

Internet-Based Resources

Maximizing the training of resident cataract surgeons.

BY ANDREW P. DOAN, MD, PhD

Technological advances have made being a surgical educator more exciting. Thanks to the Internet, it is possible to share information, videos, sounds, and educational resources at the speed of light. The most significant benefit of these materials is the low cost of their mass dissemination. This article discusses the advantages of using Internet-based resources in the training of residents, and it describes popular Web sites and educators who have provided educational material online for free.

THE ADVANTAGES OF INTERNET-BASED RESOURCES

Medical education is in evolution.¹ The Accreditation Council for Graduate Medical Education has mandated the documentation of residency competencies. At the same time, faculty members are under increasing pressure to see patients in the clinic, maximize their surgical volume, develop research programs, and create validated tools to assess resident physicians' competence.

Internet-based resources from experts in a given subject area can form a valuable part of the curriculum for resident surgeons. An introduction to the creation of the capsulorhexis might include (1) a peer-reviewed article on the pearls and pitfalls of the capsulorhexis,² (2) an online textbook that discusses various techniques for success, and (3) downloaded narrated videos that demonstrate different approaches to the capsulorhexis' creation. Through The Ophthalmic News & Education (O.N.E.) Network available from the AAO (see the article by Warren E. Hill, MD, on page 49), for example, faculty members can share and refine educational tools, ideas, and resources instead of reinventing them. The Internet makes this collaboration global.

Technologies based on the Adobe Flash Player (Adobe Systems Incorporated, San Jose, CA) synchronize traditional PowerPoint (Microsoft Corporation, Redmond,

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WA) presentations with sound. Faculty members can digitally record their lectures during grand rounds or at conferences to serve as narration for PowerPoint presentations and then make these tutorials available to students via the Internet. The portability of videos, which can be downloaded to players such as an iPod (Apple Inc., Cupertino, CA), and the accessibility of online resources enable residents to view these materials on demand. As an educator, I have found that residents learn more when educational resources are available when they most need the skill (ie, 1 week before their first cataract surgery).

ONLINE ACADEMIC RESOURCES FOR TEACHING CATARACT SURGEONS

Eyetable.net

The publishers of *Cataract & Refractive Surgery Today* recently launched Eyetable.net (<http://www.eyetable.net>). Created by a panel of experts, this Web site is designed to educate ophthalmologists through the archiving and sharing of high-quality video. Some of the surgical areas covered include cataract, refractive IOLs, laser vision correction, and cornea.

The O.N.E. Network

Available at <http://one.aao.org>, The O.N.E. Resident Educational Center allows academic programs to share existing educational resources and ideas for teaching

cataract surgeons. The O.N.E. Network also provides users with access to textbooks, peer-reviewed articles, and videos related to cataract surgery. Access requires membership in the AAO and an online subscription fee.

EyeSpaceMD and EyeMail

In mid-April, the ASCRS launched EyeSpace MD (<http://www.eyespacemd.org>), an education Web portal. It will feature presentations from the organization's annual symposium as well as other meetings held around the world. The site will also offer online discussion groups and video and image libraries. Users may contribute to the site's content.

The ASCRS' EyeMail service enables surgeons to consult with each other almost instantly on cataract cases, complications, and more. ASCRS members may access the resource through the organization's Web site at <http://www.ascrs.org>.

Cataract Board Review

Thomas Oetting, MS, MD, Program Director at the University of Iowa in Iowa City, developed an educational resource to help resident cataract surgeons learn the fundamentals of intraocular phacoemulsification (see his article on page 73). This resource is offered for free at <http://webeye.ophth.uiowa.edu/DEPT/tutorials/cataract/index.html> and is presented in a PowerPoint lecture format.

Textbooks

Dr. Oetting also wrote an open-access textbook, *Cataract Surgery for Greenhorns*, for resident surgeons who are learning the key steps in cataract surgery. Narrated video segments supplement the text. Residents can watch how surgery is performed at <http://www.medrounds.org/cataract-surgery-greenhorns>.

Edited by David Chang, MD, and available from *CRSToday*, the open-access *CRST Virtual Textbook of Cataract Surgery* includes an introduction to surgery, cataract surgical techniques, and ethics. This comprehensive collection of academic articles written by expert surgeons is available at <http://www.crstoday.com/cvt>.

Other Sources of Video

Cataract surgeons are sharing their surgical videos for free on Google Video and YouTube.com, a Web site that Google owns and operates. Users can locate presentations with keywords and title tags. Because these videos are not peer reviewed, it is advisable for educators to confirm their accuracy before sharing the videos with their residents. Google Video and YouTube.com can also be helpful sources for video clips to use in lectures.

At <http://www.eyepodvideo.org>, users may view or

download narrated video segments that are formatted to play on portable video players. Videos offered for download are free and were created by expert cataract surgeons.

Podcasts

"Audio and video components greatly enhance the training of future physicians."

As Seen From Here (<http://www.asseenfromhere.com>) was founded by Joshua Young, MD, from New York University's Department of Ophthalmology. Dr. Young is a pioneer in the delivery of high-quality ophthalmic education via the Internet through free podcasts. These audio and video clips are available to anyone with an Internet connection and may be downloaded when users are ready to listen to them. Audio programs may be reviewed online as well. Podcasts include reviews of articles, interviews of expert surgeons and academic leaders in ophthalmology, and programs on surgical techniques.

CONCLUSION

A variety of high-quality resources—many of them free—are available to educators and cataract surgery residents on the Internet. In my experience, these audio and video components greatly enhance the training of future physicians. ■

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

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1. Golnik, KC. The 2006 Straatsma Award Lecture: The (R)Evolution in Medical Education. *Journal of Academic Ophthalmology*. 2008;1:8-10.

2. Little BC, Smith JH, Packer M. Little capsulorhexis tear-out rescue. *J Cataract Refract Surg*. 2006;32:1420-1422.