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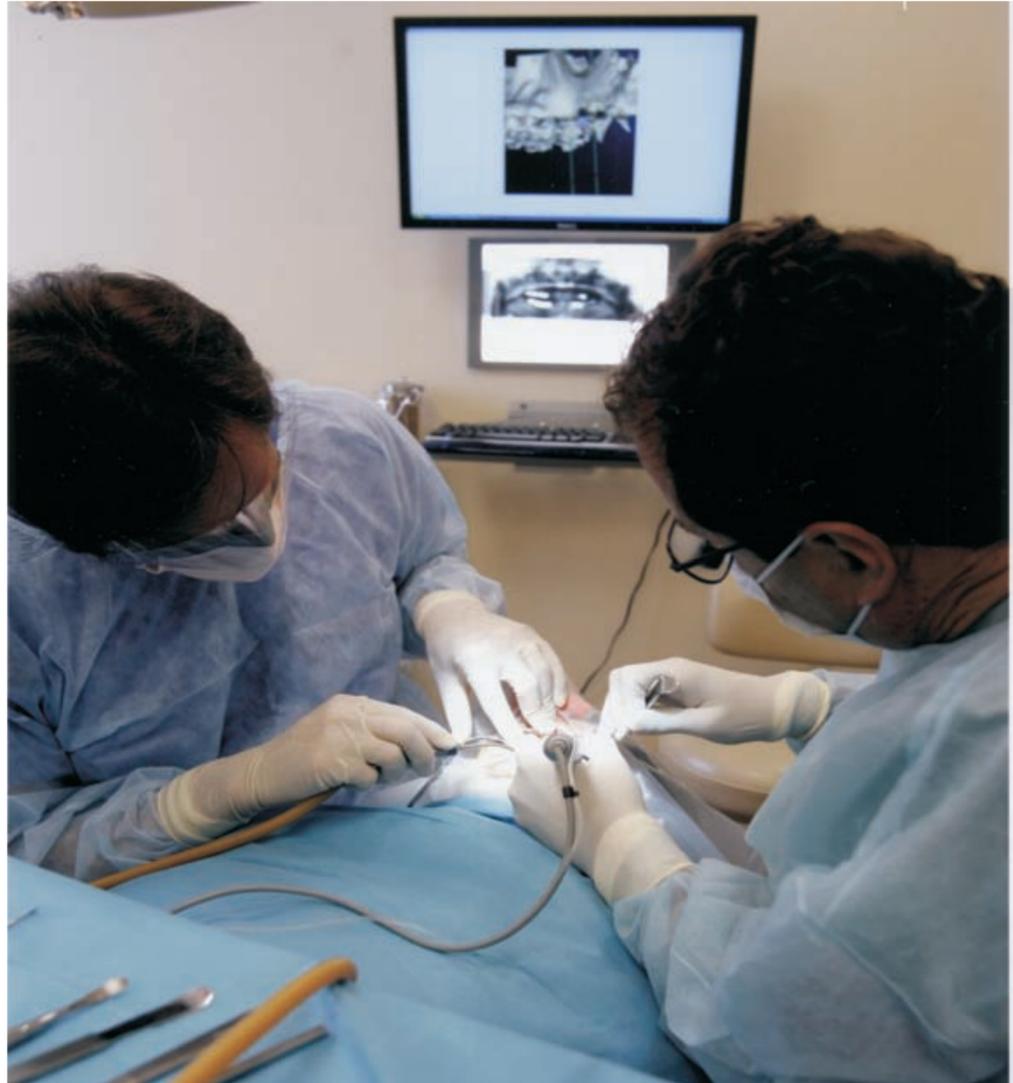
"The market for dental implants has expanded tremendously. It's really the first choice for replacing a missing tooth now because it is predictable."

- Dr. Douglas Goldsmith of Facial Imaging

Tooth Tech: 3-D Surgery.



Drs Gary Orentlicher and Douglas Goldsmith helped develop the use of 3-D imaging, which allows doctors to precisely place dental implants, eliminating guess work and more invasive procedures.



Drs Gary Orentlicher and Douglas Goldsmith surgically insert a dental implant in a patient using 3-D imaging.

Facial Imaging Creates Models from Scans to Make Implants Easier

For many aging baby boomers, dental implants are becoming a preferred alternative to dentures or other appliances their parents or grandparents may have used to replace broken, missing or rotted teeth.

Though much more expensive than dentures, implants are aesthetically more pleasing since they perform like real teeth, with none of the slipping often experienced with dentures or other dental devices, such as removable bridges.

