

Creating a Web Based Ophthalmic Pathology Course Using Annotated Virtual Microscopy Slides

Jason Ethington MD^{1,2}, Jay Perlman, MD, PhD, ^{1,2}





Introduction

- •Virtual microscopy was originally used as a way to post and transmit microscope images over computer networks allowing clinical collaboration among colleagues across geographical locations.
- •Virtual microscopy is now being used as an educational tool in the teaching of pathology in a variety of settings.
- •With the synthesis of microscopy and digital technologies, it is now possible to achieve image resolution approaching what is seen under a microscope.
- •We are developing a comprehensive, web based database of ophthalmic pathology slides with instructive annotations that provides an educational experience simulating viewing pathology slides under a microscope.

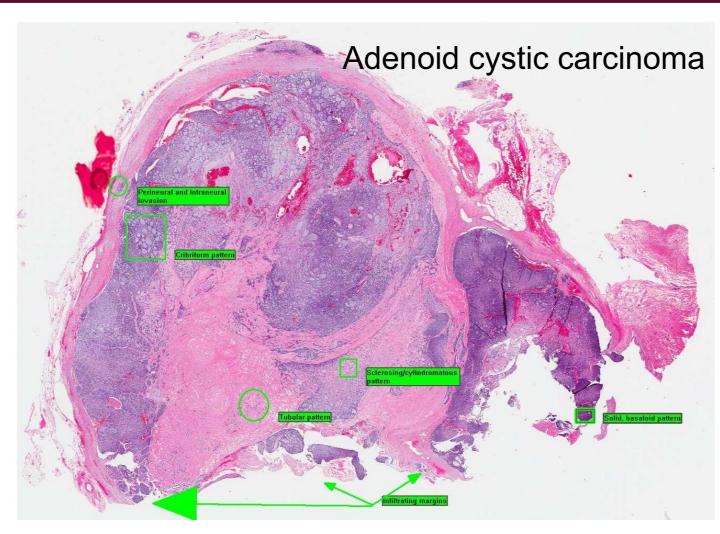
Website Start Menu

+ http://www.slidehosting.com/List.php?TableName=Slide		♂ Q - Google		
pectrum				Ø aper
r: AAOP, Role: Basic_SildeHosting t Login Time: 2010-10-31 17:14)		Projects Specimens Digital Slides Analysis SecondSlide	Administrative Help	Font Size Log off
gital Slides				
w Images Open Data Analyze Assign To Annotations Label Thumbnali	Description ↓ Other	Diagnosis	Page 1 of	f 16 (306) (<u>Previous</u> <u>N</u> Data Group
84-SOD Ball to mayor Leach brotoch	Uveal Tract	Choroidal Hemangioma	<u>36102</u>	AAOP
Test / 1	Uveal Tract	Sympathetic Ophthalmia	<u>36101</u>	AAOP
B Littington	Uveal Tract	Ciliary Body Leiomyoma	36100	AAOP
SOR 4339 Enghane Can Rancoun State 6	Uveal Tract	Choroidal Rupture with Choroidal Neovascular Membrane	36099	AAOP
The second of th	Uveal Tract	Epithelioid Choroidal Melanoma with Vortex Vein Extension (Melanin Bleach)	36092	AAOP
Schools and Constitution of Co	Uveal Tract	Choroidal Melanoma with retinal invasion	36091	AAOP
Capacia Ca Capacia Capacia Capacia Capacia Capacia Capacia Capacia Capacia Capacia Capacia Cap	Uveal Tract	Choroidal Melanoma with Intrinsic Microvascular Loops & Networks (PAS w/o Hematoxylin)	36090	AAOP
E 2000	Uveal Tract	Choroidal Melanoma with Intrinsic Microvascular Loops & Networks	36089	AAOP
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Uveal Tract	Juxtapapillary Choroidal Melanoma with Optic Nerve Invasion	36088	AAOP
Action City of Action	Uveal Tract	Cilio-choroidal Melanoma with Anterior Chamber Angle Invasion	36087	AAOP
			Display	20 Records Per F

Methods

- •Ophthalmic pathologists from various universities contributed slides to this effort under the auspices of the American Association of Ophthalmic Pathologists (AAOP).
- •Using the Aperio© slide scanner a library of virtual ophthalmic pathology images with all the functions of a laboratory microscope was created.
- •After the glass slides were converted into a digital format the images were stored on a virtual microscopy website (www.slidehosting.com).
- •The slides include descriptive annotations that will help the user identify and understand pertinent pathologic findings.
- •Residents from contributing programs were surveyed for feedback regarding educational value of the website.

