Scalp Biopsy Specimens: Transverse vs Vertical Sections

Evaluation of hair loss continues to be a challenge for dermatologists and pathologists. Current trend favors the examination of both vertical and transverse sections of scalp biopsy specimens, although it is not clear if this is owing to opinion or evidence. Proponents of transverse sections claim that this approach is better because one can (1) examine more follicles at various levels; (2) determine the total number of terminal follicles; and (3) better appreciate infiltrates. In contrast, those who prefer vertical sections indicate that (1) any structure of the follicle examined with transverse sections can be seen with vertical sections; (2) very few follicles are needed to make the correct diagnosis; (3) the total number of terminal follicles is the least important criterion; and (4) infiltrates can be adequately assessed by pattern recognition.

To gather our own experience we performed a prospective study of 276 Mexican patients whose main complaint was hair loss. Institutional review board approval was obtained. There were 107 male and 169 female subjects ranging in age from 10 to 85 years. Each patient had two 4-mm punch biopsy specimens taken: one for vertical and the other for transverse sectioning under hematoxylin-eosin microscopy. The final diagnoses are summarized in the Table. After analysis, our results can be summarized as follows:

1. Both vertical and transverse sections were adequate to assess infiltrates and structure of follicles at various levels and to detect clues for diagnosis;
2. Transverse sections showed more follicles;
3. Vertical sections were adequate for both scarring and nonscarring alopecias; and
4. Both vertical and transverse sections rendered a concordant diagnosis in 100% of cases.

In conclusion, we found both vertical and transverse sections adequate for diagnosis of scarring and nonscarring alopecias. Each technique offered some advantages, but neither was superior to the other. The examination of both transverse and vertical sections is beneficial but not essential, and this minimal benefit must be balanced against added costs and/or inconvenience for patients.

Carlos Garcia, MD
Eduardo Poletti, MD

Correspondence: Dr Garcia, Department of Dermatology, Oklahoma University Health Sciences Center, 619 NE 13th St, Oklahoma City, OK (carlos-garcia@ouhsc.edu).

Financial Disclosure: None reported.

COMMENTS AND OPINIONS

Rebound Vasodilation From Long-term Topical Corticosteroid Use

The Cutting Edge article “Successful Treatment of Severe Atopic Dermatitis in a Child and an Adult With the T-Cell Modulator Efalizumab”1 in the May 2006 issue of the ARCHIVES discusses another medication for this disease with both short- and long-term potential for toxic effects added to the panoply of similar medications, including azathioprine, mycophenolate, cyclosporine, and other immunomodulators. As yet unknown adverse effects of efalizumab might preclude its long-term use. I suggest another approach to the “problem” of atopy before instituting treatments with new medications.

In the case report by Weinberg and Siegfried,1 a diffuse erythema coupled with the typical eczematous patches in the popliteal area is seen in patient 1. I believe that this diffuse erythema represents corticosteroid addiction with rebound vasodilation, not worsening eczema.2,3 Patient 2 demonstrates “spongiosis dermatitis” on the skin biopsy specimen. All of the biopsy specimens from my patients who were addicted to steroids have revealed this same pathologic characteristic. This is not the typical pathologic presentation of atopic dermatitis.

In the past 23 years, I have treated over 1500 patients with these problems (red skin syndrome, red scrotum syndrome, generalized severe atopic, chronic actinic derma-