

# Creative Uses of Dental Imaging

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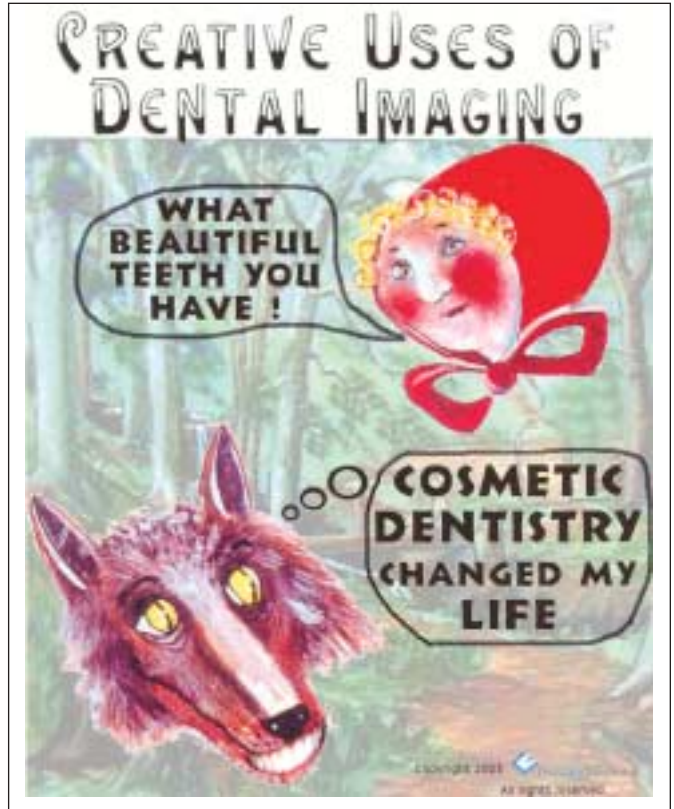


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**W**e are living in a technological world! Dentists are benefiting from advancements in lasers, CAD/CAM, air abrasion and cosmetic imaging and many other tools to show their patients that they are state of the art and can deliver superior services.

Dental imaging softwares have been designed and used to excite and elevate our patient's awareness of cosmetic dentistry. Many dental imaging softwares and smile libraries exist. They are usually based on Photoshop, which has been adapted to dentistry. However, are all the proposed computer generated changes possible to produce in a manner that is

both in the interest of the patient's health and will these proposed alterations be able to provide years of predictable function?

Many providers of cosmetic dental imaging place a disclaimer on their photos such as "This image is for purposes of illustration only. It does not represent a guarantee of any kind "These providers realize that what they are proposing to the patient is not always dentally possible. Gingival levels, midlines, and root position have to be in alignment. They just cannot move by magic!

We will illustrate several ways to use cosmetic imaging to educate

your patient, make them aware of the correct manner in which to restore their teeth, as well as show them what is not possible and why. We should not be selling false hopes to our patients. New instrumentation, materials and techniques make it easier for us to attain spectacular results, but the principles of dentistry always remain the same.

People should look like people, teeth should look like teeth, and phonetics, muscle balance and occlusal stability should be maintained and respected so that the entire masticatory system functions in balance and harmony. These principles have long been

## CLOSING GAPS



**FIGURE 1A**—Natural teeth as they are.



**FIGURE 1B**—Imaging showing proposed esthetic change.



**FIGURE 1C**—Final result using porcelain veneers.

CLOSING GAPS



**FIGURE 2A**—Heavily restored anterior teeth.



**FIGURE 2B**—Imaging showing proposed esthetic change.



**FIGURE 2C**—Final result using porcelain veneers.

advocated by clinicians such as L.D. Pankey, Morton Amsterdam, D. Walter Cohen and Peter Dawson.

An article I recently coauthored described the “magic combination” of meticulous treatment planning together with a special chemistry between patient, dental team and lab technician. These “magic patients” and the energy created in treating them usually lead to our most successful cases.

**USING DENTAL IMAGING**

Cosmetic dental imaging programs are a wonderful tool to educate our patients towards electing for esthetic dental treatment. On how many occasions do patients come to you, the “cosmetic dental expert”, for a miracle cure because they believe that you know secret magic techniques that their other dentists did not? They believe that you can move their teeth without orthodontics, whiten old broken

down restorations to look like new, and restore their teeth to beauty and perfection in spite of the fact that they had been told by others that they had advanced periodontal problems. They believe that you are a dental magician! Although, you may have superior skills, years of experience and a great eye for esthetics the fact remains that above all the health of the patient is paramount. Their wishes may not be easily satisfied due to existing biological restrictions.

**NEED FOR ORTHODONTIC INTERVENTION**



**FIGURE 3A**—Natural teeth as they are.



**FIGURE 3B**—Imaging showing proposed esthetic change and natural root position. Orthodontics is clearly needed.



**FIGURE 3C**—Orthodontics used for root alignment.



**FIGURE 3D**—A natural, healthy result.



**FIGURE 3E**—Natural teeth as they are.



**FIGURE 3F**—Proposed esthetic imaging.



**FIGURE 3G**—Final result.

Dentist's must use computer imaging to show their patients the reality of their dental situation and how it can be correctly restored. The patient will usually understand and elect for ideal treatment. Your life will be easier, your problems will be fewer and your patient will be happier.

