Chicago Dental Society News

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CHICAGO DENTAL SOCIETY
PRESS MATERIAL

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FACT SHEET

124th Annual Midwinter Meeting
Chicago Dental Society

February 19-22, 1989

"United Through Knowledge"

Background

- Sponsored by the Chicago Dental Society
- One of the oldest and largest dental conclaves in the world
- More than 27,000 Dental and Auxiliary personnel from 26 countries will attend
- More than 150 lectures and panels presented over

Closed Circuit Television

Live, closed circuit television will broadcast from the clinical facilities of Northwestern University Dental School directly to an audience at the Marraiott Hotel. Internationally prominent clinicians presenting via the closed circuit medium include: Francois Duret of Marseilles, France presenting, for the first time live in the United States, his "CAD/CAM System" of tooth restoration; Myron Nevins of Boston, Massachusetts demonstrating periodontal techniques; David Garber of Atlanta, Georgia demonstrating esthetic and

more than 150 lectures and panels are: Implants - an alternative to dentures; Computer-assisted design/manufacturing in dentistry; Cosmetic Dentistry; Insurance; Oral Medicine; and Infection Control.

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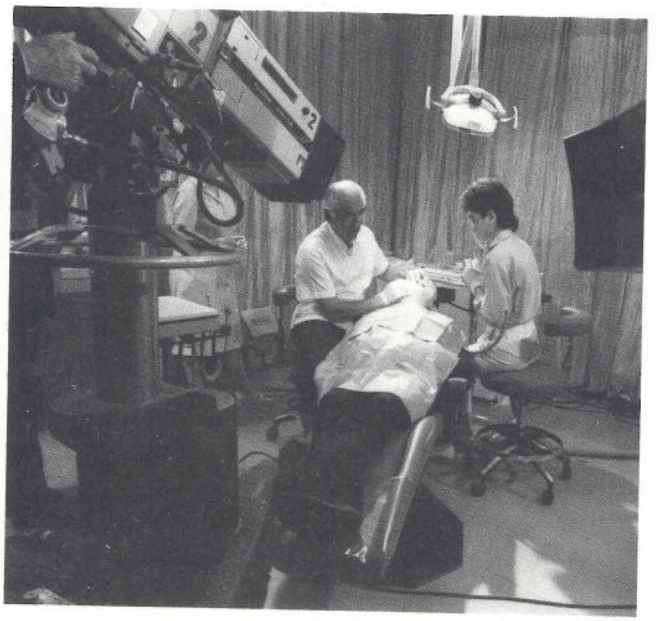
TELEVISION

Live closed-circuit television has been a special part of the Chicago Midwinter Meeting for 22 years, where skilled clinicians demonstrate techniques and procedures for general practitioners. Television programs are scheduled Monday and Tuesday mornings and afternoons and Wednesday evenings. Only your registration badge is required for admittance.



CAD/CAM Live!

Francois Duret

Director of Research and Education, University of Marseilles, France

Grand Ballroom I, Marriott, Seventh floor
Sunday, 2-4p

Francois Duret has selected the Chicago Midwinter Meeting for the first live television demonstration in the U.S. of his CAD/CAM System of restoration fabrication. This revolutionary technology will allow preparation and installation of a finished crown or bridge in a single visit. All this with no impressions, no temporary crowns, no waxing and casting and no further adjustments needed. Dentists and patients will also benefit from the development of new dental materials unavailable with traditional methods.

The way the new system works is simple. The dentist uses a laser probe to take pictures of the area to be restored. These pictures are then used by a computer to design a crown perfectly adapted to the patient's mouth. After reviewing and if necessary, modifying the design on a computer screen, the dentist starts the manufacturing process, using a mico-milling machine which automatically shapes a crown out of a solid block of material. The finished crown can be immediately cemented in place.

Combining three of the most modern developments in science, the laser, the computer, and the micro-milling machine, dentistry of the future is certainly going to be different, easier and will be here apparently soon.

Commentator: Patrick J. Pierre

Duret, CAD/CAM U.S. Television Debut Today

For the first time in the United States, Francois Duret will perform a live television demonstration of his CAD/CAM System of restoration fabrication at the 124th Midwinter Meeting.

