

2011 Webcast Audio Seminar Series

The Use of E-Learning in Medical Education



Overview

- Mechanics of lecture recording
- Applications
- Pedagogical considerations

“Podcast”



Lecture Capturing and Other Streaming Video Applications

Peter Anderson
University of Alabama at Birmingham



Thanks to:

- Peter de Jong
- Julie Hewett
- Richard Feinberg
- Jim Fishback
- Kristina Panizzi Woodley
- Kenneth Hurd
- Sloan Consortium

“Podcast”

- Multimedia files distributed over the internet using syndication feeds for playback on mobile devices or PCs.

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- **NOT** just for iPod - “**Playable On Demand**”
 - iPod
 - Media Player
 - Blackberry
 - Cell Phone
 - PC

Speaking of iPods



Speaking of iPods

- Vinnie Chieco – freelance copy writer
- Name for iPod



Vinnie Chieco - Name for iPod

- *2001: A Space Odyssey*



Vinnie Chieco - Name for iPod

- *2001: A Space Odyssey*



“Open the pod bay doors, HAL.”

“Podcast”

- Audio or video files
 - So Vodcast is not necessary
- RSS feed (**R**eally **S**imple **S**yndication)
 - Download files to your playback device
- “Podcatching” – podcast client
 - iTunes, Juice, Zune, etc.

Podcast Applications

- Lecture recording

Podcast Applications

- Lecture recording
 - Record regular lecture for review

Podcast Applications

- Lecture recording
 - Record regular lecture for review
 - Record lecture ahead of time

Podcast Mechanics

- Audio recording

Podcast Mechanics

- Audio recording
 - Windows sound recorder, audacity

Podcast Mechanics

- Audio recording
 - Windows sound recorder, audacity
- Slide recording

– MS PowerPoint narration	- Echo360
– Captivate	- CourseCast
– Camtasia (Relay)	- Tegrity
– Adobe Presenter	- MediaSite

Podcast Mechanics

- Audio recording
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– MS PowerPoint narration	- Echo360
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– Camtasia (Relay)	- Tegrity
– Adobe Presenter	- MediaSite
- Video Recording
 - Bb Wimba
 - Adobe Connect

Lecture Capture

- Streaming audio or video
 - “Streaming video is content sent in compressed form over the Internet and displayed by the viewer in real time. With streaming video or streaming media, a Web user does not have to wait to download a file to play it. Instead, the media is sent in a continuous stream of data and is played as it arrives.” (definition from *whatis.com*)



Lecture Capture

In 2009 approximately \$50 million spent in the “lecture capture/podcast” market.

This figure is predicted to triple by 2016.

Podcast Considerations

- Software

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- Software
- Storage/delivery

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- Software
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- Network

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- Software
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- Copyright

Podcast Pedagogy

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Something more than just a recorded lecture - or a "course cast"

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from: *Real Genius* (1985)

Podcast Pedagogy

"Podagogy"



Podcast Pedagogy

- Lectures - "Didactic Dump"

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- Value Added / Interactivity

Podcast Pedagogy

- Lectures - "Didactic Dump"
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- Answer Questions

Podcast Pedagogy

- Lectures - "Didactic Dump"
- Value Added / Interactivity
- Answer Questions
- Propose Problems to Students

Pedagogically Sound Podcast Ideas

- Lectures
- Laboratories
- Discussion/Review Sessions

Rich Feinberg, New Jersey Medical School

Preview & Review Podcasts

- Preview Podcast
 - Max 3 minutes
 - Focus on Learning Objectives
- Review Podcasts
 - Max 7 minutes
 - Provide framework for summarizing and studying the lecture



<http://iamse.org/>

Lectures

1. Record regularly scheduled lecture
2. Record Lecture for future presentation
3. Record "thought provoking question or comment" prior to lecture
4. Lecture summary podcast

14th Annual Meeting

*International Association of Medical Science Educators
New Orleans, July 2010*

PRODUCING OBJECTIVE CENTERED PODCASTS FOR PREVIEW & REVIEW: A NOVEL FACULTY DEVELOPMENT TOOL FOR EFFECTIVE LECTURING

Richard N. Feinberg, Audrey McNeil
New Jersey Medical School, Newark, NJ, 07101, USA

JIAMSE

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Volume 20-2s 221

David Miller, UCONN Dept. Psychology
"Precasts" & "Postcasts"

- **Precast**
 - Bullet points with narration of main points
- Podcast of Lecture
- **Postcasts**
 - Summarizes main points of lecture
 - Incorporates student questions
- **Week End Student Q & A Session**
 - Records student Q & A session

Laboratories

- Record histopathology laboratory preparatory sessions (self study)

Jim Fishback, KUMC Pathology
 “Podcast Laboratories”

Combine “podcasts” with Virtual Microscopy to guide student histopathology laboratories.

