HAIR LOSS MANAGEMENT IN WOMEN

Managing hair loss can be challenging. Patients need focused attention from their physician and must understand that treatment options are available.

BY NICOLE E. ROGERS, MD

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The treatment of hair loss in women can be both frustrating and rewarding. Many variables can underlie hair shedding, and it is difficult to investigate all of these within the time constraints of a busy practice. Hair loss is often the last thing on the patient’s list but can require an entire dedicated visit. In most cases, patients are happy to reschedule knowing you will have the time to focus solely on their hair concerns.

HISTORY

First, ask whether patients are thinning or shedding, and for how long. Patients who complain of shedding for less than six months may have either telogen effluvium (Table 1) or early FPHL. Likewise, patients may not realize they are shedding due to breakage because of over-grooming techniques, such as relaxers or flat irons. Patients who are shedding for more than six months may have either chronic telogen effluvium or FPHL. Patients who complain of noticeable thinning over their scalp or a decrease in the size of their ponytail for more than a year usually have FPHL.

Next, ask about family history of hair loss. Many patients will only tell you about their relatives of the same gender, but you must find out about the opposite gender as well. For instance, if you see a young woman who is thinning in her teens, it is essential to know that her father had gone bald in his 20s. Likewise, if a peri-menopausal woman with a complicated history tells you her twin sister wears a wig, this too would help you diagnose her and save time during the interview.

PHYSICAL EXAMINATION

Female pattern hair thinning appears as a localized thinning in the frontal one-third to two-thirds of the scalp. It can appear at any age and is polygenic, meaning from an assortment of ancestors. The frontal hairline remains intact, but the issue for most women is the loss of density and the resultant ‘see through’ effect. Clinically this thinning has been described as either a round or oval-shaped thinning (Ludwig I-III) or a Christmas-tree distribution with frontal accentuation. Other women can have diffuse thinning all over the scalp and a minority may have the temporal recession typical for male pattern thinning. If there is evidence of perifollicular erythema or shiny, irregular patches of alopecia, a cicatricial alopecia may be present and would require biopsy (beyond the scope of this discussion).

TABLE 1: MAJOR CAUSES OF TEOGEN EFFLUVIMUM

- Childbirth
- Medications
  - Isotretinoin, high-dose Vitamin A, Warfarin, Beta-blockers
- Crash dieting/Caloric deprivation
- General anesthesia/General surgery
- High fever/prolonged illness
- Starting or stopping birth control
- Major physiologically stressful events:
  - Death, divorce, abuse

TAKE AWAYS

1. Dedicate a single, separate visit just for hair loss.
2. Ask patients to bring any recent lab tests or biopsies with them.
3. Early in the interview, ask about family history of hair loss/thinning.
4. Use dermoscopy to look for evidence of miniaturization on scalp exam.
5. Use photography to document their progress.
In FPHL, the use of dermoscopy can demonstrate the presence of miniaturized follicles. Women with normal hair will have the appearance of Figure 1. However, in women with FPHL, there can be a wide variation in the caliber of the hairs as seen in Figure 2. Thick, terminal hairs are replaced with finer, thinner versions of themselves. Women with early thinning may have only a few miniaturized hairs, but women with advanced thinning may have a majority of miniaturized hairs or even empty follicles on dermoscopy. Physicians who are new to dermoscopy may perform a 4mm punch biopsy to support their findings.

**LAB VALUES**

Most patients with female pattern hair thinning have normal hormone levels. However, if the hair loss has been ongoing for less than six months, or if a biopsy shows telogen effluvium, you may want to check iron stores, TSH, ANA, Vitamin D and/or Zinc. If found to be abnormal, it can be worth treating first. The problem is that these conditions are all too common in women, and the connection between

**BOTTOM LINE**

Hair loss can be distressing for women. The most common cause of hair loss in women is FPHL, but it can be unmasked by a telogen effluvium process. Dermatologists should focus on family history and use scalp dermoscopy or scalp biopsy to identify the presence of miniaturized hairs. A number of effective medical therapies exist. Camouflages and hair thickening products can also provide much-needed, instant relief for patients who really suffer with thin hair.
hair loss is still quite controversial. Thus, one may spend three to six months correcting these lab values only to have the shedding continue.

