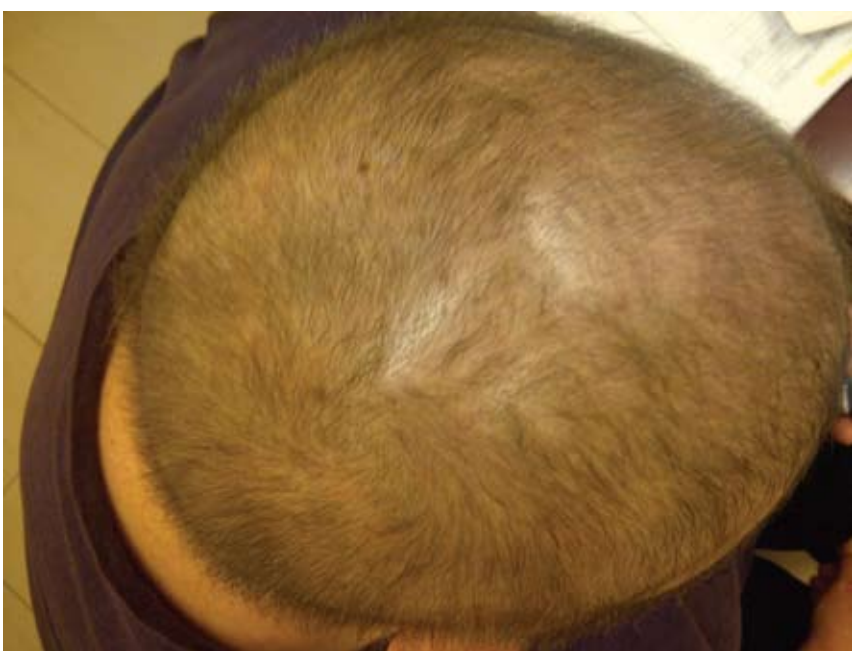

Fig 1: *Hair growth after use of DPCP for alopecia areata totalis (3 months of treatment).*

Fig 2: *Traction alopecia.*

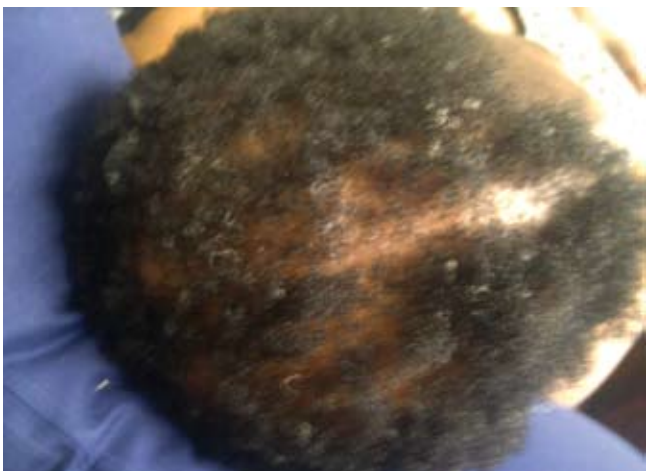

Fig 3: *Early hot comb alopecia.*

asynchronous manner. Anagen is the active longest phase, lasting up to 4 or 5 years. Catagen is the phase where the hair ceases to grow and the hair bulb enters in an involution phase. This can last a few weeks. Following this, the follicle enters the telogen phase where it is shed over a three months period. This hair cycle is tightly regulated with most hairs in the anagen phase, and any disturbance can lead to more hair entering into the falling phase, leading to noticeable hair loss. Telogen effluvium has many causes including high fevers, post-surgery, crash dieting, psychological illness, use of certain medications and post-partum. During pregnancy, hair grows luxuriantly because the hair cycle remains in anagen, however, three months after delivery, the hair that should have gone into catagen during pregnancy, fall out precipitously. This type of hair loss tends to diminishes over time.

