Are You Sure I've Seen You Before?: Instructor Guide

Title:

Are You Sure I've Seen You Before?

Author:

Robert B Tallitsch
Department of Biology
Augustana College
Rock Island, IL 61201-2296
RobertTallitsch@augustana.edu

Russell Bartt

Jeff Benson

Discipline:

Biological Sciences

Target Audience

Advanced, majors

Keywords

Anatomy, neuroanatomy, neuroscience

Length of Time/Staging

This problem is delivered in two parts. Each part will require approximately 20 minutes of class time. In addition, approximately four to six hours of out of class research will be required to solve the problem.

Abstract

Rachel is a 37-year-old female who works as an administrative assistant for a Fortune-500 company in downtown Chicago. It is Monday, and she is walking along the lakefront to work from her north-shore condominium. As she is walking south she notices the beginnings of an oncoming migraine headache. She notices a flashing aura in her peripheral vision. In addition, she is becoming increasingly sensitive to light. By the time she reaches her office she is unable to tolerate even normal sound, and is advised by her boss to 'head for home' and take the day off. Rachel's assistant (Charles) accompanies her during the cab ride home, and helps her pull the blinds in her bedroom and settle her into bed for the day. Rachel is advised by Charles to call the office if she needs anything.

Two hours later Charles receives a garbled telephone call from Rachel. She is agitated and very frightened. Charles advises her to remain calm, and tells her that he will be right over. Immediately after hanging up from Rachel's call Charles dials 911 and requests an ambulance at Rachel's address. He immediately hails a cab and meets the ambulance at Rachel's condo. She is immediately placed on oxygen and rushed to Northwestern Memorial Hospital.

Students are asked to correctly diagnose the patient and answer several related questions about the patient.

Date Submitted

7/28/2004

Date Published

7/12/2005

Format of Delivery

This problem is delivered in two parts. Additional information about the patient and the results of her clinical tests are revealed in part two of the problem, possibly requiring students to reassess their initial diagnosis

Student Learning Objectives

This problem was written with the following summative objectives in mind:

1. Develop an understanding of the 3-dimensional relationships of the circulation of the brain in general-cerebrum in particular.
2. Develop an understanding of the role of the thalamic nuclei in general, VPL in particular.

3. Develop an understanding of the processes involved in the processing of visual information, with particular emphasis upon the higher cortical functions of the visual system.

This problem was written with the following formative objectives in mind:

1. Increase overall problem solving skills, including the ability to define problems, gather and evaluate information, and develop solutions.
2. Develop effective knowledge acquisition skills.
3. Develop better team skills.
4. Increase communication skills.
5. Increase self-assessment skills.
6. Increase ability to assess the work of others.
7. Increase ability to identify, find and use appropriate resources.

Student Resources

In addition to their textbook, possible student resources include:

McGraw Hill Encyclopedia of Science & Technology REF Q 121 .M3 2002

Various Medical Dictionaries found at REF R 121

Gray's Anatomy REF QM 23.2 .G73 1995

Professional Guide to Signs and Symptoms REF RC 69 .P77 2001

Atlas of Human Anatomy REF QM 25 .N46 1997

The Merck Manual REF RC 55 .M4 1999

Magill's Medical Guide REF RC 41 .M34 2002

Instructor Resources

Instructor resources, in addition to the student's textbook, are listed under "Student Resources."

In addition, a possible delivery methodology is outlined in "Assessment Strategies."

Teaching Notes

Teaching notes suggesting a possible methodology for utilizing this problem are outlined in "Assessment Strategies."

Assessment Strategies

This problem has been utilized in Human Anatomy classes with an enrollment ranging from forty to eighty students. Assessment has been both summative and formative.

Summative Assessment:

Summative assessment has been broken down into two formats. One format involves evaluation of both the group and individuals within the group. The following procedure is followed in evaluating individual and group progress on the PBL:

On the day the PBL is assigned the class will break up into PBL groups and do some preliminary work on the problem. By the next class session each PBL group member must turn in an individual hard-copy preliminary report. The preliminary report must contain the following:

- Possible hypothesis of what is wrong with the patient.
- What you will need to find out in order to prove or disprove your preliminary hypothesis, and where you will look to find this information.
- Any terminology that is not understood must be listed and defined, and the source of the definition cited.
- It is expected that each member of the group will review all of the group's preliminary hypotheses prior to coming to class the day the preliminary reports are due.

On the day the preliminary report is due the second part of the problem will be handed out. The class will again break into PBL groups and do further preliminary work on the problem. In this session the group will now:

- Determine how the additional information has changed any or all of the preliminary hypotheses, and why.
- Determine the course of action the group will take in order to solve the problem.
- Divide up the work that needs to be completed in order to solve the problem. The group leader will then post, in the group's Public Folder, a listing of what task is to be accomplished by what group member.

At the next class session (after distribution of part 2 of the PBL) each group member will turn in an individual hard-copy secondary preliminary report. (A copy will also be posted in the Public Folder). This secondary report must contain the following:

- Statement as to how your preliminary hypothesis of what is wrong with the patient has changed, and why.
- What you will need to find out in order to prove or disprove your newly formed hypothesis, and where you will look to find this information.
- Any new terminology that is not understood must be listed and defined, and the source of the definition cited.

As published in the course schedule, each group is required to submit a final report at the state of the appropriate class period. (It would be advisable for the group to keep at least one backup copy on computer disc.) The group report is to contain at least the following:

- Hypothesis of the solution to the problem.
- Sound anatomical reasoning to substantiate your hypothesis.
- Citations for any and all sources utilized, including your textbook.
- PBL reports will be graded on the anatomical accuracy of the final solution to the problem, as well as the anatomical logic utilized to arrive at the final solution.

A second form of summative evaluation is inclusion of material covered in the PBL on a "standard" lecture examination. The anatomical objectives may be assessed in the form of objective or essay questions.

Formative Assessment:

Formative assessment is accomplished two times during the course: at midterm and at the end of the course. Students are asked to fill out a form that assesses team and individual performance twice during the term. Individual growth throughout the term is assessed only at the end of the term.

Solution Notes

Solution removed.

This problem is an adaptation of a problem entitled "Walking Like a Drunkard" in Neuroanatomy Through Clinical Cases. Sunderland, MA: Sinauer Associates, Inc. Publishers, 2002.