Metastatic Carcinoma to the Skin

Paul K. Shitabata, M.D.
Director of Dermatopathology
Harbor-UCLA Dermatology
Which are true statements?

- 20% of all patients with internal cancers have cutaneous metastases.
- Inflammatory breast carcinoma is associated with increased neutrophils within the dermis.
- Primary mucinous carcinomas of the skin are characteristically CK20 positive.
- Metastatic carcinoma from the lung to the skin is the most common primary carcinoma site in men and women.

May have more than one answer.
Helpful immunohistochemical stains to confirm a metastatic renal cell carcinoma to the skin include:

- Cytokeratin-pan
- CK7
- CK20
- Vimentin
- S100
- Oil red O

May have more than one answer
Answers

- NONE.
- 5-10% of all patients with internal cancers have cutaneous metastases.
- Inflammatory breast carcinoma is associated with dermal lymphatic invasion within the dermis.
- Primary mucinous carcinomas of the skin are characteristically CK20 negative.
- Metastatic carcinoma from the lung to the skin is the most common primary carcinoma site in men-in women, the primary site is breast.
Answers

- Cytokeratin-pan
- Vimentin

Additional positive stains include CD10 and EMA. Oil red O is a cytochemical stain, which can only be performed upon fresh or frozen tissue.
Features that favor a diagnosis of primary Merkel cell carcinoma of the skin to a metastatic small cell carcinoma from the lung include:

- CK20 positive
- CK7 positive
- TTF positive
- CEA positive
- Chromogranin positive
- LCA positive
- S100 positive

May have more than one answer
Answers

- CK20 positive

Although Merkel cell carcinoma is chromogranin positive, this will not separate it from other neuroendocrine carcinomas such as a small cell carcinoma from the lung.
What is the most specific immunohistochemical stain for the primary malignancy?

<table>
<thead>
<tr>
<th>Organ</th>
<th>Immunohistochemical Stain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td></td>
</tr>
<tr>
<td>Thyroid</td>
<td></td>
</tr>
<tr>
<td>Melanoma</td>
<td></td>
</tr>
<tr>
<td>Lymphoma</td>
<td></td>
</tr>
<tr>
<td>Choriocarcinoma</td>
<td></td>
</tr>
<tr>
<td>Organ</td>
<td>Immunohistochemical Stain</td>
</tr>
<tr>
<td>-------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>Prostate</td>
<td>PSA (prostate specific antigen)</td>
</tr>
<tr>
<td>Thyroid</td>
<td>TTF-1</td>
</tr>
<tr>
<td>Melanoma</td>
<td>HMB-45 or Melan-A</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>LCA</td>
</tr>
<tr>
<td>Choriocarcinoma</td>
<td>HCG (human chorionic gonadotropin)</td>
</tr>
</tbody>
</table>
Which stains would NOT be helpful in distinguishing a metastatic adenocarcinoma from the colon from a primary eccrine adenocarcinoma of the skin?

- TTF1
- CEA
- S100
- CK-pan
- Melan-A

May have more than one answer.
Primary eccrine carcinomas of the skin and colon cancers are typically cytokeratin positive and may show positivity for CEA and S100. TTF-1 is positive in lung and thyroid cancers while Melan-A is specific for melanomas.