

CD conversions

Digital format adds convenience to audio books

Bookmarking, variable reading speed, computer enhancements add appeal for potential users



user to skip chapters quickly and easily.

- The **speed** of reading can be sped up or slowed to match the user's comprehension level without altering the voice pitch.

- When played on the computer, some CDs will be **enhanced** to display text simultaneously, allowing visually impaired students to follow along with the spoken word.

The organization is currently retrofitting its studios to handle the new digital recording—32 studios should be putting out new and old recordings early next year, including re-recordings of books previously only available in analog format.

In the meantime, several manufacturers have talking book players available to allow

users to take advantage of these books. Visu-Aide's Victor Reader is offered in three styles—Classic, Pro, and Soft—giving users a choice that suits their particular needs.

Victor Reader Classic allows basic navigation through novels, magazines, and other “leisure” readings in a portable manner. In

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Audio books have long been a means for people with little time to garner the benefits and enjoyment of reading while on the road, working out, or just relaxing.

Along with the mainstream public's use of audio books, blind and dyslexic individuals also have reaped the benefits of the product—so much so that nonprofit organization Recordings for the Blind and Dyslexic has put more than 83,000 textbooks on tape over the past 50 years.

However, audiotapes can be cumbersome (some textbooks require as many as a dozen tapes to handle their subject matter) and require serious navigational skills to rewind and review important subject matter.

Enter the latest technology—digital audio books. The organization is now in the

throes of recording textbooks onto CDs that can be played on personal computers or on other playback devices.

The CDs offer users a variety of advantages over their analog tape predecessors:

- Almost **40 hours** of recorded text can be placed on one CD, making them far less cumbersome than a stack of cassette tapes.

- **Chapters** are not marked by “beeps”—no fast forwarding or rewinding to get through a review session. Instead, pressing the advance button on the player allows the

Take-Home Message

Digital audio books (CDs) offer several advantages over analog tapes, including more recording time, easy chapter skipping, adjustable speed, and even computer enhancements.

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Treatment

Limbal transplantation option for pterygium

Limbal epithelium in conjunctival graft may help anatomically, functionally

By Lynda Charters

Reviewed by Mashhoor Al-Fayez, MBBCh, FRCS

Jeddah, Saudi Arabia—Effective treatment of pterygium has been a clinical problem because of the high recurrence rates associated with various treatment modalities. Limbal transplantation has proven to be more effective than free conjunctival transplantation to treat recurrent pterygia, according to Mashhoor Al-Fayez, MBBCh, FRCS.

“Despite the various surgical procedures that have been described for the treatment of pterygium, recurrence remains a significant problem after surgical excision,” said Dr. Al-Fayez, assistant professor of ophthalmology, King Abdul Aziz University Hospital, and medical director, Eye and Laser Centre, both in Jeddah, Saudi Arabia. “Recurrence rates range from 24% to 89% after simple excisions with bare scleral technique.

“Use of beta-irradiation and topical application of mitomycin-C (Mutamycin, Bristol-Myers Oncology) have decreased the recurrences to between 0% and 12%; however, serious complications are associated with these treatments,” he noted. “A low intraoperative dose of mitomycin-C effectively reduced recurrence while diminishing the risk of serious complications. However, the long-term risks associated with the use of mitomycin-C are still unknown.”

Another advance was the use of conjunctival autografts reported by Kenneth Kenyon, MD, of Boston, with a recurrence rate of 5.3% in low-risk populations. In addition, the inclusion of limbal epithelium in the conjunctival graft was hypothesized to be more beneficial anatomically and functionally, he explained.

Dr. Al-Fayez and colleagues tested the efficacy and safety of including the limbus in conjunctival grafts to treat advanced and recurrent pterygium in a prospective randomized study (86 eyes, 86 patients). All patients were under 40 years of age and were followed for a minimum of 36 months.

Take-Home Message

Despite various treatment options for pterygium, there is a high recurrence rate. Limbal transplantation has been shown to be more effective than free conjunctival transplantation to treat recurrent pterygia.

For the purposes of the study, recurrence of pterygium was defined as any fibrovascular proliferation that encroached more than 1 mm onto the cornea from the original site of the pterygium.

