Recording Video Endoscopy Using A Portable Media Device: A Novel Solution In The Age Of Digital Media

Tucker M. Harris, M.D., and Parul Goyal, M.D.

Department of Otolaryngology, SUNY Upstate Medical University
and
Section of Otolaryngology, Syracuse VA Medical Center
Syracuse, New York

Introduction

Endoscopy is an integral part of the evaluation of a variety of otolaryngology-related complaints. Recording and archiving endoscopic findings is useful for a variety of reasons: the ability to compare examinations over time; as a contribution to medical research; and to improve colleague, trainee, and patient education.1–7

The cost of video recording and archiving units available from manufacturers of endoscopes is often substantial.8 In this report, we describe the use of a portable media recorder as an affordable solution for the recording and archiving of endoscopy findings.

Methods

The portable media device can be used to record images or video from any camera attached to an endoscope. A portable media recording device (Cowon A2 Portable Multimedia Player, Cowon Systems, Inc., Korea) is connected to one of the video output lines of the camera box. The device (Figure 1) has the ability to capture video at excellent resolution (480 x 272) and saves the recordings in an advanced systems format (.asf) on its hard drive. Files are automatically labeled with the date of the endoscopy. Videos may be viewed immediately on the player. Videos may also be transferred to a computer via a universal serial bus (USB) port, archived in folders, and grouped by patient name. Once archived, the images can be used for comparisons with future visits. The videos can also be edited and incorporated into presentations (Figure 2).

Discussion (Continued)

Digital advances in consumer electronics have made it easier than ever before to record endoscopic findings for patient care, education, and research purposes. The portable media device described in this report is an easily available and affordable recording solution for use in office, inpatient, and emergency room settings.

Conclusions

This equipment can also be used as part of a portable system with a camera box and light source on a cart (Figure 3). The display of the media recording device can be used to visualize the endoscopy as it is being performed. The endoscopy can be recorded so that members of the team may review the findings with each other or with patients (Figure 4).

Discussion

Endoscopy has greatly enhanced the ability to diagnose and treat a variety of otolaryngologic problems. Benefits of recording endoscopic examinations have been detailed by others:1–7 enhanced ability to track examination changes over time; enhanced quality of research; improved education for colleagues, trainees, and patients. Other digital endoscopy recording devices are available, but can be expensive and bulky. Analog recording devices are less expensive, but sacrifice image quality and the ability to easily transfer, archive, and edit videos.8 We have found that the portable media recorder device described in this report allows for a low cost, portable, and easy-to-use alternative.

The media recorder described in this report works well for several reasons. It has the ability to record audio and video with a line-in record feature, which allows flexibility in using the device with cameras made by different manufacturers. Additionally, no extra bulk is added to the hand-held portion of the endoscopic equipment. This also avoids the need to purchase additional endoscope couplers or adapters.

The device has a large hard drive, allowing for the capture and storage of multiple video files in a digital file format. The device does not rely on the use of other media such as compact discs or digital video discs (CDs or DVDs) for recording or playback, reducing the amount of overhead and clutter. Avoiding the use of discs also saves time in many steps of the recording and archiving process.7 Media files are quickly transferred to a computer via a USB port, and this saves time over transferring files form a CD or DVD drive.

Videos can be recorded in several resolutions and are generally compact files. The digital files captured by the device lend themselves well to transfer to other providers via e-mail or rapid wireless transfer. The files are easily edited with a variety of video-editing software packages.

The size and ability to connect to a variety of video sources make the device very portable, facilitating use of the device to record endoscopies in many locations. The device is portable, but has sufficient screen size, clarity, and resolution to act as an image viewing monitor. This can avoid the need for a large monitor when this device is used as part of a mobile endoscopy cart.

References