Dermoscopy in Skin Self-examination

A Useful Tool for Select Patients

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Background: Education for patients on the technique of skin self-examination is important for improving the rate of early detection of melanoma. Strategies to improve skills in skin self-examination include the use of mnemonics to facilitate the recognition of melanoma features and photography to assist in the detection of change.

Observation: We describe 2 patients who used dermoscopy on their own initiative to help identify suspicious pigmented lesions during skin self-examination.

Conclusions: Dermoscopy has not yet been evaluated for patient use. We were intrigued by this concept and suggest that dermoscopy, with appropriate training, may improve the ability for early detection of melanoma in skin self-examination for select patients.

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can be made to enhance the ability to detect new and changing lesions. Change is one of the most sensitive features for melanoma and has been reported as the sole identifying feature in up to 35% of melanomas. Unfortunately, change is not highly specific for melanoma since many benign nevi also appear as new or changing lesions (≤17% of changing lesions will be melanoma). Expertise in dermoscopy involves the recognition of patterns that separate benign from suspicious lesions. Dermoscopy improves diagnostic accuracy by increasing sensitivity and specificity for recognition of melanoma and helps to identify change on sequential follow-up of lesions. The combination of photography to observe relative changes and dermoscopy to identify patterns specific for melanoma has led to earlier detection of melanoma, lower biopsy rates, and reduction in the benign to malignant biopsy ratio.

Photography, although initially used only by physicians, has made its way into the hands of patients to enhance skin examination and surveillance. Photography overcomes a major barrier to an effective SSE because detecting new or changing lesions is limited by a person’s ability to remember the presence or appearance of the original lesions. Patient use of baseline photography has been shown to improve diagnostic accuracy by increasing sensitivity and specificity for the detection of new or changed lesions. Dynamic features, such as change in size or color, have been shown to be useful for patients when discriminating between benign and malignant lesions; 71% to 88% of patients had noted change in their melanoma and sought care, resulting in removal of the lesion. Photography is beneficial in SSE; however, other interventions must be developed and studied as well to further improve self-detection of melanoma. The experience of 2 patients has prompted us to contemplate whether dermoscopy used by motivated patients can assist in SSE.

During the dermoscopic self-examination he noticed 1 pigmented lesion on his right forearm. This lesion appeared to manifest dermoscopic criteria for melanoma based on the lecture he had just heard (Figure 1B). With this newly acquired knowledge, he approached the lecturer, who confirmed the patient’s impression regarding the lesion. The patient was directed to a local dermatologist who excised the lesion; testing confirmed the diagnosis of a microinvasive melanoma. A 50-year-old male truck driver had a history of melanoma and multiple nevi. He was very anxious about the risk of developing an additional melanoma, as well as worried that one of his family members might develop melanoma. He sought information on melanoma detection to enhance their routine skin surveillance. After learning about dermoscopy through the Internet and by reading publications written by the physicians involved in his care, he purchased a dermatoscope and incorporated dermoscopy into SSE of his skin and the skin of his family members. He identified a suspicious lesion on the abdomen of his wife (aged 47 years), based on the lecture he had just heard (Figure 1B). With this newly acquired knowledge, he approached the lecturer, who confirmed the patient’s impression regarding the lesion. The lesion was biopsied, and testing confirmed the diagnosis of a microinvasive melanoma.

A 45-year-old man’s profession requires setting up and coordinating the audiovisual equipment for lectures at different venues. One such venue was hosting a dermatology seminar with a focus on skin cancer and dermoscopy. While listening to the lectures, the man realized that he was at increased risk for developing melanoma. This concerning notion prompted him to examine his nevi. Although he did not see any concerning lesions, he decided to borrow a dermatoscope from one of the vendors to further examine the nevi.

