MEDOVATE
MEDICAL INNOVATION WITH A CONSCIENCE

ALOPECIA

Alopecia is the loss of hair. It comes in a variety of patterns with a variety of causes.

Normal hair cycle

Each follicle produces a number of hairs during a lifetime. There are 3 phases:

Anagen or growth phase on the scalp lasts between 3 and 5 years and the hair grows at approximately 1 cm a month. The duration of the anagen phase varies from person to person and it determines how long hair will grow if not cut. Usually about 85% is in anagen phase.

Catagen phase follows the anagen phase and is an involutional stage that lasts around 2 weeks.

Telogen or dormant phase lasts about 3 months. The hair remains in the follicle but does not grow.

At the end of the telogen phase the follicle starts production of new anagen hair which displaces the old one from the follicle and the old one is shed. In humans this results in around 50-100 hairs shed each day. Sometimes people go through a phase of more predominantly telogen phase and they lose a lot of hair in brushes and combs, causing much anxiety, but baldness does not develop.

Epidemiology

Prevalence varies with cause. Male pattern baldness occurs to some extent in over half of men over the age of 50. It affects women but with a different distribution.

Alopecia areata has a prevalence of about 0.1 to 0.2% with a lifetime risk of 1.7%. There is no racial or sexual difference in incidence.

Some forms of cancer therapy almost invariably cause alopecia but hair regrows after treatment is stopped.

Differential diagnosis

It is essential to determine the type of hair loss as this is fundamental to treatment and prognosis. There are two major broad categories, scarring and non-scarring. Unfortunately, scar tissue doesn't grow hair and we do not have a way to reverse scarring. So with scarring alopecias, we cannot bring back the scarred lost hair, but our goal is to halt the progression as best we can. The non-scarring alopecias have a somewhat better chance of being reversed:

Common non-scarring alopecia diagnosis:

Alopecia areata

This condition is of unknown etiology although there is much support for an autoimmune component. It is more common in thyroid disease, vitiligo, diabetes and collagen diseases. Stress is sometimes given as a factor. There is a tendency to run in families, especially the more severe cases and it is linked to some HLA antigens.

The circular pattern of hair loss is characteristic. There are usually smooth round or oval patches with normal skin devoid of hair. Exclamation mark hairs taper towards the proximal end and are said to be pathognomonic but not invariable. Differential diagnosis is with tinea capitis and trichotillomania. Involvement of nails, usually fingernails, is reported to a variable extent with pitting.

The condition can strike at any age, including in childhood, but the peak incidence is between 15 and 30 years old. Around four patients in five have a single lesion, one in eight has two lesions and the rest have multiple lesions. There is no correlation between number and severity. Alopecia areata can affect any area although the scalp is the commonest. The beard is affected by about a quarter of men and more rarely eyebrows or extremities may be involved. Loss of 40% of the hair or more occurs in only about one in ten. More extensive forms occur in 7%. They are called alopecia totalis if all scalp hair is lost and alopecia universalis of all body hair, including eyebrows, is lost.

Prognosis

Spontaneous recovery can be expected within a few months in minor disease and it is unlikely to be affected by treatment. The prognosis for more extensive lesions affecting at least 50% of the scalp, including alopecia totalis, is less favorable. There is no growth in 22% of children and 34% of adults. The relapse rate over five years is 90%.

Treatment

Traditional wisdom is that no form of treatment is effective and in mild forms, where spontaneous resolution is to be expected, only reassurance should be offered. The overall picture in the literature is of many different types of therapy that have been tried and failed.

Intralesional steroid injection is first line. They generally need to be repeated every 4 to 6 weeks.

Topical steroid creams may work but need to be used for at least 3 months. Skin atrophy and telangiectasia can result and maintenance therapy is required.

Oral steroids, given long-term are not recommended.

Various topical immune sensitizers, phototherapy, cyclosporine and tacrolimus have been tried.

Psoralen and UVA (PUVA) treatment is not generally effective.

