Erythema ab igne masking cutaneous metastasis of colorectal adenocarcinoma

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Abstract

Skin metastasis commonly manifests as subcutaneous or intradermal violaceous nodules that coalesce with a firm rubbery appearance. Few cases reported an erythema ab igne-like appearance in the presence of internal malignancy. We report a case of metastatic colorectal adenocarcinoma with erythema ab igne-like presentation. We also review cases of erythema ab igne in association with internal malignancy.

Introduction

Although skin is the largest organ of the human body, cutaneous metastasis is quite uncommon with an incidence of 5.3%.1 It is particularly rare for colorectal adenocarcinoma to metastasize to the skin.2,3 Morphologically, cutaneous metastasis commonly manifest as subcutaneous or intradermal violaceous nodules that coalesce with a firm rubbery appearance.4,6 Other reported manifestations include erythematous plaques, bullous, and ulcerative lesions.4,6 However, to the best of our knowledge, erythema ab igne-like presentation has never been reported as a feature of cutaneous metastasis. We report a case of colorectal adenocarcinoma cutaneous metastasis with erythema ab igne-like morphology.

Case Report

A 60-year-old female known to have sigmoid adenocarcinoma with peritoneal and omental metastasis on chemotherapy presented with a two-month history of a progressive and asymptomatic periumbilical lesion. On examination, there was a solitary, red-brown, reticular, indurated, periumbilical plaque (Figure 1). The morphology of the plaque was vaguely suggestive of erythema ab igne. The patient gave a history of applying heat pad on the abdomen for 3 months to relieve the associated pain. Given the presence of induration and internal metastases, a skin biopsy was performed to rule out cutaneous metastasis. Histopathological examination revealed cutaneous metastatic carcinoma consistent with colonic adenocarcinoma. The neoplastic cells were strongly positive for CK20 and negative for Chromogranin (DAK-A3) (Figure 2). The patient died a month later due to the metastatic adenocarcinoma.

Discussion

Malignancies, especially of colorectal origin, rarely metastasize to the skin. In two large studies, only 3 (0.1%) out of 2538 and 18 (4.4%) out of 413 colorectal cancer patients had cutaneous spread.2,7 It is infrequently reported as the presenting sign of an occult colorectal cancer in only 0.05% of patients. In addition it indicates an advanced stage and dismal prognosis, occurring years after diagnosis.3,10 Recognizing cutaneous metastases remains a challenge for clinicians due to the wide spectrum of presentations. The most commonly reported presentation of cutaneous metastasis of any malignancy is nodular lesions. Other less frequent presentations include inflammatory erythema, ulcers, plaques, blisters, and teleangectasia.11-12 We report an atypical morphological manifestation of erythema ab igne with an underlying cutaneous metastasis that diag--
nosed based on biopsy. A thorough search in the literature resulted in only 11 reports of incidental ab igne lesions, mostly with history of heat exposure, in patients diagnosed with malignancy (Table 1).11-17 Interestingly, most patients were elderly males with gastrointestinal cancer. Erythema ab igne was observed mainly on the back followed by the abdomen which possibly reflect common sites of heat application. In addition, erythema ab igne lesions were the first sign of an occult internal malignancy in 50%. However, due to lack of a skin biopsy and positive history of heat application, secondary cutaneous malignancy was not shown in any of the reports.

Jones et al. suggested an explanation to the relation between erythema ab igne and malignancy. They hypothesized that erythema ab igne is the result of frequent application of heat to manage the pain associated

Table 1. Ab igne in the presence of history of malignancy.

<table>
<thead>
<tr>
<th>Author, year</th>
<th>Age</th>
<th>Gender</th>
<th>Primary malignancy organ</th>
<th>Skin lesion site</th>
<th>Lesion detection</th>
<th>Heat exposure</th>
<th>Survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mok et al. 1984</td>
<td>68</td>
<td>F</td>
<td>Pancreas</td>
<td>Back</td>
<td>Before Dx</td>
<td>No</td>
<td>Died</td>
</tr>
<tr>
<td>Ashby et al. 1985</td>
<td>67</td>
<td>F</td>
<td>Breast</td>
<td>Buttock and thigh</td>
<td>Not mentioned</td>
<td>No</td>
<td>Died</td>
</tr>
<tr>
<td>Ashby et al. 1985</td>
<td>84</td>
<td>M</td>
<td>Lung</td>
<td>Abdomen</td>
<td>Not mentioned</td>
<td>No</td>
<td>Died</td>
</tr>
<tr>
<td>Ashby et al. 1985</td>
<td>38</td>
<td>M</td>
<td>IgG myeloma</td>
<td>Back</td>
<td>Not mentioned</td>
<td>Radiation therapy</td>
<td>On palliative</td>
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<td>Ashby et al. 1985</td>
<td>78</td>
<td>M</td>
<td>Rectal</td>
<td>Perineum and buttock</td>
<td>Before Dx</td>
<td>Yes</td>
<td>On palliative</td>
</tr>
<tr>
<td>Ashby et al. 1985</td>
<td>65</td>
<td>F</td>
<td>Renal</td>
<td>Abdomen</td>
<td>4 months after Dx</td>
<td>Yes</td>
<td>No mention</td>
</tr>
<tr>
<td>Halliday et al. 1986</td>
<td>45</td>
<td>M</td>
<td>Gastric</td>
<td>Abdomen and back</td>
<td>Not mentioned</td>
<td>Yes</td>
<td>No mention</td>
</tr>
<tr>
<td>Mac Hale et al. 2000</td>
<td>36</td>
<td>F</td>
<td>Rectal</td>
<td>Back</td>
<td>Before Dx</td>
<td>Yes</td>
<td>Succumbed</td>
</tr>
<tr>
<td>Mac Hale et al. 2000</td>
<td>34</td>
<td>M</td>
<td>Unknown primary</td>
<td>Abdomen and back</td>
<td>Before Dx</td>
<td>Yes</td>
<td>Succumbed</td>
</tr>
<tr>
<td>Molina et al. 2010</td>
<td>45</td>
<td>M</td>
<td>Colorectal</td>
<td>Perineum and buttock</td>
<td>Before Dx</td>
<td>Yes</td>
<td>Improved</td>
</tr>
<tr>
<td>Bunick et al. 2014</td>
<td>66</td>
<td>F</td>
<td>Pancreas</td>
<td>Back</td>
<td>Before Dx</td>
<td>Yes</td>
<td>No mention</td>
</tr>
<tr>
<td>Present patient</td>
<td>60</td>
<td>F</td>
<td>Rectal</td>
<td>Abdomen</td>
<td>After Dx</td>
<td>Yes</td>
<td>Died</td>
</tr>
</tbody>
</table>

Dx: Diagnosis.

Figure 2. A) Sample composed of epidermis with underlying dermis and subcutaneous fat shows adenocarcinoma extending from upper dermis toward subcutaneous fat. B) The adenocarcinoma islands are composed of cohesive small glands with scattered areas of necrosis. C) The tumor cells are uniform irregular with large nuclei and several mitoses. The area of necrosis is also seen. D) The tumor cells express strong cytokeratin (CK) 20 immunostaining.
with occult internal malignancy. Our patient used heat pads for the same purpose and the erythema ab igne masked the underlying cutaneous metastasis.

Conclusions

We report a rare case of colorectal adenocarcinoma cutaneous metastasis diagnosed based on biopsy that morphologically presented as erythema ab igne. By sharing this report, we aim to stress the wide range of presentation of cutaneous metastases, and to bring awareness to the possibility of metastasis when encountering erythema ab igne in cancer patients.

References