Case

57-year-old female with “crackleware” esophagus
Patient history

2006:

57-year-old female with acute epigastric pain after ingestion of a rice meal

Patient’s history unremarkable, apart from a long-term habit of ingestion of hot peppermint candies and tobacco smoking (20 cigarettes/day)

Examination of the oral cavity: patchy leukoplakia

Laboratory tests: ANA (1:320), anti-dsDNA-AB
Patient history

2006:

Endoscopy: 6 cm long, incomplete rupture extending into the muscularis propria of the middle third of the esophagus

Patient history

2006:

**Histology:** diffuse extensive hyperkeratosis with thickened basal cell layer, acanthosis and a prominent granular layer

Patient history

2006:

Endoscopic treatment: sealing the rupture by continuous metal clipping
Patient history

2006-2013:
Clinical surveillance of the patient
Endoscopy
Patient history

2006-2013:
Clinical surveillance of the patient
Biopsy histology: high grade intraepithelial neoplasia (syn. carcinoma in situ), suspicious of microinvasion
Patient history

2006-2013:
Clinical surveillance of the patient

27.01.2014:
Esophagectomy
Diagnosis:
Esophageal leukoplakia (diffuse epidermization or epidermoid metaplasia) with multifocal high grade intraepithelial neoplasia and early-invasive squamous cell carcinoma (pT1a G3)
Etiology of squamous cell carcinoma

- Tobacco smoking
- Alcohol consumption
- Hot beverages
- Dietary factors
- Other factors: ionizing radiation, environmental agents (HPV, combustion fumes)
- Plummer-Vinson syndrome
- Coeliac disease
- Achalasia
Differential diagnosis of diffuse esophageal hyperkeratosis

- Inherited keratinization defects: tylosis or mucosal hyperkeratosis syndromes
- Lichen planus
- Ethanol exposure
- Duodenal reflux
- Pill-induced esophagitis
- Sloughing esophagitis
- Riboflavin or zinc deficiency
2006:
57-year-old female with acute epigastric pain after ingestion of a rice meal

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Examination of the oral cavity: patchy leukoplakia

Laboratory tests: ANA (1:320), anti-dsDNA-AB

IHC and PCR for HPV negative
Esophageal leukoplakia or epidermoid metaplasia: a clinicopathological study of 18 patients

Aatur D Singhi¹, Christina A Arnold², Clinton D Crowder³, Dora M Lam-Himlin⁴, Lysandra Voltaggio⁵ and Elizabeth A Montgomery⁶

Table 1 Clinical and endoscopic findings of 18 patients with esophageal epidermoid metaplasia

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age (years)</th>
<th>Sex</th>
<th>Clinical presentation</th>
<th>Tobacco smoking (≥ 10 packs-years)</th>
<th>Alcohol (≥ 2 per day)</th>
<th>Location/distance from incision (cm)</th>
<th>Other findings</th>
<th>Follow-up (months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>60</td>
<td>F</td>
<td>GERD</td>
<td>No</td>
<td>No</td>
<td>28–30 Adjacent high-grade squamous dysplasia</td>
<td>Status post EMR; NED (5)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>54</td>
<td>F</td>
<td>Dysphagia</td>
<td>Yes</td>
<td>No</td>
<td>NA</td>
<td>NED (12)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>75</td>
<td>F</td>
<td>Dysphagia, h/o oral and esophageal lichen planus</td>
<td>Yes</td>
<td>No</td>
<td>Middle esophagus No</td>
<td>Persistent EEM (16)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>69</td>
<td>F</td>
<td>Hiatal hernia</td>
<td>No but long h/o second-hand smoke</td>
<td>Yes</td>
<td>33 Adjacent high-grade squamous dysplasia</td>
<td>SCC (10), Treated by esophagectomy</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>60</td>
<td>M</td>
<td>Achalasia</td>
<td>Yes</td>
<td>Yes</td>
<td>30 No Adjacent SCC</td>
<td>NED (11)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>55</td>
<td>M</td>
<td>GERD</td>
<td>No</td>
<td>No</td>
<td>16–34 No Adjacent SCC</td>
<td>NED (12)</td>
<td></td>
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<tr>
<td>7</td>
<td>70</td>
<td>F</td>
<td>Dysphagia</td>
<td>No</td>
<td>No</td>
<td>17 No Adjacent SCC</td>
<td>NED (12)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>37</td>
<td>M</td>
<td>GERD</td>
<td>No</td>
<td>No</td>
<td>23–35 Adjacent SCC</td>
<td>NED (12)</td>
<td></td>
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<tr>
<td>9</td>
<td>81</td>
<td>F</td>
<td>Dysphagia</td>
<td>No</td>
<td>No</td>
<td>17 SCC</td>
<td>NED (12)</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>49</td>
<td>F</td>
<td>Dysphagia</td>
<td>Yes</td>
<td>No</td>
<td>28 SCC</td>
<td>NED (12)</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>55</td>
<td>F</td>
<td>Dysphagia</td>
<td>Yes</td>
<td>No</td>
<td>17 SCC</td>
<td>NED (12)</td>
<td></td>
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<tr>
<td>12</td>
<td>50</td>
<td>M</td>
<td>Dysphagia</td>
<td>Yes</td>
<td>No</td>
<td>26–32 SCC</td>
<td>NED (12)</td>
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<tr>
<td>13</td>
<td>72</td>
<td>F</td>
<td>Dysphagia, h/o oral and esophageal lichen planus</td>
<td>Yes</td>
<td>No</td>
<td>23–35 SCC</td>
<td>NED (12)</td>
<td></td>
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<tr>
<td>14</td>
<td>61</td>
<td>M</td>
<td>Surveillance for h/o HGD in Barrett’s esophagus w/ PDT</td>
<td>Yes</td>
<td>No</td>
<td>70-80 No Adjacent SCC</td>
<td>Persistent EEM (14)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>66</td>
<td>M</td>
<td>Dysphagia, h/o laryngeal SCC</td>
<td>Yes</td>
<td>Yes</td>
<td>27–37 SCC</td>
<td>Persistent EEM (14)</td>
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<tr>
<td>16</td>
<td>77</td>
<td>F</td>
<td>Meloma, anemia</td>
<td>No</td>
<td>Yes</td>
<td>No Adjacent SCC</td>
<td>NED (12)</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>54</td>
<td>M</td>
<td>Dysphagia, nasone, meloma</td>
<td>Yes</td>
<td>Yes</td>
<td>No Adjacent SCC</td>
<td>NED (12)</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>54</td>
<td>M</td>
<td>GERD, epigastric discomfit</td>
<td>No</td>
<td>No</td>
<td>No Adjacent SCC</td>
<td>NED (12)</td>
<td></td>
</tr>
</tbody>
</table>

Abbreviations: GERD, esophageal epidermoid metaplasia; EEM, endoscopic mucosal resection; F, female; GERD, gastroesophageal reflux disease; h/o, history of; HGD, high-grade dysplasia; M, male; NA, not available; NED, no evidence of disease; PDT, photodynamic therapy; SCC, squamous cell carcinoma.
Take Home Message

- Rare histological finding
- Involves middle-to-distal esophagus
- Predominantly middle-aged to elderly females with dysphagia
- Main risk factors: tobacco smoking and alcohol consumption
- Strict clinical surveillance for the early identification of squamous dysplasia and SCC
- Adequate follow-up, surrounding mucosa

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