Male baldness

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Background

Male baldness is very common. Its effect on individuals is extremely variable, and in some people it will have a significant adverse effect on their quality of life.

Objectives

The objectives of this article are to help general practitioners (GPs) be aware of potential health problems related to male baldness, to have an approach to assessing hair loss and to be aware of treatment options.

Discussion

Male baldness is, most often, a normal occurrence, but it may have significant effects on a man's health. It may also be a pointer to other potential health issues. The GP is in the ideal position to conduct an initial evaluation, consider other health issues and advise on treatment options.

Male pattern baldness (androgenic alopecia) is the most common form of hair loss. A large proportion of men will develop significant hair loss.[1] Androgenic alopecia, or androgenetic alopecia (AGA), is an androgen-induced pattern of hair loss. The pattern of hair loss in AGA is genetically determined. Although AGA is not a disease, the psychosocial impact of hair loss may affect a person's quality of life.

Dihydrotestosterone is the main androgen causing AGA. 5-alpha reductase (5AR) converts testosterone to dihydrotestosterone; inhibition of 5AR improves hair growth and slows hair loss.[2,3] 5AR exists as three isoenzymes: types 1, 2 and 3. Type 1 is mainly located in the skin, including hair follicles and sebaceous glands. Type 2 is present in the inner root sheath of hair follicles and male genitalia, including the prostate. Finasteride, a type-2 5AR inhibitor (5ARI), significantly improves hair growth and slows hair loss, compared with placebo.[4] It is the most commonly used treatment for AGA. Dutasteride inhibits types 1 and 2 isoenymes of 5AR and has been shown to be more effective than finasteride in treating AGA.[3]

The main side effects of 5ARIs are effects on sexual function, breast enlargement and a possible increase in the risk of prostate cancer.[4,5] Some published data indicate that 5ARIs may cause an increased incidence of prostate cancers with Gleason scores 8–10.[5] Prostate cancer is given a grade to indicate how fast the cancer may grow; the Gleason score is used for grading the tissue taken during a biopsy:[6]

- low score (6) indicates a slow-growing, less aggressive cancer
- intermediate score (7) indicates a faster growing and moderately aggressive cancer
- higher score (8–10) indicates a fast-growing, aggressive cancer.

Recent meta-analyses of phase III benign prostatic hyperplasia studies of dutasteride alone or in combination with tamsulosin found no increase in the risk of Gleason scores 7–10 and 8–10 cancer in patients at increased risk of the disease.[7] Overall, it appears that there is no significant increase or decrease in the risk of prostate cancer with the use of 5ARIs.

AGA and general health

There are some important associations between AGA and general health. Early-onset AGA is a strong predictor of the

early onset of severe coronary heart disease[8] and metabolic syndrome.[9] A higher body mass index (BMI) is associated with more severe AGA.[10] Assessment of hair loss may be a useful opportunity to discuss cardiovascular risk factors. A long-term consequence of hair loss is increased exposure of the scalp to sun damage and, thus, adequate sun protection measures should be discussed.

Approach to evaluating hair loss

Hair loss is a common problem and may be a significant source of distress for patients. Interestingly, hair thinning usually only becomes noticeable after losing 50% or more of scalp hair.[11] Although AGA is the most common cause of hair loss, there are a number of other conditions that can cause scarring and non-scarring alopecia. A good history and examination will provide the diagnosis in most cases.

The typical history for a man with AGA is gradual onset of thinning after puberty. There is a gradual thinning of hair on the crown and vertex of the scalp (Figure 1), and frontal recession. In contrast to telogen effluvium and alopecia areata, hair shedding is usually not noticed. Examination shows hair thinning on the top of the scalp with miniaturised hairs in the affected areas (Figure 2). If there is any scaling, inflammation or scarring, then diagnoses such as psoriasis, folliculitis or cicatricial alopecia are likely.[11] If there is generalised thinning, the cause may be telogen effluvium, drug-induced alopecia, nutritional deficiency, low iron, metabolic disease such as thyroid dysfunction, or infection such as syphilis.