Alopecia areata

Alopecia areata is a fairly common type of hair loss with no appreciable abnormality of the underlying skin. It affects both males and females equally and can range from a single localised patch of hair loss to loss of hair involving the whole body surface. In adults who have a mixture of grey and black hairs, the black hairs are preferentially shed and the grey hairs remain, which can account for the term "becoming grey overnight". This disease is caused by an organ-specific T cell-mediated defect, which targets the anagen stage hair follicles, leading to anagen unrest. Rarely, alopecia areata has been associated with other autoimmune diseases like diabetes mellitus, vitiligo and Hashimoto's thyroiditis. There are many prognostic factors for this disease, however early management will lead to the highest success rates. Treatment modalities available to dermatologists include the use of steroids, minoxidil, retinoids, irritants and sensitisers like dithranol and DPCP, UV light, cyclosporine and tacrolimus (figure 1).

TABLE 1

Non-cicatricial alopecia

Telogen effluvium

- Alopecia areata
- Androgenetic alopecia
- Traction alopecia
- Trichotillomania

Cicatricial alopecia

- Discoid lupus
- Lichen planopilaris
- Central centrifugal cicatricial alopecia
- Pseudopelade de Brocq
- Alopecia mucinosa
- Keratosis follicularis spinulosa decalvans
- Dissecting folliculitis
- Acne keloidalis nuchae
- Burns or other trauma to the scalp

Androgenetic alopecia

Androgenetic alopecia occurs as a result of altered hair growth cycling and hair follicle miniaturisation, with transformation of terminal to vellus hair follicles and the production of shorter, finer hair shafts. The anagen phase reduces to a few months and there may be an increase in the telogen phase. This type of hair loss is hereditary and the 5 alpha reductase gene may play a role. Male pattern baldness is very common in men, however, it can be encountered to a lesser extent in females as well. There is a variable degree of hair loss with retention of parietal and occipital hair. This condition is inherited as autosomal dominant. Patients suffering from this type of alopecia benefit from 5 alpha reductase inhibitors.

Traction alopecia

In Africa the prevalence of traction alopecia is increasing. It tends to affect mainly people of African origin, who tend to have hairstyles that put stress on the hair roots (figure 2). Cornrows and plaits can result in the hairline permanently receding. This type of alopecia is far more common in women and very difficult to treat. In most cases patients have to resort to wearing wigs to hide the defects.

Trichotillomania

Trichotillomania is not uncommon and occurs mainly in young girls. Usually it is not associated with any deep emotional trauma, but is a temporary habitual tic. It results from the person fiddling,

twisting and pulling at the hair, causing it to break off or fall out. The side of the scalp affected usually corresponds to the dominant hand of the patient and trauma to the hair roots can easily be identified through histology. Treatment of this condition may need the involvement of a psychiatrist.

Cicatricial alopecia

There are several causes of cicatricial hair loss in females (table 1). Cicatricial hair loss means that the hair roots are lost due to fibrosis. Though it tends to be permanent, the process can be arrested if the cause is identified and treated. One of the most common types seen in SA woman is central centrifugal cicatricial alopecia or 'hot comb alopecia' (figure 3). This type of hair loss is seen almost exclusively in African women who use various chemicals and processes to straighten their hair. Over years they start losing the hairs in the crown section which slowly progresses to the periphery. It can be very pruritic and a shiny bare scalp is the hallmark.

Treating hair loss

Firstly a good history is very important. It should include the age of onset, duration, whether the hair is being uprooted or is breaking, whether it involves increased shedding or increased thinning. Other questions should include the medications being taken, past health, pregnancy, family history, diet, hair care, occupation and hobbies. Once all these have been answered and a full general medical examination has been concluded, the potential trigger factors for the hair disorders can be attributed to one or more of these categories: inflammation, genetics, environment or hormones.

It is only then that a treatment plan can be put forward. The objectives are to return an individual's hair follicle size, density and growth cycles to within normal parameters. Treatments fall into one of three categories: modifiers of the hair growth cycle (duration of anagen, catagen and telogen), modifiers of hair follicle size (terminal, intermediate and vellus hairs) and normalisation of hair density. Specific treatments are discussed earlier in this article under the relevant headings.

Most patients with non-cicatricial alopecia can be expected to make a full recovery if treated early enough, however some will never regain their hair. In those cases the wearing of a toupee or wig might be a solution, or in selected cases, the use of hair transplants may help.

References available on request.