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Less cutting, pain as **technology revolutionizes** operating rooms



Jose More/Chicago Tribune

Dr. Constantine Frantzides performs surgery using a voice recognition system. The new equipment can minimize the trauma associated with surgery.

SURGEONS' VOICES — guide tools —

BY JON VAN
Chicago Tribune

Though it once was standard for a surgeon to slice open his patient and gaze directly upon the operating field, today he's more likely to slide in a miniature camera, light and special tools through small incisions and watch himself work on television.

The surgeon may even talk directly to the tools, thanks to a new voice recognition system called Hermes.

"Hermes: more pressure," Dr. Constantine Frantzides barked into a microphone he wore during a recent operation at Louis A. Weiss Memorial Hospital on Chicago's North Side. The Hermes system increased the gas pressure within the patient's abdomen, acknowledging the command with information displayed on a video screen.

Whether it's called minimally invasive, bloodless or laparoscopic, surgery is enlisting new technology to minimize the trauma caused by large incisions, thereby reducing pain and recovery time. The trend toward doing more surgery with less cutting and almost no bleeding has gathered so much momentum that some doctors think it's time to reinvent the basic design of operating rooms to accommodate a fundamental technological shift.

Put into practice

Dr. Frantzides is one such advocate, and he has put his ideas into practice at Weiss Hospital, where he's worked with industry vendors to create a technologically advanced operating room.

In Dr. Frantzides' OR, television monitors and much other high-tech apparatus are suspended from ceiling-mounted booms that can be swung from one position to another as needed without interfering with the surgeons and

nurses gathered around the patient.

A most fascinating feature is Hermes, which enables the surgeon to speak directly to the equipment to order technical adjustments.

The surgeon can instruct the system to pump more carbon dioxide into his patient's abdomen to keep it open and visible to the video camera, and he can ask for the lighting to become brighter or for a white pointer arrow on the TV screen to change positions.

Dr. Frantzides, who directs minimally invasive surgery for the University of Chicago hospitals, did all this and more on a recent morning as he was repairing a patient's hernia.

Besides deftly manipulating the patient's tissue to repair the hernia, Dr. Frantzides provided a running commentary for the benefit of surgical residents assisting him. Like a football coach, he used the white arrow on the TV screen to point to parts of the patient's anatomy, name them and explain his repair strategy.

Safety in voice control

Some might regard use of voice commands instead of just reaching over to twist a knob as excessive gadgetry, but that's not the case, assures Joan Cahill, laparoscopic surgery coordinator at the University of Chicago and Weiss.

In a traditional operating room, twisting dials usually requires the coordinator to reach over the patient to a hodgepodge of equipment stacked on a portable cart. Some coordinators may be unfamiliar with the equipment's settings, and in any event, touching anything in an OR can compromise the setting's sterility and is best avoided if possible.

"Making those adjustments as the surgeon requests them means that I'm not able to handle other jobs," Ms. Cahill said. "It could mean having to put another person into the operating room."

Automating the process cuts the time spent

setting up the room for an operation, which, in turn, cuts costs, Ms. Cahill said.

The Hermes system, which was supplied to Weiss by Stryker Endoscopy Inc., based in Santa Clara, Calif., requires that each surgeon who uses it spend time training the machine to recognize his or her voice. Once that is done, a computer disk of each surgeon's specific voice software is inserted into the machine when he uses the operating room.

Pioneer in surgery

The University of Chicago's Dr. Frantzides, who was recruited from the Medical College of Wisconsin at Milwaukee, is a pioneer in promoting low-cut surgery who has adapted eight traditional procedures to laparoscopic technology.

While he has often encountered opposition from older surgeons who are emotionally wedded to open field procedures, Dr. Frantzides has no doubt that time is on his side.

"We'll soon see a generation of surgeons who were raised on Nintendo," he said. "I know that when I play computer games against my son, there is no way I can beat him. There's no doubt that these young people coming up will be more comfortable with minimally invasive techniques than any of us who learned the old way and adapted to the new."

And while all this makes sense and supports the notion that the technology is laudable, there still lingers a possibility surgeons really like this stuff because it's just neat and strokes their egos. The Hermes system doesn't dispel that.

At the conclusion of an operation, Hermes is programmed to announce to the operating room that "you're a great OR staff" and tell the surgeon that he is wonderful as well. A smiling Dr. Frantzides demonstrated the option of surgery's equivalent of canned applause and said, "Why not? It makes everyone feel good."