Table. Comparison of Physician and Patient Melanoma Detection Rates and Depths

<table>
<thead>
<tr>
<th>Source</th>
<th>Physician</th>
<th></th>
<th>Patient or Other Layperson</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. (%)</td>
<td>Depth, mm</td>
<td>No. (%)</td>
<td>Depth, mm</td>
</tr>
<tr>
<td>Epstein et al.8 1999</td>
<td>24 (24)</td>
<td>0.23</td>
<td>78 (76)</td>
<td>0.90</td>
</tr>
<tr>
<td>Brady et al.3 2000</td>
<td>74 (16)</td>
<td>60.8% ≤ 0.75 mm</td>
<td>342 (73)</td>
<td>32.5% ≤ 0.75 mm</td>
</tr>
<tr>
<td>Schwartz et al.3 2002</td>
<td>213 (14)</td>
<td>0.40</td>
<td>1037 (64)</td>
<td>1.17</td>
</tr>
<tr>
<td>Carli et al.3 2003</td>
<td>151 (19)</td>
<td>0.68</td>
<td>651 (81)</td>
<td>0.90</td>
</tr>
<tr>
<td>McPherson et al.3 2006</td>
<td>954 (25)</td>
<td>65.4% ≤ 0.75 mm</td>
<td>2817 (75)</td>
<td>50.5% ≤ 0.75 mm</td>
</tr>
<tr>
<td>Unpublished dataa,b</td>
<td>373 (76)</td>
<td>0.30</td>
<td>91 (18)</td>
<td>0.50</td>
</tr>
</tbody>
</table>

a Detection rates for high-risk patients under routine surveillance.
b In a conversation (A. A. M., MD, May 2010).
c Dermatologist-detected only.
d Patient-detected only.

REPORT OF CASES

A 45-year-old man’s profession requires setting up and coordinating the audiovisual equipment for lectures at different venues. One such venue was hosting a dermatology seminar with a focus on skin cancer and dermoscopy. While listening to the lectures, the man realized that he was at increased risk for developing melanoma. This concerning notion prompted him to examine his nevi. Although he did not see any concerning lesions, he decided to borrow a dermatoscope from one of the vendors to further examine the nevi.

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A 50-year-old male truck driver had a history of melanoma and multiple nevi. He was very anxious about the risk of developing an additional melanoma, as well as worried that one of his family members might develop melanoma. He sought information on melanoma detection to enhance their routine skin surveillance. After learning about dermoscopy through the Internet and by reading publications written by the physicians involved in his care, he purchased a dermatoscope and incorporated dermoscopy into SSE of his skin.

COMMENT

Dermoscopy has not yet been explored for patient use; however, it shares features with tools that have been demonstrated to be valuable in SSE. It may improve sensitivity and specificity for detecting melanoma by enhancing the ability of patients to identify changing or suspicious lesions and separate them from benign lesions. Furthermore, tools that increase patients’ sensitivity for detecting new or changing lesions provide a means for active, as opposed to passive, surveillance, which may improve confidence in and adherence to SSE. For example, adherence to SSE improves after patients are educated on how to perform SSE and use photographs as an adjunct, which is mediated in part by improving self-efficacy. Based on the potential benefits of adding dermoscopy to SSE, we propose 2 models for its practical implementation.
One model for incorporating dermoscopy into SSE is to provide patients with baseline dermoscopic images of their lesions so that they feel more confident making a comparison and monitoring individual nevi. Including baseline dermoscopic images could be easily integrated into the currently accepted practice of providing patients with photobooks containing their baseline total-body skin clinical images. Needless to say, significant effort would be required to ensure that patients are educated on the proper technique of using baseline clinical and dermoscopic images. This in turn will enable patients to effectively use photobooks containing dermoscopic and clinical images to enhance SSE. We acknowledge that performing SSE with dermoscopy could be a time-consuming endeavor; however, highly anxious patients might find comfort in the knowledge gained. A second model for including dermoscopy in SSE is to incorporate simple dermoscopic algorithms and criteria into educational materials designed for patients. The 3-point checklist simplifies dermoscopy by focusing on criteria with high sensitivity for melanoma detection: (1) asymmetry of pattern, (2) atypical network, and (3) presence of blue-white structures. It has been shown that the 3-point checklist can improve the ability for nonexperts to correctly identify lesions that should be evaluated by a dermatologist. Patients may also benefit from learning dermoscopic patterns of benign nevi. Detecting benign patterns is facilitated by the fact that the majority of an individual’s nevi will share common dermoscopic patterns. An understanding of the common benign patterns facilitates the recognition of lesions with differing patterns that are suggestive of melanoma.