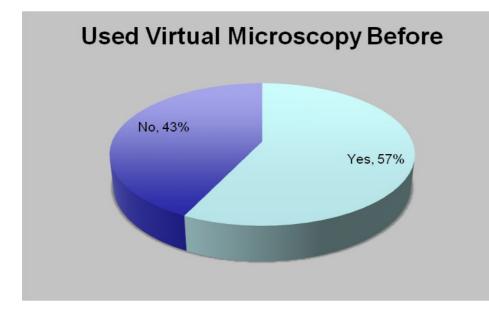
Example Slide

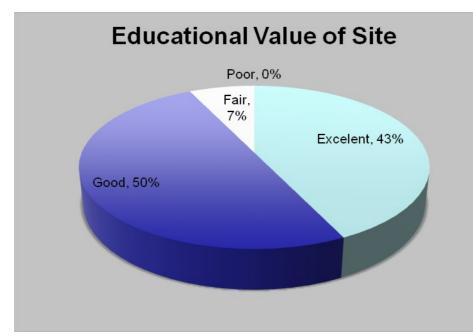


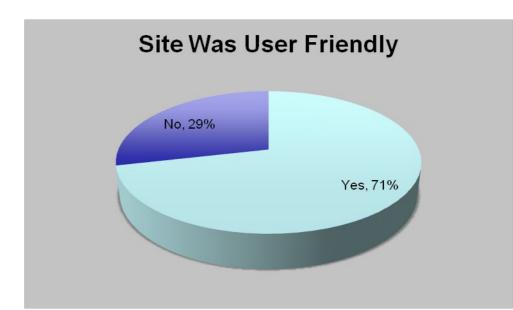
Results

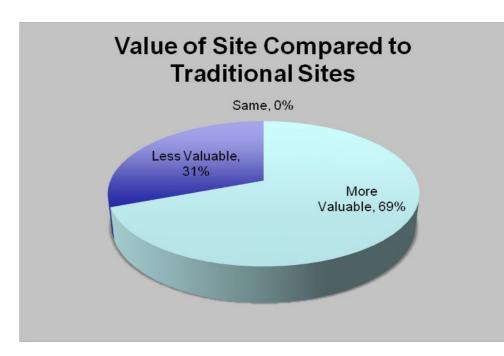
- •The ophthalmic pathology virtual microscopy website has been developed at www.slidehosting.com. Access to the site can be obtained utilizing username "aaopath" and password "aperio".
- •One hundred and fifty five slides have been posted including representative slides from the conjunctiva, cornea, eyelid, glaucoma, nasolacrimal sac, orbit, and uveal tract.
- •Annotations and additional slides are continually being updated and added to the site in order to create a comprehensive virtual microscopy resource for ophthalmology education.

Survey Results





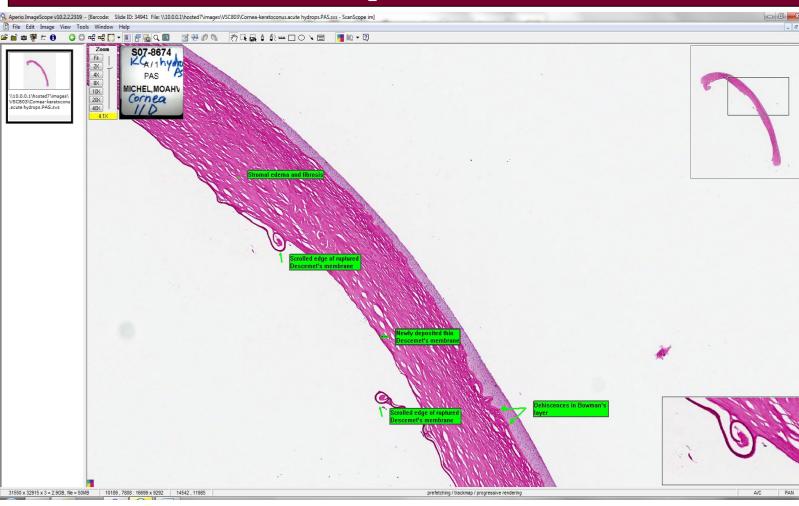




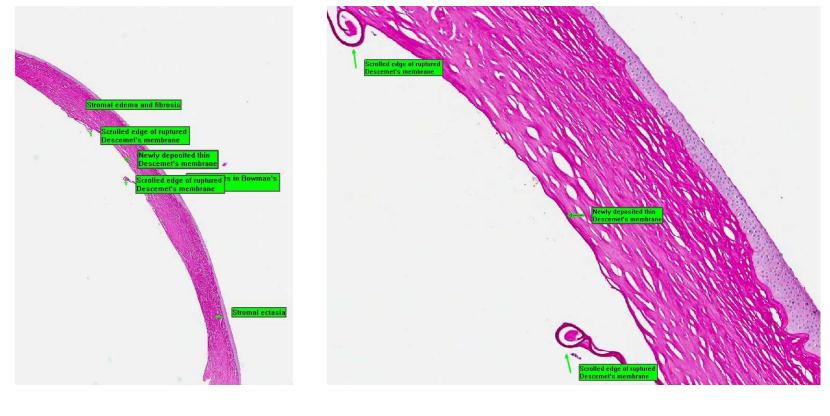
Conclusion

- •Virtual pathology is a useful educational tool for the teaching of ophthalmic pathology.
- •We have created a new web-based educational tool for the teaching of ophthalmic pathology.
- •The website continues to be expanded and updated to create a standard tool for ophthalmology and pathology training.

Example Slide



Keratoconus with Hydrops



Acknowledgements:

This work was supported by The Richard A. Perritt Charitable Foundation and the Department of Veterans Affairs.