"The market for dental implants has expanded tremendously," said Dr. Douglas Goldsmith, an oral surgeon. "It's really the first choice for replacing a missing tooth now because it is predictable," he said.

In response to increased demand, more companies are selling implants and the computer software that helps oral surgeons place implants into the jaw.

Unlike dentures, which are placed over the gums, or devices such as bridges, which are fitted over existing teeth to fill gaps, implants, as the name suggests, are anchored to a patient's upper and/or lower jaw bones.

Candidates for dental implants need to have healthy gums and adequate bone to support implants, according to the American Dental Association.

To aid in placement of these titanium posts, which are surgically implanted and "capped" with a crown, physicians generally require patients to have CT scans or "cone beam" scans done of the jaw and mouth to provide proper placement of the implant.

Even with those aids, placing multiple implants can involve guesswork. That's why Goldsmith and fellow oral-surgeon Gary Orentlicher began using three-dimensional imaging software about 10 years ago to aid in treatment planning. The protocol is usually reserved for those patients who are having several teeth replaced.

But they often ran into problems after referring patients to radiology offices where the scans, which require a specific protocol, weren't done properly.

That resulted in patients having to return to have the scans done again and then wait for weeks to get them processed.

Frustrated, the doctors decided there had to be an easier way.

So three years ago they founded their own business, Facial Imaging LLC, that partnered with CT scan facilities, and began working with radiologists, training technicians in the protocols needed for implant dentistry and creating a network of CT scan facilities where patients could go to get proper scans done. They include locations in Connecticut and Massachusetts as well as a dozen such offices in New York, including New City, New Rochelle, Brewster, Mount Kisco, Suffern, Valhalla, Yorktown and Yonkers. Getting the scans done right is the most important part of the process, said Seth Berkman, Facial Imaging's director of information technology. "If the scan is not done properly, you can't treatment plan properly," said Berkman, one of six employees.

In addition to the images, 3-D imaging software also aids in creating a hand-held model of the patient's mouth, which further aids in placement of the implant.

The scan and guide add about \$700 to \$1,000 to the cost of treatment. But Goldsmith said the amount is small in comparison to the \$18,000 to \$20,000 a patient may spend, for example, to replace five teeth with implants.



3-D imaging shows where a patient's dental implants would be placed.

Most patients recognize that implants are a costly proposition and that the tools aid in placing the implants, Orentlicher said. "When you explain to the patient ... that it's going to cost them another \$1,000, they don't even blink," he said.

Facial Imaging has grown not only due to the increased popularity of implants but in also providing its services to other oral surgeons.

The company has invested in technology infrastructure and hired technicians who receive scans from radiologists and process them specifically for use by oral surgeons and their software.

It works like this: A doctor fills out a prescription form, specifying which treatment protocol he wants and sends his patient to get a CT scan. After the patient is seen, the images are sent through secure Internet channels to Facial Imaging, which then processes them for use with the doctor's brand of 3-D imaging software. The images are then posted on Facial Imaging's Web site, where the doctor can download them (usually within the same day). Or, the images can be captured on a CD and mailed to the doctor.

"The difference between getting it from us, versus from a radiology facility, is that everything that Facial Imaging does is geared so that the doctor can immediately start working," Berkman said.

Just as the number of patients seeking implants has grown, so has the number of brands of image scanning software for implant treatment planning, also known as protocols.

Three years ago, there was one such protocol, Berkman said. Today, there are four with several more on the way.

The brands include Simplant and Nobel Biocare, two of the biggest in the market, and smaller players, such as Long Island-based Implant Logic Systems, among others.

Among its benefits, 3-D imaging software also allows oral surgeons to employ flapless surgery, a procedure that doesn't involve slicing tissue and then sewing it. "You use the guide that's created by the software to drill straight through and put the implant straight in," Berkman said. That not only reduces healing times by 50 percent to 60 percent but means less pain and swelling for the patient.

For Gloria Skulnik, who had five teeth replaced by Orentlicher last year, it meant the Bronx resident was able to have all of her teeth done within 8 months with very little discomfort.

The implants allowed Skulnik to dispense with a removable bridge with which she wasn't satisfied. "I really did not want another removable bridge," the retired New York City school teacher said. "You feel like it's

going to pop out of your mouth at any moment."

Skulnik paid about \$20,000 to have her five teeth replaced, but, she said, "I needed teeth in my mouth." Moreover, her unhappiness with the removable bridge made swallowing the expense more palatable.

"You just go ahead and do what you have to do," Skulnik said

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