

CASE TEACHING NOTES

for

“Uretero What? A Systems-level View of a Pregnancy with Medical Complications”

by

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INTRODUCTION / BACKGROUND

This case study follows a year in the life of a successful career woman who is faced with a series of medical problems, both for herself and her unborn child. Part I of the case describes the woman’s life before she became pregnant and details her treatment for a precancerous condition that indirectly prompts her to become pregnant. Part II examines the first half of her pregnancy from the standpoint of obstetric care and prenatal monitoring. It is here that the case’s main character, Yvonne, learns that something is wrong with her unborn child. Part III of the case reveals the abnormalities in the unborn child determined through amniocentesis testing and follows with the preterm delivery. The case study concludes with details of the diagnostic and functional testing performed on the infant preceding corrective surgery for the congenital condition.

The purpose of this case study is for students to apply systems-level physiology as they explore a pregnancy with medical complications and discuss situations involving life-changing decisions prompted by modern medical technologies. Previous knowledge of the basics of the female reproductive system as well as renal and urinary tract anatomy and physiology would be helpful. However, the case is intended as a teaching tool through which new knowledge is gained. As part of that, students are expected to search for and find information from valid sources outside of class.

This case could be used in an advanced biology course at the high school level, in undergraduate courses in general biology, human anatomy and physiology, human health, human sexuality, medical ethics, sociology, or women’s studies. The case study also would be applicable to first-year medical students in a course in medical physiology as well as students in nurse practitioner, midwifery, or physician’s assistant programs.

Objectives

In working through this case, students:

- Learn aspects of gynecological care, prenatal care and diagnostic testing in a clinical context.
- Apply previous knowledge of anatomy and physiology in a case study using appropriate medical terminology.
- Acquire a working knowledge of urinary tract physiology and treatment for correction of urinary tract birth defects.
- Develop an understanding of current biomedical issues and pertinent ethical discussions relevant to all of society (e.g., HPV and other STDs, preterm babies, diabetes, cervical cancer).
- Critically assess the source and validity of reference materials used to research the discussion questions.

CLASSROOM MANAGEMENT

This case is ideally arranged for a Problem-Based Learning (PBL) approach where students receive the case in parts and work in teams over a period of days to answer the questions associated with the case. As they receive each part of the case, the students in their teams first identify what they know, then determine what they need to find out about and divide up responsibility among the members of the team for researching those items before the next class. For example, there are numerous medical terms used in the case that students need to define and understand in order to analyze the case.

The case may be taught in a variety of health-related courses, with the terminology modified appropriately. Depending on the level of the students, the instructor may discuss ways to research the answers to the case's questions, such as using research articles and reviews found using PubMed on the National Library of Medicine's website at <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi> as opposed to limiting their search for information to popular press articles, websites, or biology textbooks.

ANSWER KEY

Answers to the questions posed in the case study are provided in a separate answer key to the case. Those answers are password-protected. To access the answers for this case, go to [the key](#). You will be prompted for a username and password. If you have not yet registered with us, you can see whether you are eligible for an account by reviewing our [password policy and then apply online](#) or write to answerkey@sciencecases.org.

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