WASHINGTONIAN

A Crown in One Visit

Advances in dentistry—from machines that make caps to digital x-rays—have made dental work quicker and less expensive

[BY RACHEL PETKEWICH]

With an i-CAT machine, dentists like Dr. Kravitz get a 3-D image of the skull in minutes. For patients, it means less radiation than a CT scan.

The Big Picture, Fast

X-rays are great, but in certain situations, digital 3-D scans from a machine called i-CAT are better because they show everything inside the skull, says Joseph Kravitz, a cosmetic and restorative dentist in Bethesda. And this CT scan exposes a patient to significantly less radiation than its hospital counterpart.

Previously, if a head CT were needed, the patient had to visit a hospital. "With i-CAT, the patient sits in the chair in the dentist's office for 17 seconds, and within three minutes, we have the results," says Dr. Kravitz. The machine rotates around the patient's head. Dr. Kravitz estimates that it costs as much as 40 percent less than a hospital scan. Most scans are covered by insurance.

Kravitz uses these scans primarily to plan implant surgery, but they can also reveal problems in sinuses and facial bones such as a polyp, bacterial infection, or tumor in the sinus cavity that's putting pressure on the roots of the teeth.

Faster-Healing Implants

The i-CAT offers other advantages. Patients who lose a tooth sometimes choose to fill the gap with a titanium implant. Implants are not new, but a new procedure to set the fixture involves no stitches, causes little bleeding and pain, and minimizes healing time and bone loss.

Implants are done in two stages: A fixture is anchored in the jawbone like a root; several months after the area heals, a crown is placed on top. Traditionally, dentists cut the gums to see where to place the post. With an i-CAT image, 80 percent of implants can be screwed right through the gum, says Dr. Kravitz.

Crowning Achievement

A crown, also known as a cap, covers a damaged tooth. Typically, the procedure requires two visits. The first is to grind down the damaged tooth, take impressions so a lab can make the crown, and have a temporary crown put in place. On a second visit, a patient receives the permanent crown.

An in-office milling machine now makes it possible to get a permanent crown in a 1 1/4-hour visit. After the dentist grinds away damaged parts of the tooth, the nub is sprayed with titanium-dioxide powder so the machine's camera can record a three dimensional image. Then a crown is milled from a block of porcelain in minutes.

If the camera can't reach the tooth or if the tooth is broken below the gum line, traditional crowns must be used, says Mark Taff, a restorative dentist in Bethesda.

The CAD/CAM machine—named for computer-aided design and computer-aided manufacturing—can also craft inlays or porcelain fillings. Dentist prefer these milled crowns and inlays for back teeth but not for those in front. Teeth are multicolored and translucent, but the machine's porcelain is uniform in color. To make traditional crowns, labs often combine colors.

—*Washingtonian, October 2006*

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