

Chapter 5. A Photo Quiz

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“Use a picture. It’s worth a thousand words.” – Arthur Brisbane

Objective: To teach the learner the definition, common pitfalls, development, and writing of a photo quiz allowing them to efficiently create their own using examples and overlays provided.

Objective

This chapter is designed to be used while you are writing a Photo Quiz. Prepare a case with a thorough history and physical, a detailed analysis with a differential of four to five possible diagnoses, a list of references that allow you to parse the differential, and your picture(s). Cut and paste the sample Photo Quiz at the end of this chapter and type over it with your case. You'll have a solid first draft in short order.

Common pitfalls

Before you start, make sure you have your patient's (or patient’s guardian's) written permission to use their case and image. Your hospital will have a specific form for this; most journals have a sample consent that is universally acceptable. (American Family Physician’s consent form can be found at: <http://www.aafp.org/dam/AAFP/documents/journals/afp/PQpatientconsent.pdf>.) Your institution may also have specific requirements about how your image is collected; with permission you can always use an image the patient took of themselves. (Patient's always have the right to take and maintain their own medical imaging and records.) Most institutions will have a research office or public affairs office that can help you navigate these requirements.

Creating a Photo Quiz

A Photo Quiz is a case-based tool for educating on a clinical topic. It often involves dermatology because skin makes a good canvas, but good images can also be found in ophthalmology, radiology (X-rays, CTs, MRIs, sonograms), pathology and electrocardiograms. This chapter is geared towards the Photo Quiz published by American Family Physician (AFP). (See: http://www.aafp.org/journals/afp/authors/guide/departments.html?cmpid=_van_640). AFP emphasizes educating on common clinical topics. Other journals are more open to esoteric presentations. There are numerous venues for publishing your Photo Quiz; tweak the format based on the author guide for the journal to which you are submitting.

A photo quiz has many elements in common with a case report or a poster. This makes it easy to turn a case report into a photo quiz and then a poster. They are both visually appealing versions of a case presentation. (See the Poster version of the sample Photo Quiz at the end of this chapter.)

Photo Quiz	Case Report	Poster
Title	Title	Title
Authors	Authors	Authors
History of present illness	Introduction	Introduction
Question	Case Report	Case Report
Discussion	Discussion	Images
Summary Table	Conclusion	Discussion
References	References	References

What makes a good Photo Quiz? A case that is interesting and educational. Your case is good if it accomplishes one or more of the following:

- Changes the course of medical science
- Illustrates a new principle, or offers a particularly good illustration of an established principle
- Supports or refutes a current theory
- Presents a previously misunderstood condition or response
- Identifies an unreported adverse response to drug therapies
- Shows an unrecognized cause-and-effect disease presentation
- Had a significant impact on the patient, physician or both
- Caused you to re-evaluate how you care for patients
- Suggests opportunities for patient education
- Presents as an unusual series of events that caused confusion or treatment dilemmas
- Is a new observation of the impact of one disease on another
- Shows an unexpected outcome of the treatment of one condition on a different condition

Title and author

An ideal Title hints at, but does not give away, the answer. This is your hook - a catchy title will get people to start reading. Don't spend more than five minutes on this at first; your title will likely evolve as you write, and journal editors may offer suggestions.

Always check the journal for specific authorship details. AFP, for example, never allows medical students or residents to be first author. Always define the author order, work expected, and timeline for all participants before you start. The first author is generally the one who does the most work; the last author is generally the senior / overseeing participant.

History of present illness

This is a very brief history. You do not need a formal introduction. Think of this as a concise but informative expert consultation -- ten sentences or less. The work here is to cut the chaff from your detailed history. Cut anything that does not directly impact your question and answers below. If you are having trouble here, whittle this section as much as you can in fifteen minutes, and then re-visit it after you complete your Question and Discussion. Because the Question and Discussion narrow your focus, once they are complete it is usually obvious what parts of your History are not needed. Reference your Images here.

Images

One to four pictures. High quality images that catch the reader's eye and help them answer the Question. The Title is your hook, the pictures set it. Many journals give guidance on resolution requirements and formatting. AFP recommends 300 ppi. Poor picture = poor chance of acceptance. AFP requires original images. Other journals, very rarely, may allow a previously published picture. You must obtain written permission first from the copyright holder of the picture and from the journal editor.

