Case Discussions
2001-2002

Alopecia Areata

**Problem:** Recent appearance of 2 bald spots over the scalp in a 49-year-old woman.

**Diagnosis:** Alopecia Areata

The presence of two complete bald spots on the scalp with a normal skin surface and texture - not associated with redness, scaling or scarring, the presence of exclamation mark and dystrophic hairs is compatible with the diagnosis of **alopecia areata**.

**Etiological Factors:**

- 0 Immune dysfunction
- 1 Genetic factors
- 2 Psychologic abnormalities.

**Medical History:**

should include:

- 0 Family history
- 1 Major life changes
- 2 Commonly associated diseases like thyroid disease, asthma, hay fever, and vitiligo.
- 3 Less commonly associated disorders include lupus erythematosus, rheumatoid arthritis, diabetes mellitus, scleroderma, ulcerative colitis, pernicious anemia, lichen planus, myasthenia gravis, thymoma, and hypogamma globulinemia.
- 4 History of burning or itching.

**Physical Examination:**

1. Location and size of lesions (photographs or drawings)
2. Presence or absence of erythema, scale or scarring.
3. Perform light hair pull test on hairs adjacent to the involved areas as well as other scalp sites.
4. Examine other hair bearing areas for signs of hair loss.
5. Examine fingernails and toenails.
6. Signs of other cutaneous or systemic diseases.
**Differential Diagnosis:**

- 0  Lupus Erythematosus
- 1  Traumatic alopecia (ex trichotillomania)
- 2  Syphilis
- 3  Telogen effluvium hair loss
- 4  Fungal infection

**Patient Education:**

- 0  Explain to the patient what occurs in the skin when alopecia areata develops.
  - Start by describing the normal hair cycle then how this cycle is disrupted in alopecia areata due to the inflammation that surrounds the hair follicles, how these hair follicles enter the telogen phase and are shed out and the newly developing hairs become arrested in early anagen.
  - Make sure that the patient understands that therapy is directed at both modifying the perifollicular infiltrate and inducing hair growth
  - That the success of therapy depends on the patient’s age, disease extent and duration, history of atopy
  - Stress on the fact that alopecia areata may recur.

**Prognosis:**

Depends on the results of the light hair pull tests adjacent to the lesions and throughout the scalp.

If the light hair pull test is positive only around the patches, the disease is still active and the extent of involvement may increase
If the light hair pull test is positive over the entire scalp, a significant amount of hair will probably be lost and it will be sometime before normal hair growth is re instituted.
If the light hair pull test is negative around the scalp, the hair loss will stop and the hair disorder will be success fully treated.

**Treatment:**

Depends on the result of the light hair pull test.

- 0  If the light hair pull test is positive only over adjacent areas then the treatment - in order of preference includes: topical steroids, topical retinoids, intralesional steroids, anthralin, topical minoxidil, psoralens and UVA light (PUVA), sensitizing agents like dinitrochlorobenzene or squaric acid dibutylesters, or no treatment at all.

- 0  If the light hair pull test is positive around the lesion as well as over the entire scalp then the treatment may include: oral and topical corticosteroid therapy. Oral
steroids starting from 40-60 mg of prednisone as a single morning dose and taper
dose within 3-4 months.

-0 If the light hair pull test is negative then topical or intralesional steroids, topical
retinoic acid, topical minoxidil, and anthralin are choices of therapy.

Of all therapies, the most commonly used topical treatment is class 2 steroid BID or in
combination with topical retinoic acid locally to the bald area and 2-3 inches beyond
the bald spots. Intralesional steroids are also widely used.
In 4-6 weeks fine white or slightly pigmented 1-2 mm vellus or indeterminate hairs
develop. These will eventually develop into terminal hairs.
Therapy can be stopped when terminal hairs are at least 1 inch long. Treatment can
be resumed if new lesions develop or if any burning or itching sensation prior to the
development of new patches of alopecia ensues.

After the medical history is obtained and the pathophysiology and treatment of
alopecia areata are disclosed, the patient may be sent to the laboratory to undergo
screening for associated diseases if indicated.
ACNE VULGARIS

A 20-year-old girl is presenting with progressive worsening of acne over face and shoulders. She is not responding to the use of medicated acne soap and 5% benzoyl peroxide gel.

