Clinicopathologic Self-Assessment

Handout

Symposium (S003), July 27th 2017

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CASE 1: History of present illness

A 50-year-old male

Presented to the dermatology clinic with a three-month history of diffuse hair loss as well as diarrhea and a twelve-pound weight loss

No hospitalizations, surgeries, or changes in medications over the past 6 months
CASE 1: Social & family history, ROS

Reported a monogamous relationship for 12 years

Denied any illicit drug use or blood transfusions

Denied family history of hair loss

Denied any rashes or genital lesions
Physical exam

Diffuse and patchy non-scarring alopecia
Eyebrow, facial, and body hair preserved
Increased catagen/telogen hairs
Peribulbar infiltrate
What is the most likely diagnosis?

A. Alopecia areata
B. Androgenetic alopecia
C. Lichen planopilaris
D. Secondary syphilis
What is the most appropriate next step in management?

A. Trial of intralesional corticosteroid injection
B. Trial of minoxidil
C. Antinuclear antibody (ANA) test
D. Rapid plasma reagin (RPR) test, Warthin-Starry, or *T. pallidum* immunohistochemistry
What is the most likely diagnosis?

A. Alopecia areata
B. Androgenetic alopecia
C. Lichen planopilaris
D. Secondary syphilis
(D) Secondary syphilis
Syphilitic alopecia

May be the only manifestation of secondary syphilis

Clinically moth-eaten, telogen effluvium-like or combination of the two
Syphilitic alopecia: Histology

1) Papulosquamous: superficial/deep perivascular/follicular infiltrate with plasma cells

2) Telogen effluvium (TE) -like

3) Alopecia areata (AA) –like

*TE: no miniaturization or peribulbar inflammation!*

*AA: typically no peribulbar plasma cells!*
Alopecia areata

No peribulbar plasma cells

Peribulbar infiltrate

Most hairs in catagen
Androgenetic alopecia

Catagen/telogen hairs not as marked as in alopecia areata

No peribulbar inflammation

Normal number of follicles with variable sizes
Choice C) Lichen planopilaris

- Inflammation more superficial
- Perifollicular fibrosis
CASE 1: Follow up

Upon further questioning patient revealed an unprotected sexual encounter 5 months prior

Treated successfully with 2.4 million U of benzathine penicillin G IM X1
CASE 2: History of present illness

A 54-year-old male

Past medical history of HTN and DM

Presents to dermatology clinic with a two-month history of a painful ulcer on his penis
CASE 2: History of present illness

Treatments prior to presenting to dermatology

Nystatin powder

Clindamycin, ciprofloxacin PO
CASE 2: Review of systems

No history of fever or chills
No history of sexually transmitted infections
No inguinal lymphadenopathy
Physical exam

Well-demarcated 5 x 3 cm ulcer on the dorsal shaft of the penis
What is the most likely diagnosis?

A. Infection
B. Metastatic cutaneous Crohn’s disease
C. Pyoderma gangrenosum
D. Squamous cell carcinoma
Epidermal hyperplasia

Ulcer
Fibrosis

Plasma cells

Fibrosis
What is the most likely diagnosis?

A. Infection
B. Metastatic cutaneous Crohn’s disease
C. Pyoderma gangrenosum
D. Squamous cell carcinoma
Bacterial, fungal, and mycobacterial cultures negative

T. Pallidum immunohistochemistry negative

What is the most likely diagnosis?

A. Chancroid
B. Granuloma inguinale
C. Lymphogranuloma venerum
D. Primary syphilis
(B) Granuloma inguinale
## Infectious causes of genital ulcers

<table>
<thead>
<tr>
<th>Disease</th>
<th>Organism</th>
<th>Clinical lesion</th>
<th>Pain</th>
<th>Bubo (enlarged inguinal lymph node)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genital herpes</td>
<td>HSV2, HSV1</td>
<td>Multiple Vesicles, erosions, ulcers</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Primary syphilis</td>
<td>Treponema pallidum (Spirochete)</td>
<td>Single (usually) Non-purulent Indurated</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Chancroid</td>
<td>Haemophilus ducreyi (Gram-coccobacillus)</td>
<td>Multiple (often) Purulent Soft</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>LGV</td>
<td>Chlamydia trachomatis serovars L1–3 (Gram-coccobacillus)</td>
<td>Single Transient</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Granuloma inguinale (Donovanosis)</td>
<td>Klebsiella granulomatis (Gram-bacillus)</td>
<td>Single Chronic Indurated, friable</td>
<td>+/-</td>
<td>-</td>
</tr>
</tbody>
</table>
## Infectious causes of genital ulcers

<table>
<thead>
<tr>
<th>Disease</th>
<th>Diagnosis</th>
<th>Histology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genital herpes</td>
<td>DFA</td>
<td>Acantholysis</td>
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<tr>
<td></td>
<td>Tzanck</td>
<td>Multinucleation</td>
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<tr>
<td></td>
<td>Culture</td>
<td>Margination of chromatin</td>
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<tr>
<td></td>
<td>PCR</td>
<td>Pale nuclear inclusions</td>
</tr>
<tr>
<td>Primary syphilis</td>
<td>Darkfield, silver stain, immunohistochemistry</td>
<td>Ulcer</td>
</tr>
<tr>
<td></td>
<td>Serology</td>
<td>Plasma cells</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vascular endothelial swelling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organisms (darkfield, silver stain, immunohistochemistry)</td>
</tr>
<tr>
<td>Chancroid</td>
<td>Culture</td>
<td>Ulcer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 zones: 1) necrosis, neutrophils, cell debris, 2) granulation tissue, 3) plasma cells</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sometimes organisms (“school of fish”)</td>
</tr>
<tr>
<td>LGV</td>
<td>Serology</td>
<td>Rarely biopsied!</td>
</tr>
<tr>
<td></td>
<td>Culture</td>
<td>Ulcer</td>
</tr>
<tr>
<td></td>
<td>PCR</td>
<td>Granulation tissue</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Plasma cells, neutrophils</td>
</tr>
<tr>
<td>Granuloma inguinale (Donovanosis)</td>
<td>Demonstration of organisms (smears or histology)</td>
<td>Ulcer</td>
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<tr>
<td></td>
<td></td>
<td>Epidermal hyperplasia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Plasma cells, neutrophils</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organisms within histiocytes (“Donovan bodies”)</td>
</tr>
</tbody>
</table>
(Choice A) Chancroid

Coccobacilli in chains ("school of fish")

Diagnosis by culture
(Choice C) Lymphogranuloma venerum

A transient ulcer, rarely biopsied!

Diagnosis by culture, PCR, or serology
(Choice D) Primary syphilis

Ulcer (typically punched out)

Plasma cells

*T. pallidum* IHC
(Choice B) Metastatic cutaneous Crohn’s disease

Can present as an ulceration in the genitalia

Ill-defined granulomas in the dermis

Kiuru et al. Dermatol Online J. 2015 Nov 18;21(11)
(Choice C)
Pyoderma gangrenosum

Can rarely occur on genitalia

Ulceration with neutrophilic abscess formation
(Choice D) Squamous cell carcinoma

Typically arises on the mucosal surface of the penis; presentation on the outer skin unusual

Exophytic or non-ulcerated lesion is the usual presenting sign

Atypical keratinocytes extending into dermis
CASE 2: Follow up

Trimethoprim/sulfamethoxazole 160/800 mg twice daily

Ulcer completely healed at a follow-up appointment 6 weeks later