Taking multiple pictures up front from different angles and distances increases your chance of getting the "right" image. Putting an object for size reference (i.e. a penny or ruler) improves the appeal of your image. If at all possible, avoid faces or other identifying features; although a properly executed consent may still allow publication, editors are sensitive to minimizing patient information exposure.

The question

This is your differential diagnosis in multiple choice format. The Question is often about the diagnosis, but can be anything that gets at the crux of the case -- what therapeutic choice, what diagnostic test, what you would expect the pathology to show. The answer choices should represent a good, but not exhaustive, differential. Typically there will be one correct answer and three or four incorrect answers. Incorrect choices should be challenging but not impossible, and can be grouped as a class of answers for brevity. (I.e., in the template below, there is a single choice for thrombocytopenic purpura instead of one choice for idiopathic thrombocytopenic purpura and another for thrombotic thrombocytopenic purpura.) Consider running your proposed question and answers by peers to make sure the question is neither too easy nor too hard.

Discussion

The second page of the Photo Quiz starts with the Discussion. The first paragraph is the correct answer with an explanation. The second paragraph fleshes out the answer, and answers the question, "Why should I care?" Each incorrect answer is then addressed in its own paragraph. This is a brief analysis of each item in your differential. Each answer should have its own

citation, typically of a peer reviewed source that clarifies how to distinguish this choice from the answer. The Discussion of all answer choices makes the Photo Quiz more educational than merely informative. Most journals limit the Discussion to 500 words.

Summary table

This is the conclusion for your Photo Quiz. It is a simple table of how to parse your differential. The Summary Table should be something that a practicing clinician would find useful in a clinical setting. In order to be complete, this sometimes means that your Summary Table will have more bullets than appear in your Discussion. For the most part, however, it is a graphic representation of a condensed discussion. Cut, paste, shorten, done; fifteen minutes, tops.

References

Standard formatting applies. Most venues restrict Photo Quizzes to ten references, which should be more than adequate. PubMed citation is appropriate; some journals want full author lists, some limit the authors in a citation. When researching, keep track of your references with all authors and then modify as needed.

Summary Points:

- ❖ A photo quiz is a case-based tool for education on a clinical topic.
- ❖ A large variety of clinical cases can be used as photo quizzes and include but is not limited to cases that; change the course of medical science, illustrate a new principal, shows an unrecognized cause- and –effect disease presentation, or is a new observation of the impact of one disease on another.
- ❖ The key components of a photo quiz include; Title and author, History of present illness, Question and discussion, Summary table, and References.
- ❖ A photo quiz and a poster presentation share many key elements and can often be adapted to each other.

References

See Photo Quiz specifics for AAFP at:

<http://www.aafp.org/journals/afp/authors/guide/departments.html>

See Photoclinic specifics for PediatricsConsultantLive at:

<http://imaging.ubmmmedica.com/consultantlive/photoclinic/SubmissionGuidelines.pdf>

How to write a Photo Quiz

For this recipe you will need:

- ❖ *A Case (this can be defined in many ways)*
- ❖ *A journal in which you wish to publish*
- ❖ *Patient consent*
- ❖ *The directions for a photo quiz from the location to which you wish to submit*
- ❖ *A high quality, interesting or highly educational photo*

Step 1: Find an interesting case with good physical exam finding and take a picture (or have the patient take a picture and send it to you.)

Step 2: Discuss the use of the picture with the patient. Confirm that they understand it may be seen by many people and obtain their signed consent for the picture. Use the journal's (or your institution's) consent. AAFP's consent form can be found at:

<http://www.aafp.org/dam/AAFP/documents/journals/afp/PQpatientconsent.pdf>

Step 3: Get a good history and physical exam on the patient. Make sure it is thorough. (When you actually write the photo quiz the HPI it will be brief, but you want to be able to reference a comprehensive history if asked by your peers.)

Step 4: Create a differential diagnosis for your exam finding. You want to have 3 to 4 good alternatives.

Step 5: Do a literature research for your answers (both correct and incorrect). (See Chapter 3!) Find a good reference for each alternative diagnosis.

Step 6: Write a brief paragraph about each diagnosis (both correct and incorrect.)

Step 7: Create a summary table that includes the conditions (the answer and the other 3 to 4 choices) in one column and the characteristics in the second column.

Step 8: Format your references to the journal's specifications.

Step 9: Format your Photo Quiz to the journal's specifications. (If rejected, reformat to the next journal's specs.) Submit!