Computer-aided-design and computer-aided-manufacturing (CAD/CAM) has revolutionized the field of dentistry. After many years of research and trial, the CAD/CAM system has become clinically applicable to dentistry. This revolutionary technology will allow preparation and installation of a finished crown or bridge in a single visit. Such a system will eliminate the need for impressions, temporary crowns, waxing and casting and the need for further adjustments.

The man behind the idea, Francois Duret, DDS, of France has been dedicated to the CAD/CAM effort for over 20 years. With his discoveries, Duret has created a revolution in the international dental profession.

Duret who, in addition to his degree in dentistry holds an MS in physiology, a PhD in human biochemistry and a PhD in dental biochemistry, is the director of the CAD/CAM Laboratory and director of research and education at the University of Marseilles, France.

According to Duret, in an article published in the November 1988 issue of the Journal of the American Dental Association (JADA), CAD/CAM technology was initially considered a trouble-shooting device and alternative to the "tedious" method already in existence. "Regardless of the advanced state of this 300-year-old technique, information must still be transferred by hand from the impression to the finished crown via a series of materials, each of which may induce error in the final casting. This system of casting does not allow us to take advantage of tremendous advances in computers and robotics. For these reasons, we introduced CAD/CAM technologies to the dental profession in 1971."

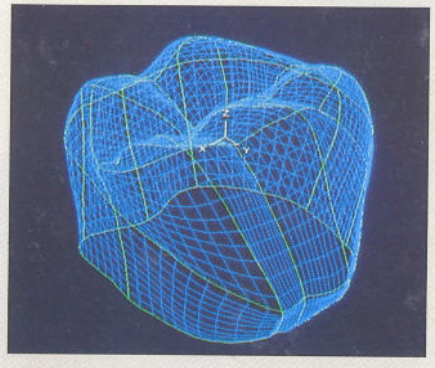


Fig 8 ■ Mandibular right first molar retrieved from the library of theoretical teeth.

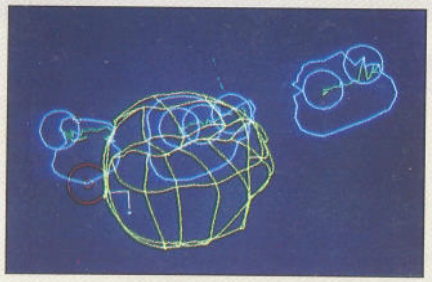


Fig 9 ■ Optical wax-up evaluation of the occlusal surface.

The first dental CAD/CAM prototype was introduced to the public in 1983 at the Caranciere conference, France. Two years later the dental profession witnessed for the first time a crown milled and installed in a mouth without the assistance of an outside laboratory.

In his presentation at 2-4 pm today in Grand Ballroom I on the Seventh floor in the Marriott, Duret will demonstrate the Duret System of CAD/CAM already in use in dental offices throughout France.

For many, the thought of using a computer can be an intimidating idea. However, the CAD/CAM process as it is applied to dentistry is relatively simple. By using a laser "probe" placed within the mouth, a picture is taken of the area to be restored. The images are transferred into a computer, which uses the image to create a crown that can be adapted perfectly to the patient's mouth. After studying the "replica" image and making necessary modifications, the dentist begins the manufacturing process. Using a micro-milling machine, the crown is automatically shaped out of a solid block of material. The finished

Continued on page 4

DAY by DAY 1 VOL. 2, NO. 1

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Television Gives MWM Edge on Excellence

The 1989 Midwinter Meeting of the Chicago Dental Society will mark the 22nd consecutive year that live clinical demonstrations will be shown through the use of closed circuit television.

Two and a half days of programming have been scheduled with this year's theme "United Through Knowledge" in mind. Clinicians will operate on selected patients at the facilities of Northwestern University School of Dentistry facility. The audience will view the program before television monitors at the Marriott Hotel. A two-way audio hook-up between the Marriott and the dental school will allow the audience to address questions to the clinician, through the moderator, and then see and hear the response.

According to Calvin Akal, DDS, Midwinter Meeting program chairman, the Midwinter Meeting's television program is unique because it is live. "It is the only live presentation program, anywhere in the world. It is also the best means of continuing education that I can think of. The dentist learns more about the subject from seeing it live, watching it happen and asking questions. We have one requirement of the clinicans: Do not lecture. We assume the audience already knows the subject matter. They are there to learn something new."