What do we do with the patient?

I. We take a good history and in particular the use of oily cosmetics that are comedogenic. Also inclusive in the history is the application of some topical medications such as topical steroids that may worsen acne.

Then we examine for hirsutism and check for menstrual irregularities. Like acne, hirsutism is most often familial, however, in some cases, it may be due to hormonal stimulation, usually androgen excess.

We also ask for any drug intake such as corticosteroids, lithium, iodides and bromides may induce or aggravate acne.

History of manipulation is important. This should be suspected if excoriations are present.

A positive family history of severe acne may be of some value in prognostication.

II. We do a physical examination and in particular we look for comedones, papules, pustules, cysts, sinuses, and scars. We also examine her upper trunk and we note the presence of any keloids mainly over anterior chest. Hirsutism of any degree as well as obesity should raise the possibility of polycystic ovary syndrome.

III. We attempt at management.

1. Patient is asked to avoid any of above aggravating or predisposing factors. In the presence of hirsutism and/or menstrual irregularities, levels of free testosterone and dehydroepiandrosterone sulfate have to be determined. Elevated luteinizing hormone (LH) with a reversal of FSH/LH ratio may be suggestive of polycystic ovary disease, and further screened for by ultrasound examination. Food intake is not related to the course of acne. So are sex, marriage and general health problems.

2. Topical therapy: Since acne is an obstructive disease (primarily due to the presence of comedones), keratolytic agents that loosen the comedones are of prime importance. Several agents are available. The commonly used ones are retinoic acid (tretinoin), salicylic acid, and alpha-hydroxy acids. Retinoic acid is the most effective in altering abnormal follicular keratinization, and thus reducing microcomedo formation. However, it has the potential of causing significant skin irritation, manifested by erythema and desquamation. Therefore, it has to be used judiciously. It may also render the skin more susceptible to sunburn particularly if sunblocks are not
used. The patient should, therefore, be cautioned to use a sunscreen when using topical tretinoin in the summer or when exposed to strong sun.

Since *propionibacterium acnes* is implicated in the pathogenesis of acne, antibacterial agents which reduce the follicular population of *P.acnes*, used in conjunction with keratolytic agents, provide the optimal therapeutic regimen for patients with mild to moderate inflammatory acne. The topical antibacterial agents currently available for the treatment of acne include benzoyl peroxide and topical antibiotics. Topical antibiotics are generally less irritating. However, they are bacteriostatic and may produce resistant strains of *P. acnes*. Topical solutions of erythromycin and clindamycin phosphate are the most popular topical antibiotics. A combination of topical antibiotics and benzoyl peroxide may be superior to either ingredient used alone.

3. **Acne surgery:** usually involving comedo extraction and removal of visible lesions is helpful. Injections of steroids such as triamcinolone acetonide into large inflammatory lesions accelerate their resolution.

4. **Oral therapy:** In patients with severe inflammatory acne it is usually necessary to add oral antibiotics to the above topical regimen. Tetracycline remains the drug of choice and is best administered initially in a dose of 1 gm/day. Since tetracycline absorption is markedly reduced by polyvalent cations, the patient should be cautioned to take the drug on an empty stomach, no closer than one hour before or two hours after meals. Although GI upset, photosensitivity, and monilial vaginitis are reported with oral tetracycline, these side effects are surprisingly uncommon and easily managed.

In patients who do not respond well to tetracycline, minocycline or doxycycline may be good alternatives. Minocycline may produce a dose-related vertigo and may occasionally produce a blue pigment in sites of previous inflammation. Erythromycin is also effective.

For patients with severe, nodulocystic acne and other forms of inflammatory acne that has not responded to the above treatment programs, isotretinoin (Roaccutane) is the drug of choice. It is given in a dose of 1 mg/kg/day for 16-20 weeks. The drug appears to affect all the pathogenic factors in acne: sebum production is markedly reduced; *P.acnes* counts are dramatically lowered; and comedones appear to decrease in number. It is the only drug, which produces prolonged remissions after treatment has been completed. Indeed, isotretinoin would be the ideal drug for all acne patients if it were not for its significant toxicity and side effect profile.

