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Additional Contributions: Josep Malvehy, MD, helped in the data analysis portion of this study; Narin Apisarnthanarak, MD, helped to recruit and obtain informed consent from patients.


Scalp Dermatomyositis Revisited

A novel study by Kasteler and Callen1 published in 1994 defined scalp involvement as a common and symptomatic (ie, pruritic) manifestation of dermatomyositis (DM). They defined this involvement as “diffuse, scaly dermatosis with erythema (Figure), atrophy, and often nonscarring alopecia17(p1046)” present in 82% of their patients with DM. Because therapy to control the often debilitating scalp symptoms of DM is lacking, we conducted a retrospective study to compare the DM cases reported by Kasteler and Callen1 with our own current population to determine similarities and difference and to evaluate whether any of the systemic therapeutic ladders used to treat DM2,3 were optimal for treating symptomatic scalp DM.

Methods. After approval from the institutional review board, we evaluated our patients’ medical charts from 2003 through 2008 that included an International Classification of Diseases, Ninth Revision diagnosis for DM: 24 cases were identified. Diagnosis of DM and scalp DM were based on clinicopathologic correlation by the same observer (J.C.E.). Patient data collected included age, sex, association with alopecia and/or malignant neoplasm, systemic treatment, and clinical outcome. Fifteen patients were noted to have scalp DM, 13 of whom met criteria for treatment analysis (ie, at least 4-month follow-up). We used the Fisher exact test to analyze treatment responsiveness, the clinical endpoints being no relief, partial relief, or complete relief of scalp symptoms from DM.

Results. A comparison of the characteristics of our DM cases with those of the 1994 study1 is listed in Table 1. Fifteen of our 24 DM cases included scalp involvement, with one-third (n=5) exhibiting associated nonscarring hair loss. All 15 of these patients were women (mean age, 55.3 years), and only 1 had a systemic malignant neoplasm, while 5 had associated myopathy (33%). All 13 patients who met the study criteria received high-potency topical steroid treatment, and only 1 had a partial response. In 11 of the remaining cases, treatment was advanced to the oral immunosuppressive agents listed in Table 2. We observed that 4 of the 11 patients undergoing systemic therapy showed improved cutaneous symptoms but without scalp improvement.

Table 1. Characterization of Patients With Dermatomyositis

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Kasteler and Callen,1 1994</th>
<th>Present Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scalp involvement</td>
<td>14/17 (82)</td>
<td>15/24 (63)</td>
</tr>
<tr>
<td>Alopecia</td>
<td>6/14 (43)</td>
<td>5/15 (33)</td>
</tr>
<tr>
<td>Age, mean, y</td>
<td>41.6</td>
<td>55.3</td>
</tr>
<tr>
<td>Associated myopathy</td>
<td>14/14 (93)</td>
<td>15/15 (100)</td>
</tr>
<tr>
<td>Malignant neoplasm (Location)</td>
<td>2/17 (12)</td>
<td>1/15 (7)</td>
</tr>
</tbody>
</table>

a Unless otherwise indicated, data are reported as number (percentage) of patients.

b Scalp involvement not identified.

Table 2. Summary of Therapeutic Attempts and Improvement in Patients With Dermatomyositis

<table>
<thead>
<tr>
<th>Treatment</th>
<th>No Response</th>
<th>Partial Response</th>
<th>Full Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topical steroids alone</td>
<td>13</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Hydroxychloroquine</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Methotrexate</td>
<td>5</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Mycophenolate mofetil</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>IVIg</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Cyclophosphamidea</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Abbreviation: IVIg, intravenous immunoglobulins.
a Used as part of breast cancer protocol.

Figure. Scaling diffuse erythema of the scalp consistent with scalp dermatomyositis.
Additional drugs were added to the regimens in some cases if the first treatment attempts failed to improve symptoms.

Of 10 patients receiving hydroxychloroquine, none had resolution of scalp symptoms. The progression through the therapeutic ladder (compared with hydroxychloroquine) showed a partial response in 2 of 7 patients treated with methotrexate ($P = .15$) and in 1 of 5 patients treated with mycophenolate mofetil ($P = .33$). The only full resolution of scalp symptoms was seen with intravenous immunoglobulins in a patient for whom all other therapy had previously failed (Table 2).

**Comment.** Scalp DM presents as a treatment-resistant disease, predominantly in women. Although symptomatic, only 30% to 40% of patients note clinically significant associated alopecia. Amyopathic and/or hypomyopathic DM was more common in our study (66%; $n = 10$) than in the 1994 study (100% of patients with muscle involvement [$n = 14$]). In addition, scalp DM seems to have a low association with paraneoplastic DM.

Limitations to our study include its retrospective nature, selection bias in drawing patients from a solely academic practice, and an overall small number of patients.

To our knowledge, no standard therapeutic agents have been used successfully to treat DM with scalp involvement. Although we found no significant difference between systemic agents, treating first with methotrexate or mycophenolate mofetil rather than hydroxychloroquine may be an option for DM when the scalp is involved. A conclusion concerning intravenous immunoglobulins cannot be drawn at this time, but further investigation using a more structured study for treatment of scalp DM is warranted.

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**Author Contributions:** Dr English had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. **Study concept and design:** Prevost, Khera, and English. **Analysis and interpretation of data:** Tilstra, Prevost, Khera, and English. **Drafting of the manuscript:** Tilstra, Prevost, Khera, and English. **Critical revision of the manuscript for important intellectual content:** Tilstra, Prevost, Khera, and English. **Statistical analysis:** Tilstra. **Administrative, technical, and material support:** Prevost, Khera, and English. **Study supervision:** Prevost and English. **Financial Disclosure:** None reported.