We have classified our dental imaging objectives into three categories, which we utilize for purposes of patient education and case presentation.

**IT'S SO EASY — JUST DO IT**

Call it what you wish, The Slam-Dunk, Bread and Butter case etc., there are many situations where dental imaging simply shows the patient what they had not realized before. Show them how their teeth appear and how easy they are to fix. If everything aligns in your imaging, all you have to do is “just do the case”. These patients became raving fans and usually refer many patients to you. You have

changed their lives in only 2 visits.

**The Rules**

- 1) Get the magic patient.
- 2) Does everything line up in your imaging? YES.
- 3) Do the case!
- 4) "My dentist changed my life in just 2 visits."
- 5) WHAT A STAR!

**SHOW THEM THE RIGHT WAY**

Sometimes the difference between an acceptable and a spectacular result is a matter of recognition of the situation and bringing the patient to a complete understanding of the necessary steps to rectify it. Cosmetic imaging can be an indispensable tool to illustrate the need for orthodontics or periodontal changes to the patient to get the result they desire.

**The Rules**

- 1) Get the magic patient.
- 2) Does everything line up? NO.
- 3) Show and educate how to get everything to align.
- 4) Do it.
- 5) Get paid, have fun.

**PROCEED WITH CAUTION**

Many people have false expectations as to what type of cosmetic changes are possible. There is no way in the world that any plastic surgeon can make me look like Tom Cruise. People are sold and commence treatments thinking they will be getting exactly what they desire but often walk away disappointed. I don't know about you but I don't need this type of pressure and stress! We use imaging to show our patients the reality of their situation, give them restorative options, and make sure they understand the best result possible providing that all steps taken are successful.

It is extremely important to have the patient sign a detailed consent form to be sure they have understood everything explained, what to expect and what type of future maintenance their restoration will require.

**NEED FOR PERIODONTAL INTERVENTION**



**FIGURE 4A**—Existing gummy smile.



**FIGURE 4B**—Imaging showing proposed esthetic change. Periodontal intervention is clearly needed.



**FIGURE 4C**—Illustration of necessary gingival changes.



**FIGURE 4D**—A natural, healthy result.

**IMAGING LEADING TO FALSE PROMISES AND EXPECTATIONS**



**FIGURE 5A**—Upper teeth that will be lost.



**FIGURE 5B**—Cosmetic imaging of new smile.

The dentist (Figs. 1 & 2) promised the patient that he could restore her teeth with implants so that her teeth would appear to emerge from the gum-line for a completely natural look. No consideration nor mention was made to the amount of bone loss, gingival loss, lack of lip support, or even if implants were possible without extensive bone grafting.

How could the high expectations this patient had of restoring her dentition to perfection possibly be realized? The computer imaging and case presentation made it seem all too easy. But was it?

We believe that computer imaging is one of dentistry's

finest tools to educate your patient. Figure 3 depicts the imminent loss of all the maxillary teeth due to advanced periodontal disease as well as the fact that this patient does not clean under her one month old lower implant-supported prosthesis placed by her previous dentist.

It is crucial to understand that this patient was severely disappointed that her lower teeth did not emerge from the gingiva and that she was restored using pink acrylic and a bar. She refuses to clean under the bridge, wants it removed and wishes to redo her implants so they can simulate natural teeth. This is clearly a red flag! DANGER!

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**DANGER!** False expectations.

A computer-generated simulation of the edentulous maxillary ridge (Fig. 4) clearly illustrates to anyone the amount of destruction that has taken place and the lack of supporting bone and gingiva. Figure 5 simulates the placement teeth and the amount of bone and tissue that would have to be grafted in order to get the desired result. It is now up to the patient, the talent of the surgeon, and the reality of what is biologically possible to determine if treatment in this direction should be followed. If not, an alternate path should be taken with the patient's complete understanding of why this option was followed.

**The Rules**

- 1) Listen to your patient's desires.
- 2) Are these wishes biologically possible.
- 3) Use imaging to illustrate reality.
- 4) Can you give the patient what they desire.
- 5) Explain the necessary steps or alternatives.
- 6) Proceed or walk away

**CONCLUSION**

We are living in wonderful times. The world of dentistry is getting more exciting on a daily basis. Dentists are thinking outside the box and performing services that were unimaginable just a few short years ago.

The use of computers and imaging software are just one of a number of tools that dentists have at their disposal to help them provide superior services. We have attempted to illustrate just some of the potential creative applications of imaging. Using your imagination and talent, the possibilities are endless. Have fun! **OH**

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**IMAGING USED TO ILLUSTRATE REALITY**



**FIGURE 6A**—Upper teeth periodontally hopeless. Must all be extracted.



**FIGURE 6B**—Simulation of remaining ridge after simulated extraction.

*Oral Health welcomes this original article.*

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**FIGURE 6C**—Simulation of negative space. Missing vertical height of ridge, papilla and lack of bone for lip support.