COUNSELING

The author uses the Canfield Dermscope® with the iPhone 4 or iPhone 4S (Apple, Inc.) to take microscopic images of the scalp during the examination. These can be easily shown to patients for education and counseling. The author explains that FPHL is a “dirty trick on God’s part” because patients are getting less and less ‘bang for their buck,’ as the growth cycle of each hair is becoming shorter and shorter. This process can be quite distressing to most patients. Much like a plane in a nosedive, these patients feel panicked and feel certain it is only a short time before they will go bald. This doomsday scenario is reinforced by doctors who tell them they have male pattern baldness. These patients must be reassured that they are not men, and that they will not go bald.

TREATMENT OPTIONS (SEE TABLE 2)

First, it is imperative to explain that topical minoxidil is the only FDA approved medical therapy for women with hair thinning. It is available over the counter. Its use in treating hair loss was discovered serendipitously after patients treated for recalcitrant hypertension grew new hair. For women, it has only been available as a 2% solution for twice daily use, but a 5% foam was recently FDA approved for once daily use. Patients are instructed to use this directly on the scalp, not the hair, for at least six months before expecting noticeable results. For some patients, there is obvious regrowth (Figure 3) but for others there may only be a stabilization of the thinning process.

Side effects of minoxidil may include headache or a worsening of migraines due to the vasodilatory effect. Women who have unwanted facial hair should be warned that they may see a thickening or darkening of this hair, especially if they use the higher (5%) strength more than once daily. For many women, it is of no consequence. They may already have used laser hair removal, tweezing, shaving, or topical depilatories. They may also use topical efomithine hydrochloride (Vaniqa®) cream to gradually shrink and soften these hairs.

Women with severe unwanted facial or body hair may ben-

TABLE 2: MEDICAL THERAPY FOR FEMALE PATTERN HAIR LOSS

<table>
<thead>
<tr>
<th>Drug/Device</th>
<th>Indicated Age Range</th>
<th>Dosing</th>
<th>Lab Monitoring</th>
<th>Side effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topical Minoxidil</td>
<td>All ages</td>
<td>2% twice daily or 5% once daily</td>
<td>None</td>
<td>Headache, unwanted facial or body hair</td>
</tr>
<tr>
<td>Oral Spironolactone</td>
<td>Pre- or Postmenopausal</td>
<td>Early: 50 - 100mg/day</td>
<td>Potassium, Sodium</td>
<td>Breast tenderness, Menstrual irregularities</td>
</tr>
<tr>
<td>Oral Finasteride</td>
<td>Post-menopausal</td>
<td>Late: 150 - 200mg/day</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Low-level Light Therapy (hoods, hats, helmets, &amp; brushes)</td>
<td>All ages</td>
<td>Usually 3-5x/week for 15 - 20 minutes per session</td>
<td>None</td>
<td>Headache (helmets or hats)</td>
</tr>
</tbody>
</table>

FIGURE 3: A 27 year-old female with hair thinning, before and six months after treatment with topical minoxidil.
efit from spironolactone, which is a diuretic with anti-androgen effects at the level of the hair follicle. Most women with FPHL have normal circulating levels of estrogens and androgens, but their hair follicles are genetically more susceptible to even normal levels of circulating androgens. Spironolactone can help block the androgen receptors on the hair follicles. It can help regrow thinning hair on the top of the head (Figure 4) as well as to help prevent unwanted facial or body hair. This is an especially good choice for women with polycystic ovary syndrome or congenital adrenal hyperplasia.

Spironolactone is off-label for hair loss, but has already been used off-label in dermatology for decades to treat acne and hirsutism. It is inexpensive and usually covered by insurance. It can be used in conjunction with topical minoxidil because the two drugs have different mechanisms of action. The author generally uses doses of 50-100mg daily in women with early thinning, and doses of 150-200mg daily in women with advanced thinning. The drug is pregnancy category D, so patients should be very careful not to get pregnant while taking the drug and discontinue it immediately if they do.

Side effects of spironolactone can include breast tenderness, mid-cycle spotting, a disappearance of the periods altogether, or lightheadedness (due to the diuretic effect). Blood monitoring should include potassium (which can increase) and sodium (which can decrease) in patients on higher doses of 150-200mg daily. There are reports of SIADH in patients taking SSRI’s in conjunction with spironolactone. Rare allergic reactions have also been reported, presenting with drug rash or urticaria. Patients concerned about weight gain should be reassured that they may actually lose weight due to the diuretic effect. Spironolactone should not be used in men due to the anti-androgen effects.