Akal indicates that he travels throughout the U.S. in search of the best and most qualified clinicians for the television program. He says that the chosen clinicians are quite honored to give television presentations at the Midwinter Meeting. "Because we are known for having the finest clinicians in the world at our meeting, they (the clinicians) see it as their springboard to fame. The Midwinter Meeting is definitely the most prestigious of all annual meetings."

The Midwinter Meeting's television program has gained such prominence that world-renowned clinicians, who wish to give presentations, confront the program chairman. "This year, Francois Duret who is giving the first ever live demonstration of the CAD/CAM system of dentistry in the U.S., came to us and asked to be on the program. I think this shows the great respect the television program has within the international dental community." (see accompanying story on Duret and CAD/CAM on p. 1)

The continued success of the television programs is due to the efforts of the members of the closed circuit television committee who have been working the past year with the clinicians and television crew in preparation for the Midwinter Meeting. Akal has long recognized the importance

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The CAD system, linked to an Access Articulator, provides the data relating to the dynamic movements of the jaw.

The final procedure employs the CAM (computer aided manufacturing) system, which includes a numerically controlled machine tool and utilizes a four-axis capability. This machine automatically milled the prosthesis from conventional or special materials.

When the demonstration was coming to a close, Duret and McLaughlin entertained questions from the audience. In response to an inquiry on how much training was necessary to utilize the CAD/CAM system, McLaughlin said, "If I can learn it, anyone can. I had a total time training of about 10-12 hours, outside the theoretical aspects of it and I feel quite comfortable with it. The amount of training, I think, of two days would probably be fine."

A concern expressed in many questions was the price of the CAD/CAM system. Responding in French with a translator, Duret answered in theoretical terms. "You must be very careful in evaluating the price of the CAD/CAM machine. You have to consider time and materials needed in comparison to the traditional method. In France, the through point of the C system is six restoratio

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CHICAGO DENTAL SOCIETY
1044 Midwinter Meeting

DAY by DAY 3
TUESDAY, FEBRUARY 21, 1989 VOL. 27, NO. 3

Hundreds witness dental history

Capacity crowd witnesses the USA TV premiere of Duret's CAD/CAM system on Sunday.

CAD/CAM innovator Francois Duret and commentator Gerry McLaughlin performed North America's first live demonstration of the CAD/CAM system to a packed house Sunday afternoon in the Marriott's Grand Ballroom.

As part of the closed-circuit television program, Duret and McLaughlin, who were introduced by Peter J. Lio, chairman of the Closed-circuit Television Division, demonstrated the CAD/CAM innovation live from Northwestern University Dental School. The three procedures which constitute the CAD/CAM system of restoration were presented.

First, using a camera-like prong, Duret input the existing dental shapes into the system. This device included a laser source (diode) which, through the first endoscope, projected light on the desired picture area. A second endoscope, adjacent to the first, allowed the camera to take pictures in the mouth.

Duret took many pictures of the area in question, each providing him with a different viewpoint. The objective of the multi-picture process, in Duret's opinion, increased the computer's ability to recreate a more perfect three dimensional view. By combining the information from each picture, the computer was able to recreate an exact duplicate of the area.

The CAD (computer aided design) system allowed Duret to create an electronic model of the impression in the second step of the process. This electronic model was then displayed on the screen and used to design the prothesis.

Duret was able to adjust the image on the screen, defining new boundaries for the computer to take into consideration. Taking all information into account, including adjacent teeth, school of occlusion, etc., the computer designed a replacement prothesis to the exact specifications Duret proposed.

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A concern expressed in many questions was the price of the CAD/CAM system. Responding in French with a translator, Duret answered in theoretical terms. "You must be very careful in evaluating the price of the CAD/CAM machine. You have to consider time and materials needed in comparison to the traditional method. In France, the breakthrough point of the CAD/CAM system is six restorations per day."

McLaughlin said, "The real question is: Is it worth the price? What is the value of the system? It is an individual question. What does it mean to your practice when a patient does not have to come back for a second visit and take time off from work in order to have the crown installed? What will it mean to your profession if you do not need to take impressions? How many patients will prefer this system (to the traditional)?"

"We are entering a new age," said McLaughlin. "These are questions we were never able to ask before."

—*Peter L. Vogt*