The most common side effect of oral isotretinoin is cheilitis, occurring in 90% of patients. Other common side effects include xerosis, epistaxis, desquamation of the palms, and conjunctivitis sicca. Muscle, joint, and bone discomfort are not uncommon, but usually relieved by simple analgesics. Bony exostosis and pseudotumor cerebri have been reported in some patients. Decreased night vision and corneal opacities are uncommonly encountered. Of the laboratory abnormalities reported, the most significant is triglycerides elevation. Exceedingly high levels may cause pancreatitis.
Isotretinoin is teratogenic and must not be administered to pregnant women or to women who might become pregnant during the course of treatment and during the first month after the drug is discontinued.
Ulceration of the Genitalia

A 24-year-old male was referred to the Dermatology Clinic for evaluation of an ulcer on the shaft of his penis

What are the questions that you would like to obtain?

1. Duration of ulcer?
2. Symptomatic ulcer?
3. Constitutional symptoms?
4. First time or recurrent?
5. Any lesions elsewhere?
6. Sexual history: last intercourse? Protected sex? Same partner vs. multiple partners? Heterosexual vs. homosexual?
7. System review for diseases such as Behcet’s disease, Inflammatory bowel disease (IBD), …
8. History of travel into tropical areas?
9. History of drug intake such as antibiotics laxatives…?

What are the features you would look for while examining this patient?

1. Depth, destructiveness, induration, and friability of ulcer
2. Presence of lymphadenopathy
3. Extragential lesions on the rest of the skin and mucosal surfaces

What laboratory tests would you ask for?

1. Dark field microscopy
2. Smears
3. Biopsy
4. Serology
5. Cultures

How would you manage the patient?

1. Therapy
2. Preventive measures
3. Screening partners
4. Screening for other STDs
Urticaria

**Problem:** A 27-year-old nurse in the surgical intensive care unit has a four-month history of urticaria that occurs daily and is occasionally associated with angioedema of her lips and eyelids. She is on no medications, and her disease has not been well controlled with intermittent use of oral antihistamines, which she purchases without a prescription at her local drugstore.

**Introduction:** Urticaria is a very common problem, with approximately 15%-20% of the population experiencing hives at least once in their lifetime. When urticaria persists longer than 6-12 weeks, it is considered chronic. Chronic urticaria is a frustrating problem for both patient and physician because the cause is established in fewer than 20% of cases, and the therapy is often unsatisfactory. The objectives in managing a patient with chronic urticaria are twofold: (1) identification and removal of its cause, and (2) development of a treatment program that provides symptomatic relief.

**Etiology:**

Urticaria may be caused by innumerable factors. The major etiologic categories of urticaria are listed in Table 1.

Ingested and parenteral drugs are a common cause of urticaria, especially acute urticaria. Almost any drug can cause urticaria. The most common types of urticariogenic drugs are antibiotics, sedatives, tranquilizers, analgesics, laxatives and diuretics. Penicillin is by far the most common cause of drug-induced urticaria on an allergic basis. It is important to remember that traces of penicillin are present in various dairy products. Aspirin is another important drug to consider, since it plays a role in both causing and exacerbating urticaria.

The workup of a drug etiology of chronic urticaria centers on a thorough history. The history should cover all possible drugs – prescription, over-the-counter, and illegal drugs.

Foods are a common cause of urticaria, especially acute urticaria. The responsible agents in food-induced urticaria can be either food proteins or substances added to foods for color, preservation, or taste. Common urticariogenic foods are nuts, shellfish, fish, eggs, fresh berries, tomatoes, chocolate, cheese, and milk.

The evaluation for a food etiology of chronic urticaria also centers on a thorough history.