In the majority of men with AGA, there will be a typical history and classic appearance to the hair thinning. A careful inspection of the scalp, which takes very little time, will confirm the diagnosis and rule out other diagnoses. Any irregularities in the history and examination may be followed up with dermatoscopy, biopsy or referral. Familiarity with dermatoscopic features of alopecia areata and cicatricial alopecia can be a very useful guide to diagnosis.[12]

Treatment options for male pattern hair loss (AGA)

When discussing treatment options for hair loss, it is important to emphasise that:

- no treatment will completely reverse the process
- the response to treatment is quite variable
- some people will not respond to particular treatments.

Expectations need to be realistic. It is important to note that finasteride and dutasteride will lower the prostate-specific antigen (PSA) level.[13] If PSA is being used as part of the monitoring for prostate cancer, the new lower level will be the new baseline.

If there is active treatment of the hair loss, photography is a useful and simple way of monitoring progress. Ideally, photographs are taken at the same distance with the same lighting and same styling of hair. An initial assessment at three months, followed by assessment every six months, would be appropriate.

Management options include:

- no treatment
- use of a hair piece (eg wig or hair extensions)
- treating with:
  - topical minoxidil 2–5%
  - oral finasteride 1 mg daily
  - oral dutasteride 0.5 mg daily (note that this is not approved by the Therapeutic Goods Administration [TGA] for hair loss treatment, but is approved for the treatment of benign prostatic hypertrophy)
- surgery.

The safest option is a hair piece, and this will be suitable and acceptable for some patients. The next safest option is topical treatment but, overall, this is less effective than oral medication. Topical and oral treatments need to be continued for at least three months to determine their effectiveness. Surgery is an option for some, but is reliant on a skilled surgeon and is likely to be expensive. Local knowledge of surgeons will be important.

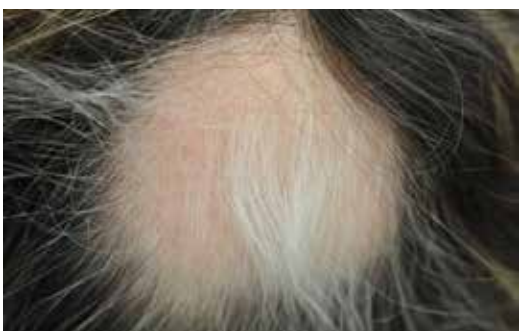

Figure 1. Partially resolved alopecia areata showing regrowth with pale, thinner hair

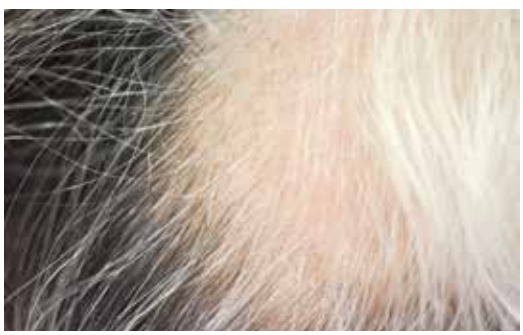

Figure 2. Close-up of alopecia areata with some active areas of loss and some areas of regrowth

The Better Health Channel website (see 'Resources for patients') is a good reference. Surgery may cost from $5000 to $40,000.

When discussing treatment options, one important aspect is the protection of patients from unproven treatments that can also be very expensive. For many years there have been, and the author suspects always will be, advertisements for wonderful, bogus treatments that guarantee results. Patients need to be protected from unsubstantiated and costly treatments.

Key points

- History and examination will provide a clear diagnosis in most cases of hair loss.
- Dermatoscopy is a useful aid to diagnosis.
- Discuss treatment options and potential side-effects.
- No treatment is an option.
- The diagnosis of AGA can be an important pointer to other potential health problems such as metabolic syndrome, coronary artery disease and sun damage.

Resources for patients

- www.andrologyaustralia.org/male-pattern-hair-loss
- www.dermnetnz.org/hair-nails-sweat/pattern-balding.html
- www.betterhealth.vic.gov.au/health/conditionsandtreatments/hair-transplant-surgery

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