The surgical technique was based on that of

Dr. Kenyon and colleagues. While removing the pterygium, attention was paid to excision of all episcleral scarring, use of minimal cautery, and avoidance of excessive delamination of the cornea. After the pterygia were excised, patients were randomly assigned to undergo either free conjunctival autograft transplantation or limbal autograft transplantation. Conjunctival grafts were harvested from the superotemporal conjunctiva.

“For those patients assigned to limbal conjunctival transplantation, and before harvesting the conjunctival flap, an adjustable diamond knife set to a depth of 100 μ m was used to create a superficial circumferential incision in the cornea 0.5 mm from the limbus,” he said.

Once the conjunctival portion was dissected, limbal dissection was carried forward to include limbal epithelium with the conjunctival graft. The free graft was placed in the correct orientation onto the scleral bed using a paper template and sutured with interrupted 10-0 nylon and 10-0 Vicryl sutures, Dr. Al-Fayez said.

Postoperatively, pressure patches were used for 72 hours and steroids were prescribed for 2 months.

Dr. Al-Fayez reported results from 79 patients, 36 who were assigned to undergo free conjunctival transplantation (group A, 24 with advanced primary pterygia and 12 with recurrent) and 43 who underwent limbal

conjunctival autograft transplantation (group B, 28 with primary pterygia and 15 with recurrent pterygia).

“The **visual acuity** improved by two lines or more in 28% of patients in group A and in 37% of those in group B,” he said. “Of the 36 patients in group A, six pterygia recurred, two with primary and four with recurrent pterygia; three recurred within 1 year, one after 26 months. Four recurrences needed no further interference and the remaining two underwent limbal conjunctival autograft transplantation. Of the 43 patients in group B, no pterygia recurred.”

When the investigators compared the recurrence rates between the two groups, regardless of the type of pterygia, a statistically significant difference was observed ($p = 0.012$). When they compared recurrences among the recurrent pterygia, four occurred in group A and none in group B, also a statistically significant difference ($p = 0.028$).

“In our study, we found limbal conjunctival autograft transplantation more effective than free conjunctival autograft alone in the prevention of recurrence after pterygia,” Dr. Al-Fayez said. “Although no recurrences were seen in the group of patients who underwent limbal conjunctival autograft, both techniques were effective in cases of advanced primary pterygia.

“In the cases of recurrent pterygia, limbal conjunctival autograft was statistically significantly more effective in preventing recurrence than conjunctival autograft,” Dr. Al-Fayez concluded. “Further study of a larger group of patients is required to support these findings.” **OT**

FYI

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Dr. Al-Fayez has no proprietary interest in any aspect of this study.

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addition, it does double duty as a CD player when the user wants to listen to music.

Victor Reader Pro is designed for simple navigation through textbooks and other complex structured books. Users can navigate, bookmark, and skip much easier than they can with the Classic unit.

The company's Soft version is simply software that allows personal computers to navigate the most complexly structured books. Soft offers users the ability to read text onscreen and take notes on the computer as well as listening to the text.

Plexor Corp. is another company making digital talking book players. The com-

pany's PlexTalk Pro! was introduced in 1998 as the world's first desktop digital talking book player—the Pro! allows users to navigate quickly through simple books.

And Plector is taking the next step in digital recording—its PlexTalk Digital Talking Book Recorder will allow users to record their own digital books. The device, planned for release in the first quarter of 2002, gives users the ability to transfer their analog recordings to a digital format, offering savings over having to purchase new, digital material.

The device allows users to record their own books (think volunteer readers who now can create digital versions of their readings for distribution). It features page and bookmark features that allow the recorder and the user to mark and jump to any page instantly.

And because of its portability, the Talking Book Recorder can be a boon to students and professors who wish to record classroom lectures for future review. Lectures can be timed with portions of required textbook readings that are already available in Digital Book Format, for a complete educational experience.

The conversion from analog to digital format will help ensure the quality and clarity that go into conventional recordings are now available for visually impaired individuals. We will have the capability to develop more books, lectures, and other information than ever before into usable material for the visually impaired. **OT**

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