Eligible for 1 MOC SA Credit From the ABD

This Photo Challenge in our print edition is eligible for 1 self-assessment credit for Maintenance of Certification from the American Board of Dermatology (ABD). After completing this activity, diplomates can visit the ABD website (http://www.abderm.org) to self-report the credits under the activity title “Cutis Photo Challenge.” You may report the credit after each activity is completed or after accumulating multiple credits.

A previously healthy 20-year-old Chinese man presented to our dermatology outpatient clinic with a solitary painless ulcer on the right areola of 1 week’s duration. Examination showed a small, slightly indurated ulcer with well-defined borders. No lesions were noted elsewhere. Swabs for pyogenic culture and herpes simplex virus polymerase chain reaction tests were sent, and he was treated empirically with oral cephalaxin and tetracycline ointment 3%. At 1-week follow-up the ulcer had dried up and begun to heal, and results from the laboratory investigations were negative.

WHAT’S THE DIAGNOSIS?

a. erosive adenomatosis of the nipple
b. nipple eczema
c. Paget disease
d. primary syphilitic chancre of the nipple
e. ulcerated basal cell carcinoma

PLEASE TURN TO PAGE 31 FOR THE DIAGNOSIS
Because laboratory investigation was negative, a primary syphilitic chancre was suspected based on clinical findings, which was confirmed by a positive rapid plasma reagin with a titer of 1:32 and a positive Treponema pallidum particle agglutination assay. Results were negative for human immunodeficiency virus. On further inquiry, the patient acknowledged that the right areola had been traumatized during sexual activity with his regular male partner 1 month prior. In the last year he reported having had 5 different male partners. He was treated with a single dose of 2.4 million IU of intramuscular benzathine penicillin. Screening for other sexually transmitted infections revealed concomitant gonococcal infection of the pharynx and chlamydia proctitis, both of which were subsequently treated. On follow-up 2 weeks after presentation the ulcer had resolved, and he currently is undergoing serial rapid plasma reagin titer monitoring.

Primary syphilitic chancres can occur at any mucocutaneous site of inoculation, most frequently on the genitalia. Classically, after an incubation period of 9 to 90 days, a painless indurated ulcer forms and heals spontaneously after 3 to 6 weeks if left untreated. Chancres at extragenital sites are uncommon, occurring in approximately 2% of patients with primary syphilis. Of them, common sites include the lips and mouth (40%–70%), with areolar involvement rarely being reported. A PubMed search of articles indexed for MEDLINE using the terms nipple and chancre revealed 9 case reports in the English-language literature, with the first 2 cases being reported by Lee et al in 2006. The characteristics of these cases and our patient are summarized in the table.

Oral contact or traumatization of the nipple by the patient’s sexual partner was reported in all but one of these cases; trauma was unknown in one case. Our patient reported a similar history of trauma to the nipple. It is known that transmission of syphilis can take place via kissing or oral contact, and it has been asserted that oral syphilitic lesions are highly infectious. Syphilis also

### Chancre of the Nipple Patient Characteristics

<table>
<thead>
<tr>
<th>Study (Year)</th>
<th>Age, y</th>
<th>Sexual Orientation</th>
<th>Incubation Period, wk</th>
<th>Nipple Trauma</th>
<th>Presenting Feature(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee et al (2006)</td>
<td>54</td>
<td>HSM</td>
<td>2–4</td>
<td>Yes</td>
<td>Swelling of the nipple</td>
</tr>
<tr>
<td>Lee et al (2006)</td>
<td>24</td>
<td>HSM</td>
<td>2–4</td>
<td>Yes</td>
<td>Erosive change of the nipple</td>
</tr>
<tr>
<td>Oh et al (2008)</td>
<td>47</td>
<td>HSM</td>
<td>3</td>
<td>Yes</td>
<td>Indolent ulcer covered with crust</td>
</tr>
<tr>
<td>Sim et al (2010)</td>
<td>56</td>
<td>HSM</td>
<td>3–4</td>
<td>Yes</td>
<td>Erythematous, nontender, nonpruritic, erosive patch with ipsilateral lymphadenopathy</td>
</tr>
<tr>
<td>Yu et al (2012)</td>
<td>36</td>
<td>Unknown</td>
<td>4</td>
<td>Yes</td>
<td>Erythematous, crusted, erosive patch with several pustules</td>
</tr>
<tr>
<td>Chiu and Tsai (2012)</td>
<td>27</td>
<td>HSM</td>
<td>1</td>
<td>Yes</td>
<td>Crusted erythematous plaque</td>
</tr>
<tr>
<td>Zheng et al (2014)</td>
<td>36</td>
<td>HSM</td>
<td>2</td>
<td>Yes</td>
<td>Bilateral, scaly, erythematous patches with erosion</td>
</tr>
<tr>
<td>Podlipnik et al (2015)</td>
<td>49</td>
<td>MSM</td>
<td>Unknown</td>
<td>Unknown</td>
<td>Well-demarcated, erythematous, eroded nodule that was firm and slightly tender</td>
</tr>
<tr>
<td>Fukuda et al (2015)</td>
<td>29</td>
<td>MSM</td>
<td>Unknown</td>
<td>Yes</td>
<td>Indurated, scaly, erythematous lesion with erosion and lymphadenopathy</td>
</tr>
<tr>
<td>Current report</td>
<td>20</td>
<td>MSM</td>
<td>4</td>
<td>Yes</td>
<td>Well-demarcated indurated painless ulcer</td>
</tr>
</tbody>
</table>

Abbreviations: HSM, heterosexual men; MSM, men who have sex with men.
can be transmitted by an already infected sexual partner sustaining minor trauma to the oral mucosa, allowing *Treponema pallidum* from the bloodstream to be inoculated onto the nipple. Another explanation for transmission could be the Koebner phenomenon, whereby trauma at the nipple of an already infected patient could lead to the formation of a chancre.6,8

The differential diagnosis includes erosive adenomatosis of the nipple, nipple eczema, Paget disease of the breast, and ulcerated basal cell carcinoma. Erosive adenomatosis of the nipple is a benign tumor of unilateral involvement that presents as an asymptomatic eroded/ulcerated papule. Clinically, it is similar to Paget disease of the breast. Eczema of the nipple usually is associated with pruritus and epidermal changes such as scaling.7,8 Paget disease of the breast arises from the extension of breast ductal carcinoma in situ onto the skin overlying the nipple. It can present as a unilateral nipple plaque with ulceration and bloody discharge. The diagnoses of erosive adenomatosis and Paget disease are confirmed with histologic examination. Basal cell carcinoma is the most common nonmelanoma skin cancer and can present as an ulcerated plaque, often with rolled borders, pearly edges, and overlying telangiectasia. It is known to be locally invasive. A punch biopsy and histopathologic examination would confirm the diagnosis of basal cell carcinoma.14

Extragenital chancres, especially those occurring at unusual sites, are uncommon. Therefore, a high index of suspicion is required to diagnose and initiate appropriate treatment for these patients.

**REFERENCES**