Surgical intervention is ineffective but hair pieces may be acceptable.

There are newer studies showing oral (or maybe even topical) janus kinase inhibitors like Xeljanz (used for other autoimmune diseases) are very effective, but they are not FDA-approved for this purpose and are very expensive.

Androgenetic alopecia

Androgenetic alopecia is male pattern baldness. It shows a strong familial trait and tends to affect men from their late teens onwards, becoming progressively more common with advancing age. The two patterns are bitemporal recession and a central recession to produce a characteristic horse-shoe shape of remaining hair.

Women also suffer from it to a less obvious extent. There is a diffuse thinning of hair over the crown in the Ludwig pattern. The thinning of hair in women may become rather more pronounced after menopause when there are fewer estrogens to counteract the androgens. One author gives the incidence of female alopecia as 13% before menopause, rising to 75% after age 65. Numbers depend upon definition. Men tend to have baldness while women have thinning of hair and preservation of the frontal area.

Management

In recent years, two pharmacological agents have become available to treat male pattern baldness. Neither is effective in all cases. Both need long-term administration or there will be recurrence. Minoxidil comes in 2% and 5% solution that is applied to the scalp twice daily. It may well be months before any improvement is seen and it should be discontinued if there is none after a year. Any improvement will wane after stopping. Finasteride 1 mg tablets are for men only. The dose is 1 mg daily, compared with 5 mg for benign prostatic hyperplasia but it may be up to 6 months before benefit is seen and it reverts on cessation.

Women may respond to minoxidil, spironolactone or hormone therapy.

Telogen effluvium

This is when a physiological or hormonal stress triggers many hairs to move into telogen phase. When new hairs appear in anagen phase they push out the telogen hairs and this is between one and six months, on average three months, after the initial insult. This can be an acute or chronic condition but the chronic condition may go unnoticed. The acute condition may be precipitated by a variety of factors:

Acute febrile illness, severe infection, major surgery and severe trauma.

Chronic illness such as malignancy, particularly lymphoproliferative malignancy, and any chronic debilitating illness, such as systemic lupus erythematosus, end-stage chronic renal failure or liver failure.

Pregnancy, delivery and stopping hormonal contraceptives.

Crash dieting, anorexia nervosa, low protein intake, and chronic iron deficiency.

Heavy metal poisoning including selenium, arsenic and thallium.

Medications, especially beta-blockers, anticoagulants, retinoids (including excess vitamin A), carbamazepine and immunizations.

Management is the correction of any matters that require attention such as poor diet and reassurance that hair will return in a matter of months.

Anagen effluvium

This is when cancer chemotherapy, immunosuppression or radiotherapy cause rapid hair loss. Doxorubicin and cyclophosphamide are especially notorious but most antimitotics can have this effect. Within a few months of stopping therapy the hair will return.

Trichotillomania

Trichotillomania is a behavioral disorder which can be associated with obsessive-compulsive disorder, but not invariably. In children it is more common in boys, but in adolescence it is more common in girls. Hair loss is asymmetrical and has an unusual shape, with broken hairs across the bald patch which are not easily removed. Single or multiple areas can be affected, including eyebrows and eyelashes. There is minimal or no inflammation.

It may be possible to see that the individual wraps the hair around a finger and pulls on it, perhaps when concentrating on something such as when studying. Management involves behavioral modification.

This is really a form of traction alopecia. Traction alopecia can also occur with hair styles that pull tightly on the hair, usually in girls, and it may lead to frontal recession.

Other problems

There are a number of other conditions that can lead to loss of hair. Is the bald skin normal? Is there scarring?

Seborrheic dermatitis produces large amounts of dandruff and is often associated with thinning of hair.

Lichen planus and discoid lupus erythematosus can cause patches of hair loss.

Tinea capitis, especially animal ringworm, can cause local hair loss, as can impetigo.

Secondary syphilis causes a typical pattern of hair loss called glades in the wood.

Check thyroid function as over-or under-activity can affect hair. Check iron status too.