Sample Photo Quiz

Spontaneous Hematomas in a 61-Year-Old Woman

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A 61 year old female presented with a one month history of easy bruising, progressing to spontaneous, painful, and diffuse bruises covering approximately 10 percent of her body. The patient had a history of severe depression, migraines, coronary artery disease and two prior episodes of transient ischemic attacks. For these conditions her medications included fiorinal, aspirin, and clopidogrel, all of which she had been taking at the same dose for years, and desvenlafexine, which had recently been added to treat her refractory depression. In addition to prescribed aspirin, the patient endorsed using additional over the counter aspirin (in the form of Goody's Headache Powder) several times per week. The patient denied recent illness, fevers, or other pain.

Physical examination revealed diffuse hematomas (on all aspects of her body including the face, neck and forearms), notable for their size (*Figure 1*). Also remarkable was the rapid development of hematomas in the Emergency Room with minor pressure (*Figure 2*) and spontaneously during evaluation (*Figure 3*).

Question

Based on the patient's presentation, medication history, physical examination and Emergency Department course, which one of the following is the most likely diagnosis?

- A. Physical abuse
- B. Hemophilia
- C. Senile purpura
- D. Iatrogenic coagulopathy
- E. Thrombocytopenic purpura

Discussion

The answer is D: Iatrogenic coagulopathy. Coagulopathy with clopidogrel and aspirin is well described. (1,2) Selective Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs) are known to increase bleeding in patients receiving concurrent antiplatelet therapy. (3) A new generation of active metabolite formulations of SNRIs has been developed to reduce side effect profiles and

drug-drug interactions. (4) However, the improved side effect profile of these new formulations may not extend to bleeding risk.

As the prevalence of SNRIs as part of our patients' medication profile is steadily increasing, it is important for primary care physicians to recognize their potential for interaction with anti-platelet therapies, and to closely monitor patients on these medications, especially at times of initiation and dose changes. Treatment remains discontinuation of the pathologic combination.

Physical abuse of the elderly is not uncommon, and can often present with unexplained bruises or welts. (5) Other signs include malnutrition, open sores, dehydration, sudden onset patch-like hair loss, and unexplained fractures. (6) Absence of other signs and spontaneous bruising under observation point away from abuse in this case.

Hemophilia is a generic term that covers a group of hereditary genetic disorders that prevent appropriate coagulation. (7) The spectrum of hemophilia runs from mild – typically only found after surgery or trauma, to severe – often evident at birth. Moderate disease can (rarely) present later in life with spontaneous bleeding, but typically presents with pain in weight bearing joints.

Senile purpura are dark, irregularly shaped hemorrhagic areas due to abnormal skin mobility that tears small blood vessels. (8) Aging causes this through gradual atrophy of perivascular connective tissue, almost exclusively on the extensor surfaces of the hands and arms.

Thrombocytopenic purpura could refer to either the idiopathic (ITP) or thrombotic (TTP) etiology. (9, 10) Both are characterized by thrombocytopenia, but can be clinically anticipated with a history of recent viral exanthema, upper respiratory illness, malignancy, and antiplatelet drugs. ITP is rare in adults, and TTP typically presents with other clinical signs to include neurologic findings, decreased renal function and fever. Diagnosis can be excluded with normal platelet count, but absence of supporting clinical evidence prevents delay in alternative diagnosis.

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Summary Table

<i>Condition</i>	<i>Characteristics</i>
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Physical abuse	Unexplained bruises, particularly in combination with one or more of the following: malnutrition, open sores, dehydration, patch-like hair loss and unexplained fractures.
Hemophilia	Onset typically at birth or after surgery or trauma, in moderate cases the presenting symptom is typically pain in weight bearing joints.
Senile Purpura	Typically limited to extensor surfaces of hands and arms.
Iatrogenic coagulopathy	Can present on achieving therapeutic dosage of any standard anti-platelet therapy. Over time presents more commonly with changes in dose or addition of interactive medications. SNRIs and their newer metabolite formulations increase risk.
Thrombocytopenic Purpura	IITP typically presents in the young after viral illness, TTP typically with one or more other symptoms to include neurologic findings, decreased renal function and fever.