**Table 1:**

**Extrinsic Causes:**
- Drugs
- Foods
-2 Inhalant allergens  
-3 Infections  
-4 Insect and arthropod bites and stings  
-5 Penetrants-contactants

**Intrinsic Causes:**  
-6 Internal diseases  
-7 Complement activation and immune complex processes  
-8 Psychogenic factors  
-9 Genetic abnormalities

**Physical Causes:**  
-10 Physical agents  
-11 Dermographism  
-12 Pressure urticaria  
-13 Cold urticaria  
-14 Heat urticaria  
-15 Cholinergic urticaria  
-16 Solar urticaria

The evaluation of an inhalant allergen etiology includes a careful history and appropriate intracutaneous skin testing. Various infectious agents can produce urticaria. Although commonly mentioned as a cause of urticaria in the older literature, focal infections are probably infrequent causes of acute or chronic urticaria. Examples of focal infections thought to be associated with urticaria include sinus, dental, tonsillar, chest, gallbladder, GI, genitourinary, and skin infections. Urticaria may be associated with systemic viral infections and less commonly, systemic bacterial, fungal, or parasitic infections.

The evaluation for an infectious etiology of urticaria can involve numerous laboratory procedures. The association of urticaria with internal disease is uncommon. Urticaria is sometimes associated with one of the rheumatic or connective tissue-vascular diseases, hyperthyroidism, during pregnancy, and as an actual autoimmunity to progesterone hormones. Patients with various carcinomas, lymphomas, and leukemias infrequently develop urticarial reactions.

Psychogenic factors can definitely exacerbate urticaria. Certain forms of urticaria are clearly precipitated by physical factors. These include dermatographism, and pressure, cold, localized heat, cholinergic, cold-induced cholinergic, solar, and aquagenic urticaria. The physical urticarias probably represent from 5% -20% of all cases of chronic urticaria and, with the exception of pressure urticaria, are distinguished by their short duration (30-60 minutes), their more frequent occurrence in young adults, and the sharp limitation of cutaneous involvement to areas subjected to physical stimulation.

When evaluating the patient with urticaria the simplest, but the most important, initial step is obtaining a thorough and complete history and review of systems, with emphasis on all the recognized etiologies outlined in table (1). A complete physical examination should also be performed. In a few varieties of urticaria the appearance
or location of the skin lesions can be helpful, such as the physical urticarias, urticarial vasculitis, or urticaria pigmentosa. After the history and physical examination, further diagnostic tests are selected on the basis of suspicions elicited by the meticulous history and physical examination.

In many instances of chronic urticaria in which no clues about etiology can be elicited from the history and physical, certain baseline tests are appropriate to provide further assurance about the absence of significant underlying systemic disease. These tests include: CBC with a differential, multiphasic screening panel, urinalysis, ESR, ANA test, total hemolytic complement, and possibly sinus and chest x-rays, stools for ova and parasite.

Beyond the baseline evaluation, the physician faces a dilemma because many additional tests prove helpful in isolated patients, but the cost-effectiveness of these procedures is poor in the overall group of patients with chronic urticaria.

TREATMENT:

Because the etiology of chronic urticaria is not found in 75% -90% of the cases, treatment programs focus on measures that provide symptomatic relief. Traditional antihistamines of the H$_1$ type are the mainstays in the management of urticaria.

Hydroxyzine hydrochloride (Atarax) has been used increasingly as the first-line treatment of urticaria, probably because of its multiple properties as an antihistamine, sedative, and antiserotonin agent. In cold urticaria, cyproheptadine (Periactin) has been reported to be especially effective.

Terfenadine (Seldane) and astemizole are recently developed H$_1$ antagonists that differ from classic H$_1$ antihistamines. The major advantage of terfenadine is the lack of significant sedative and anticholinergic side effects. Doxepin, a tricyclic antidepressant is known to exert potent in vitro H1 antihistaminic effects, and may also exert H2 antihistaminic properties.

Recent investigations showing that human skin blood vessels possess H2 as well as the commonly recognized H1 receptors suggest that combined H1 and H2 antihistamine therapy should be valuable by blocking all the available histamine receptors in the skin. Combination therapy is a worthwhile alternative in refractory chronic urticaria, since one third to one half of patients might respond positively on an individual basis.

Other agents, which have occasionally been shown to be of additive value in treating chronic urticaria, are B-adrenergic agents such as terbutaline and ephedrine, and cromolyn-like drugs such as ketotifen and oxatomide.

Systemic corticosteroids are sometimes indicated in severe acute urticaria, severe serum sickness, and pressure urticaria. They have no place as regular therapy in chronic urticaria, although they may occasionally be used to break temporarily the cycle of a resistant case.