IAMSE Meeting 2010 Pre Conference Workshop
 Virtual Microscopy with Digital Slides: Now, How, Wow

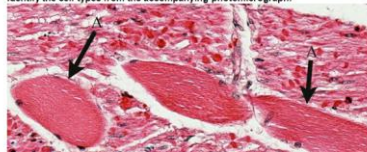
Histopathology Laboratory Muscle and Soft Tissue

Module:	Musculoskeletal
Format:	Laboratory
Time/Date:	1:00-3:00 (Groups 11-20), 3:00-5:00 (Groups 1-10), Tuesday, 25 August 2009
Location:	Orn- Major 4 th floor Labs
Responsible Faculty:	Jim Fishback (jfishbac@kumc.edu) Robert M. Klein (rklein@kumc.edu)
Group Activity:	No
Professional Attire:	No

Muscle histology was taught during the Foundations module in year one. You should review that laboratory using either your personal atlas, but preferably with the Aperio Virtual Microscope so that you can move around the slides of the 3 types of muscle. This histopathology laboratory will focus on muscle and soft tissue diseases.

We will begin with a quiz:

Identify the cell types from the accompanying photomicrograph:



“KUMC Podcast Laboratories” Case Presentations

1. Poliomyelitis

Diagnosis: Poliomyelitis, spinal cord and skeletal muscle

Source: University of Kansas School of Medicine, Autopsy Service

History: The patient was a 15-year-old girl who was admitted 7 1/2 months prior to death because of quadriplegia, fever, stiffness of the neck, loss of voice, and difficulty in breathing. A week before admission she complained of stiffness and pain in her neck. The following day she developed a fever and lost the use of her arms and hands. Her symptoms continued to progress, and she was admitted on the sixth day of her illness. Soon after admission, fluoroscopic examination showed total paralysis of the right hemidiaphragm.

The patient's hospital course was marked by a constant state of mild anoxia with considerable dependence in the early hospital stay on a respirator. There were several episodes of unexplained fever when the white blood count rose to 15,800 or above. Vigorous treatment with antibiotics brought a remission of the fever. The heart rate ranged from 120-150 per minute throughout the hospital stay.

“KUMC Podcast Laboratories”

Microscopic Description ([Polio_with Muscle Atrophy.svs](#), Clinical Correlation: [Acute polio_spinal_cord.svs](#)) Microscopically there was almost total loss of the anterior horn cells of the spinal cord above its extreme lower portions. The muscle of the right rectus, right intercostal and right diaphragm showed atrophy and proliferation of the sarcolemma. No cerebral lesions were found.

The slide includes a cross section of spinal cord and a section of atrophied rectus abdominis muscle. The number of anterior horn cells and evidence of inflammation should be particularly noted. Intercostal muscles sampled revealed almost complete atrophy of all fibers; the rectus abdominis muscle was chosen for the collection so that normal and atrophied fibers could be compared.

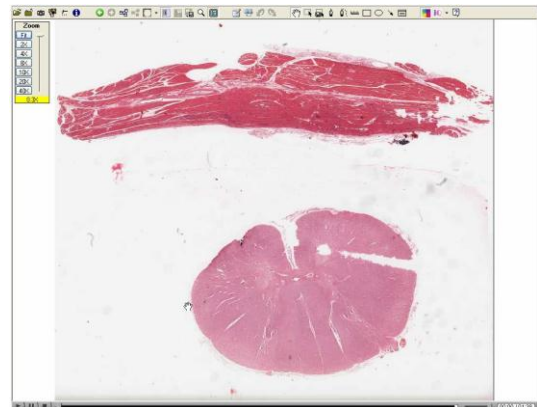
Clinical Correlation (Optional): Another slide of spinal cord from a case of acute polio is included in the folder. If you look at the neurons of the anterior horn, you will note marked inflammation. Some of the neurons are completely engulfed by macrophages, a process known as *neurophagia*. This explains their absence in the chronic polio case you just studied. We will review this process again during the Infectious Disease module. See also Robbins, Coltran and Kumar, [Chapter 28](#).