References

1. Plavix Prescribing Information. Bristol-Myers Squibb/Sanofi Pharmaceuticals Partnership. Accessed 26 April 2011, at <http://products.sanofi-aventis.us/plavix/plavix.html>.
2. McQuaid KR, Laine L. Systematic review and meta-analysis of adverse events of low-dose aspirin and clopidogrel in randomized controlled trials. *Am J Med* 2006;119(8):624.
3. Reeves RR, Wise PM, Cox SK. SSRIs & the risk of abnormal bleeding. *J Psychosoc Nurs Men Health Serv* 2007;45(4):15-21.
4. Kamath J, Handratta V. Desvenlafaxine succinate for major depressive disorder: a critical review of the evidence. *Expert Rev Neurother* 2008 Dec;8(12):1787-97.
5. Swagerty D, Takahashi P. Elder Mistreatment. *Am Fam Physician* May 15, 1999.
6. National Center on Elder Abuse. Accessed 26 April 2011, at <http://www.ncea.aoa.gov>.
7. Franchini M, Favaloro EJ, Lippi G. Mild hemophilia. *J Thromb Haemost* 2010;8(3):421.
8. Harrison's Principles of Internal Medicine, 16th edition. Kasper D et al, McGraw-Hill pp680.
9. Aster R, Bougie D. Drug-Induced Immune Thrombocytopenia. *N Engl J Med* 2007;357:580-587.
10. Cines D, Blanchette V, Chir B. Immune Thrombocytopenic Purpura. *N Engl J Med* 2002;346:995-1008.

Photo quiz as a poster

Spontaneous Hematomas Attributable to Interaction Between Clopidogrel and Desvenlafaxine



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Introduction

Desvenlafaxine is marketed as an effective alternative to Venlafaxine for treatment of Major Depressive Disorder (MDD) with fewer drug-drug interactions. We present a case of coagulopathy manifesting with spontaneous, cutaneous hemorrhages secondary to interaction between Desvenlafaxine and Clopidogrel. This case demonstrates that the reported decreased side effect profile of Desvenlafaxine may not extend to bleeding risk.

Case Report

A 61 year old female presented to Naval Hospital Jacksonville with a one month history of easy bruising, progressing to spontaneous, painful, and diffuse hematomas covering approximately 10% of her body. Her medications included Clopidogrel 75mg and Desvenlafaxine 100mg once daily, as well as Fiorinal and Aspirin as needed for headaches. Spontaneous bleeding ceased 24 hours after discontinuing Clopidogrel, Desvenlafaxine, Fiorinal and Aspirin. Given her history of difficult to control MDD and Transient Ischemic Attacks (TIA), therapy with both Desvenlafaxine and Clopidogrel was resumed with strict precautions against Aspirin use. Two days after discharge, patient presented to another local Emergency Department with recurrence of hematomas and new TIA symptoms. After evaluation by staff Hematologist, discontinuation of combination therapy, and subsequent monotherapy with Clopidogrel was recommended. This intervention resulted in resolution of symptoms.

Imagery

Photo 1:

Left Anterior Shoulder



Hematoma that developed over course of 30 minutes between initial evaluation by Family Medicine Intern and subsequent evaluation by Family Medicine Attending Physician.

Photo 2:

Left Ventral Forearm



Ecchymosis that developed as a result of gentle pressure applied to forearm during placement of peripheral intravenous catheter.

Photo 3:

Left Mandible



Ecchymosis noted at presentation to Emergency Department.

Photo 4:

Left Flank



Ecchymosis noted at presentation to Emergency Department.

Discussion

Selective Serotonin and Norepinephrine Reuptake Inhibitors (SNRIs) are known to increase the risk of bleeding in patients receiving concurrent anti-platelet therapy. This phenomenon is attributable to decreased platelet serotonin levels, which, combined with standard anti-platelet therapy, can lead to pathologic coagulopathy. Active metabolite formulations of these medications are being developed to reduce side effect profiles and drug-drug interactions. Our case demonstrates that the improved side effect profile of these new formulations may not extend to bleeding risk. Treatment remains discontinuation of the pathologic anti-platelet combination.

Conclusion

The prevalence of serotonin reuptake inhibitors as part of a patient's medication profile is steadily increasing in the United States. Newer SNRI formulations continue to present significant bleeding risks, particularly when combined with anti-platelet therapies. It is important for Primary Care Physicians to recognize the potential for interactions. Patients prescribed serotonin reuptake inhibitor agents and especially patient's in whom combination anti-platelet therapy is initiated warrant regular bleeding risk monitoring in both the acute and long-term setting.

The views expressed in this article are those of the author(s) and do not reflect the official policy or position of the Department of the Navy, Department of Defense, or the United States Government.

*Article and poster courtesy of Dr. Lennon