Before offering dermoscopy to patients, the potential ramifications of such a suggestion must be considered. By empowering patients, dermoscopy may increase adherence to SSE, which has the added benefit of having patients spend more time scrutinizing their skin. Another positive outcome is that patients may improve their ability to recognize new or changing lesions and, as a result, improve their sensitivity for melanoma detection. Educating patients to recognize common dermoscopic patterns of benign nevi and simple dermoscopic criteria for melanoma has the potential to improve specificity as well. In addition to improving performance in SSE, some patients may find relief of their concerns through the use of dermoscopy. One advantage of using dermoscopy is that it can alleviate anxiety for patients with a high level of concern regarding their lesions. Finally, given the advances in telemedicine, specifically teledermoscopy, patients ultimately might be able to use dermoscopy attachments for mobile phone cameras to send images of lesions that concern them to their physicians, thereby allowing for faster and potentially more efficient care.

Figure 1. Patient 1. A, This patient identified a suspicious melanocytic lesion on his arm. B, Dermoscopic results revealed a lesion that did not manifest one of the benign nevus patterns. In addition, it had an irregular (atypical) blotch, which is one of the melanoma-specific structures. C, Findings from the biopsy revealed that the lesion was a microinvasive melanoma (hematoxylin-eosin, original magnification x10).
Negative outcomes of having patients use dermoscopy, ranging from bothersome to grave, must be weighed as well. Some patients may become hypervigilant. The perception of several changing lesions as well as new worrisome dermoscopic features may be overwhelming for patients and paradoxically increase rather than relieve anxiety. Heightened awareness of changing nevi that are benign could translate to a dramatic increase in unnecessary calls and office visits to physicians. Alternatively, inadequate understanding of what constitutes a benign dermoscopic pattern may lead to a false sense of security such that suspicious lesions are erroneously dismissed and not brought to a physician’s attention. This has been demonstrated in untrained dermatologists who had inferior diagnostic accuracy using dermoscopy compared with unaided visual examination.50 Furthermore, the diagnosis of melanoma is complex; pigmented lesions may exhibit subtle features of melanoma and can pose diagnostic conundrums for dermatologists and pathologists, let alone for patients.33 Finally, since the purchase of a dermatoscope is not covered by insurance, the cost may be prohibitive for many patients.

In conclusion, the experiences of 2 patients have prompted us to consider the role for dermoscopy in SSE. If dermoscopy is integrated into SSE, patients should be carefully selected and provided with ample education regarding the instrument and its potential benefits and pitfalls. Future research will need to focus on identifying subsets of patients who would benefit most from this screening method. Furthermore, to avoid the liabilities of overconfidence associated with patient use of dermoscopy, patients who engage in this practice must maintain routine follow-up visits with a dermatologist. Perhaps, in motivated and reliable patients, the provision of a dermatoscope could increase adherence to SSE and result in the detection of thinner melanomas. Regardless of whether patient use of dermoscopy is promoted by dermatologists, patients may do so on their own initiative. Thus, we hope to bring to light the possibility of an emerging role for dermoscopy in the realm of the patient and to advise physicians that some patients may already be pursuing this option.
tin, and Marghoob. Analysis and interpretation of data: Goulart and Marghoob. Drafting of the manuscript: Goulart. Critical revision of the manuscript for important intellectual content: Malvehy, Puig, Martin, and Marghoob. Administrative, technical, or material support: Goulart, Malvehy, Puig, and Marghoob. Study supervision: Martin and Marghoob.

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REFERENCES


Articles of Faith Variant Nomofungusumungus!

This latest addition to my “Articles of Faith” series represents folk and home remedies for fungal infections of the skin. When researching this topic, I was struck by how many recommendations there were for modern materials. Sure, there's still room for organic remedies like the perennial favorite apple cider vinegar, but the number of synthetic products inspired me to create a Godzilla-like, postnuclear mutant (Figure). Behold: Nomofungusumungus! It's somehow comforting to know that those scattered survivors of the rapidly approaching end times will be able to find the necessary cures for their apocalyptic athlete's foot in their devastated convenience stores.

Figure. Cap, yogurt; ears, tea tree oil; head, Listerine; nose, nail polish; eyes and arms, Absorbine Jr; tail, Windex; body, Clorox bleach; and legs: apple cider and white vinegars.

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