Morphology:
How to describe what you see

Basic Dermatology Curriculum

Last updated July 16th, 2013
Module Instructions

- The following module contains a number of blue, underlined terms which are hyperlinked to the dermatology glossary, an illustrated interactive guide to clinical dermatology and dermatopathology.
- We encourage the learner to read all the hyperlinked information.
Goals and Objectives

- The purpose of this module is learn how to best describe skin lesions
- After completing this module, the learner will be able to:
  - Develop a systematic approach to describing skin eruptions
  - Utilize the appropriate terms to describe morphology
Morphology

- The word **morphology** is used by dermatologists to describe the form and structure of skin lesions.
- The morphologic characteristics of skin lesions are **key elements in establishing the diagnosis** and communicating skin findings.
- There are two steps in establishing the morphology of any given skin condition:
  1. Careful visual and tactile inspection
  2. Application of correct descriptors
Visual and Tactile Inspection

- Accumulate detailed information about the visual and tactile aspects of the skin findings
- Be able to communicate an accurate description so someone on the other end of a phone can get a mental picture of what you see.

**Question 1**
- How would you fill in the description of the item depicted on the next slide?
Question 1

• How would you describe the object to the right?
• Be as detailed as you can be!
Question 1

This is a red, circular, shiny object with a small invagination on top. It measures 8 cm. It is in a white background and casts a shadow.

The shadow tells us it is raised (palpable).
This is a red, circular, shiny object with a small invagination on top. It measures 8 cm. It is in a white background and casts a shadow.

The above description identifies:
1. Palpability (indicated by shadow)
2. Color
3. Shape
4. Texture
5. Size
6. Location
Application of the correct descriptors

• We have just reviewed careful visual inspection

• We will now define the terms dermatologists use to describe skin lesions

• We will then have a series of cases for you to practice describing so you can use the correct descriptors.
Primary lesion: Macule

- (L. macula, “spot”)
- A macule is flat; if you can feel it, then it is **not** a macule.
Examples of Macules
Primary lesion: Patch

- Patches are flat but larger than macules.
- If it’s flat and larger than 1 cm, it is a patch.
Examples of Patches
Primary lesion: Papule

- (L. papula, “pimple”)
- Papules are raised lesions less than 1 cm
- It is caused by a proliferation of cells in epidermis or superficial dermis
Examples of Papules
Primary lesions: Plaque

- Plaques > 1 cm
  - You can feel them
  - They cast a shadow with side lighting

- It is also caused by a proliferation of cells in epidermis or superficial dermis
Examples of Plaques
Nodule

- (L. nodulus, “small knot”)
- It is caused by a proliferation of cells into the mid-deep dermis
Examples of Nodules
Primary lesion: Vesicle

- (L. vesicula, “little bladder”; bulla, “bubble”)
- Vesicles are fluid-filled papules (small blisters)
- A large (> 1cm) blister is called a bulla
Examples of Vesicles
Pustule

- Pus is made up of leukocytes and a thin fluid called *liquor puris* (L. “pus liquid”)
- See also *furuncle* and *abscess*
Erosion

- **Erosions** are loss of part or all of the epidermis
- They may occur after a vesicle forms and the top peels off
- They weep and become crusted
Ulcer

- (L. ulcus, “sore”)
- Ulcers are complete loss of the epidermis in addition to part of the dermis
- They often heal with scarring; erosions usually do not heal with scars
• Now you have the terms you need

• Let’s practice your descriptions with cases

• Do the best you can – like learning any new language it takes practice!
Case One
Mr. F
Case One: History

- **HPI**: Mr. F is a 32-year-old man who presents to his primary care provider with “blotches” on his upper back, chest, and arms for several years. They are more noticeable in the summertime.
- **PMH**: shoulder pain from an old sports injury
- **Allergies**: none
- **Medications**: NSAID as needed
- **Family history**: not contributory
- **Social history**: auto mechanic
- **ROS**: negative
Case One: Skin Exam
Case One

- How would you describe these skin findings?
- What do you see? Look carefully at all clues in the photographs.
- There are many right ways to describe something. Be creative.
Case One, Question 1

Are these lesions elevated, flat, or depressed?

[Image of skin lesions]
Case One, Question 1

If you don’t feel an elevation or depression as your finger runs across the skin, they are flat.

- Small, flat lesions are called **macules**.
Case One, Question 2

How else can you describe them?