Finasteride (Propecia*) is FDA approved for hair loss in men, but not in women. It works by blocking the conversion of testosterone to dihydrotestosterone (DHT) via the type II 5-alpha reductase enzyme. It remains off-label in women due to the risk of birth defects, and because the original clinical trials with women failed to prove efficacy. This may have been related to use of the wrong patient population (senescent alopecia, rather than FPHL) or too low a dose (1mg daily). Subsequent studies performed by other dermatologists at higher doses of 2.5 and 5mg daily demonstrated good results. In patients with known FPHL who are not going to get pregnant, the author has used finasteride 5mg daily with efficacy (Figure 5).

Finasteride is very well tolerated. So long as patients have normal, healthy liver function, no lab monitoring is required. Despite reports of decreased libido affecting ~2 percent of males in the clinical trials, the author has had no such reports from female patients. Initial concerns about a link with breast cancer have been disproven, at least in men. It can be difficult to get insurance to cover this drug, because it is contraindicated in women and being used for hair loss.
which many consider cosmetic). However it is featured on the $9 list at Walmart, and can be purchased there without insurance.

Dutasteride (Avodart®) is also off-label for women but may have some role in treating hair loss. It also works by blocking the conversion of testosterone to DHT but is theoretically more effective because it blocks both the type I and type II 5-alpha reductase enzymes. Fewer studies are available using this drug in FPHL, and concerns over teratogenicity, its longer half-life, and higher cost (no generic yet) keep it from becoming a mainstream treatment.

Low-level light therapy has emerged as an interesting and safe treatment option for hair loss. It is based on the rare, paradoxical observation of hair growth in patients treated for laser hair removal. A number of mechanisms have been proposed: 1.) activation of mitochondrial signaling to increase the amount of ATP available for hair growth, 2.) photo-activated vasodilation of the hair follicles, and 3.) production of insulin-like growth factors, vascular endothelial growth factors, and basic fibroblast growth factor. Recent data from a large multi-center, sham-controlled clinical trial using the Hairmax Lasercomb demonstrated a statistically significant increase of about 20 hairs per square centimeter over the placebo group. The device has been cleared by the FDA for use in men (as of 2007) and women (as of 2011).

Supplements. There is evidence that plant-based 5-alpha reductase inhibitors such as saw palmetto and pumpkin seed oil may provide a boost to hair growth. Patients who are low in iron stores or vitamin D may also benefit from supplementing these respective elements, but the data supporting their role for FPHL is still controversial. The widely-held belief that biotin improves hair loss is based on the observation of alopecia in infants with biotinidase deficiency. It has not yet been substantiated with controlled clinical trials. Other supplements proposed to grow hair are procyandins, found in apples, grapeseed, and barley.

Hair Care Products. Patients should understand the difference between hair GROWTH products and hair THICKENING products. Many patients will have already bought expensive shampoos or supplements from their hair stylists claiming to thicken hair. These products can help to instantly add body to the hair but will not address the thinning/shedding process. One very helpful product recently introduced to the hair thinning market provides both topical minoxidil as well as a shampoo/conditioner/leave-in product containing the proprietary molecule Filloxane that provides instant thickening.

Hair Camouflage. A number of very helpful products exist to help reduce the contrast between scalp color and hair color. The author recommends them while patients are waiting for medications to take effect or to camouflage redness from hair transplant surgery. Perhaps the most widely used is Toppik,

**BEST INTENTIONS**

Some products are intended to grow hair; others to thicken it. Patients must understand the difference and need guidance from their doctors.
with its colored synthetic keratin fibers that shake into the scalp. Joan Rivers’ Great Hair Day is also popular, with a compact-case and brush to apply color to the scalp. Bumble and Bumble offers a nice hair spray that adds color to the scalp as well.

**Hair Transplant Surgery.** Modern hair transplant surgery can be a permanent and dramatic solution for women with thinning hair (Figure 6A, 6B). It involves harvesting hairs as a single donor ellipse (strip) or as individual follicular units from the back of the head and moving them to areas of thinning. Once relocated, the body’s natural clotting factors act as a glue to hold the grafts in place. The hairs then enter a resting phase lasting two to four months and start to grow in between six and eight months after surgery. Most patients can expect their full results by 12-18 months after surgery.

**CONCLUSION**

Hair loss can be as distressing for women as it is for men, if not more so. The most common cause of hair loss in women is FPHL, but it can be unmasked by a telogen effluvium process. Dermatologists should focus on family history and use scalp dermoscopy or scalp biopsy to identify the presence of miniaturized hairs. A number of effective medical therapies exist, and most women are all too happy to learn they have room for improvement. Camouflages and hair thickening products can also provide much-needed, instant relief for patients who really suffer with thin hair.

6. Online: Drugs@FDA: FDA Approved Drug Products. (NDA) 021812. Approved 2/28/14.