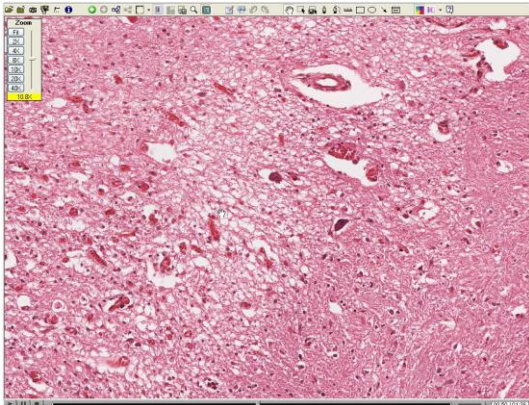
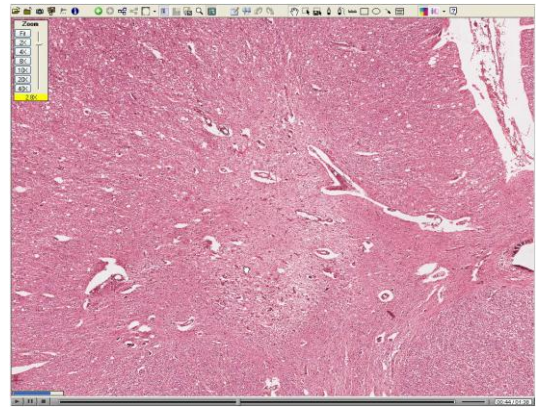
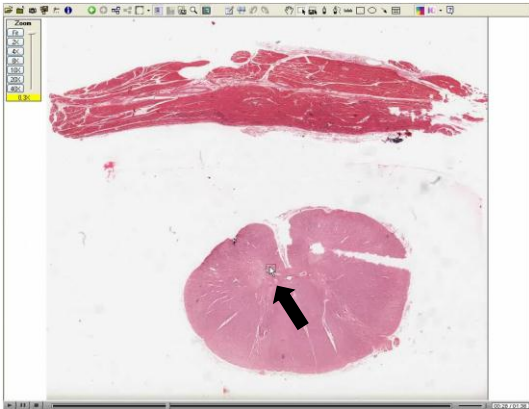


Slidefour

Review Questions:

Use the following website to answer the following questions:
http://www.ninds.nih.gov/disorders/post_polio/detail_post_polio.htm#4513172
 1. What is post-polio syndrome (PPS)?
 2. How is PPS diagnosed?





Podcast Cases

1. Record case presentation (can include video of patient exam, images, auscultation, etc.)
2. End case with questions for students to ponder
3. Hold in-class session to review case
4. Record post-case overview

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Summary



Summary

- Recording instructional materials for:
 - Missed session or review
 - Instead of F2F
 - Enhance or add-to F2F sessions
 - Independent study
 - Prep for F2F sessions
 - Summary after F2F sessions

Summary (cont.)

- Hardware, software, network concerns
- Storage & delivery
- Faculty Development

Summary (cont.)

- It's all about the Pedagogy



Good teaching may overcome a poor choice in the use of technology, but technology will never save bad teaching; usually it makes it worse.

- Tony Bates
(*Technology, Open Learning & Distance Education, 1995*)



International Association of Medical Science Educators

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Questions/Discussion



Resources

- Educause: 7 Things You Should Know About Lecture Capture
<http://www.educause.edu/ELI/7ThingsYouShouldKnowAboutLectu/163555>
- Campus Technology. Capturing the Market by Rama Ramaswami <http://campustechnology.com/articles/2009/06/01/lecture-capture.aspx>
- Podcasting and Pedagogy by Peter Rawsthorne.
www.rawsthorne.org/docs/Podcasting18Oct2006.pdf
- Live lecture versus video podcast in undergraduate medical education: A randomised controlled trial. Schreiber BE, Fukuta J, Gordon F. BMC Medical Education 2010 10:68
<http://www.biomedcentral.com/1472-6920/10/68>
- Teaching more by lecturing less. Knight JK, Wood WB. Cell Biol Educ. 2005 4:298-310. PMID: 16341257