– What size are they?
– What shape are they?
– What color are they?
– How regular and distinct is the border?
– How are they configured?
– How are they distributed?
Case One, Question 2

How else can you describe them?

– 3 to 10 mm
Case One, Question 3

How else can you describe them?

- What size are they?
- What shape are they?
- What color are they?
- How regular and distinct is the border?
- How are they configured?
- How are they distributed?
Case One, Question 3

How else can you describe them?

– 3 to 10 mm
– Round to oval
Case One, Question 4

How else can you describe them?

- What size are they?
- What shape are they?
- What color are they?
- How regular and distinct is the border?
- How are they configured?
- How are they distributed?
Case One, Question 4

How else can you describe them?

- 3 to 10 mm
- Round to oval
- Pink to tan
Case One, Question 5

How else can you describe them?

- What size are they?
- What shape are they?
- What color are they?
- How regular and distinct is the border?
- How are they configured?
- How are they distributed?
How else can you describe them?

- 3 to 10 mm
- Round to oval
- Pink to tan
- Sharp, irregular borders
Case One, Question 6

How else can you describe them?

– What size are they?
– What shape are they?
– What color are they?
– How distinct are they?
– How are they configured (how do the lesions relate to each other)?
– How are they distributed (where are they on the body)?
How else can you describe them?

- 3 to 10 mm
- Round to oval
- Pink to tan
- Sharp, irregular borders
- Separate, in no particular pattern
Case One, Question 7

How else can you describe them?

– What size are they?
– What shape are they?
– What color are they?
– How distinct are they?
– How are they configured?
– How are they distributed?
Case One, Question 7

How else can you describe them?

- 3 to 10 mm
- Round to oval
- Pink to tan
- Sharp, irregular borders
- Separate, in no particular pattern
- On the upper chest, back, and flexures of arms
Mr. F’s skin exam shows:
  • Multiple 3 to 10 mm pink to tan-colored, round, flat lesions with sharp, irregular borders and varying sizes on his upper chest, back and flexures of the arms.

Small (< 1cm) flat lesions are called **macules**

In this case, the primary lesion is a macule
Dr. D performs a potassium hydroxide exam and based on the findings, diagnoses Mr. F with *tinea versicolor*. The primary lesion in tinea versicolor is a **macule**.
Case One, Question 8

Which of the following answers are correct? (More than one may be correct.)

Macules can:

a. Feel raised
b. Feel flat
c. Contain fluid
d. Be any shape
Case One, Question 8

Answer: b & d

Macules can:

a. Feel raised (these are papules or plaques)
b. Feel flat
c. Contain fluid (these are vesicles or bullae)
d. Be any shape
Review: Macule vs Patch

MACULE (<1cm)
PATCH (>1cm)
Case Two

Mr. K
Case Two: History

- **HPI:** Mr. K is a 36-year-old man who presents with four years of itchy, flaky spots on his elbows, knees, and lower back. They have not improved with moisturizers.
- **PMH:** none
- **Allergies:** none
- **Medications:** none
- **Family history:** father died from heart attack at age 68
- **Social history:** delivery truck driver
- **Health-related behaviors:** drinks 2-3 beers a week
- **ROS:** negative
Case Two: Skin Exam
Case Two

- How would you describe these skin findings?
- Be as detailed as you can be!
Case Two, Question 1

Are these lesions raised, flat, or depressed?
Imagine running your finger over them.

- These are raised
- Large (>1cm), plateau-like, raised lesions are called **plaques**
Case Two, Question 1

How else can you describe them?

- Size?
- Shape?
- Color?
- Sharp borders?
- Texture?
- Configuration?
- Distribution?
Case Two, Question 1

How else can you describe them?

- 3 to 10 cm
- Round to geographic (like outlines on a map)
- Pink
- Sharply circumscribed
- Scaly
- Symmetrical
- Extensor surfaces (knees, elbows), back, gluteal cleft
Mr. K’s skin exam shows:

- Several 3-10 cm pink round sharply circumscribed scaly plaques on his extensor elbows, knees, lower back, and gluteal cleft

Mr. K has psoriasis. The primary lesion in this case of psoriasis is a plaque because it is elevated and over 1 cm in diameter.
Review: Papule vs Plaque

PAPULE (<1cm)
PLAQUE (>1cm)
Case Three

Mr. B
Case Three

- **HPI:** Mr. B is a 28-year-old man who presents with four days of pain and blisters on his left chest.
- **PMH:** none
- **Allergies:** none
- **Medications:** none
- **Family history:** noncontributory
- **Social history:** single; works as a personal trainer
- **ROS:** negative
Case Three, Questions

How would you describe these skin findings?

- Are these lesions raised, flat, or depressed?
- Do they have fluid in them?
Case Three, Questions

• These are raised
• They also have fluid in them
  – Remember - small, raised, fluid-filled lesions are called *vesicles*
Case Three

How else can you describe them?

- Size?
- Shape?
- Color?
- Texture?
- Configuration?
- Distribution?
Case Three

How else can you describe them?

- 2 – 5 mm
- Round to oval
- Clear, with a background erythematosus patch
- Fluid-filled
- Grouped vesicles
- Unilateral dermatomal distribution on the left chest
Part of describing lesions is noting distribution and configuration.

- **Distribution** means location(s) on the body.
- **Configuration** means how the lesions are arranged or relate to each other.

  - Lesions are grouped but also follow a linear pattern around the trunk.
  - This is an example of a segmental or dermatomal distribution.
Distribution / Configuration

- To learn more about distributions, click here:

- To learn more about configurations, click here:
  - These links take you to LearnDerm, a free resource for learning morphology terms
Diagnosis

- Mr. B’s skin exam shows:
  - Grouped 2-5 mm vesicles on an erythematous base in a unilateral, dermatomal configuration on the left chest
- Small, fluid-filled lesions are called vesicles
- Mr. K has shingles. The primary lesion in shingles is a vesicle.
To describe what you see on the skin, first determine the primary lesion

- Is it raised, flat, or depressed?
- Is it small or large?
- Is it fluid-filled?

The table in the next slide summarizes most of the terms used to describe the skin. We have already reviewed many of them. Click on the others to learn more.
<table>
<thead>
<tr>
<th>Raised</th>
<th>Flat</th>
<th>Depressed</th>
<th>Fluid-filled</th>
<th>Vascular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papule</td>
<td>Macule</td>
<td>Erosion</td>
<td>Vesicle</td>
<td>Telangiectasia</td>
</tr>
<tr>
<td>Plaque</td>
<td>Patch</td>
<td>Ulcer</td>
<td>Bulla</td>
<td>Petechiae</td>
</tr>
<tr>
<td>Nodule</td>
<td></td>
<td>Atrophy</td>
<td>Pustule</td>
<td>Ecchymosis</td>
</tr>
<tr>
<td>Tumor</td>
<td></td>
<td>Sinus</td>
<td>Furuncle</td>
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<tr>
<td>Wheal</td>
<td></td>
<td>Stria</td>
<td>Abscess</td>
<td></td>
</tr>
<tr>
<td>Burrow</td>
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<td></td>
</tr>
<tr>
<td>Scar</td>
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</tr>
</tbody>
</table>
In your descriptions, include adjectives that help describe the primary lesions. Make sure to consider:

- Size
- Shape
- Color
- Texture
- Configuration
- Distribution
Take Home Points

- To describe the skin, first inspect closely.
- Second, determine if the lesion is raised, flat, or depressed and its size.
- Then pick the term for the lesions that fits best!
- Finally, use adjectives relating to the shape, color, texture, distribution, and configuration to further describe the lesion.
- See the resources at the end for further reading.
Acknowledgements

- This module was developed by the American Academy of Dermatology’s Medical Student Core Curriculum Workgroup from 2008-2012.
- Primary authors: Patrick McCleskey, MD, FAAD; Peter A. Lio, MD, FAAD; Jacqueline C. Dolev, MD, FAAD; Amit Garg, MD, FAAD.
- Peer reviewers: Heather Woodworth Wickless, MD, MPH; Ron Birnbaum, MD; Timothy G. Berger, MD, FAAD.
- Revisions: Sarah D. Cipriano, MD, MPH, Jessica Kaffenberger, MD, Joslyn Kirby, MD. Last revised July 2013.
Resources

- Morphology illustrations are from the Dermatology Lexicon Project, which is now maintained by the American Academy of Dermatology as DermLex.
- Dolev JC, Friedlaender JK, Braverman, IM. Use of fine art to enhance visual diagnostic skills. JAMA 2001; 286(9), 100-2.
To take the quiz, click on the following link:

https://www.aad.org/quiz/morphology--learners