



# X<sup>RAY</sup> Files #2 — The impact of digital technology

For more on this topic, go to [www.dentaleconomics.com](http://www.dentaleconomics.com) and search using the following key words: *digital imaging technology, digital radiology, 3-D imaging, cone beam*.

## Children's imaginations are filled with images of heroes and villains and "happily-ever-afters." MY DEFINITION OF "HERO" HAS BEEN REDEFINED OVER THE YEARS.

In past generations, masked cowboys on white stallions tracked down bad guys; today, courageous crusaders triumph thanks to amazing new technology. With February designated as Children's Dental Health Month, dentists can use technology to become heroes to our younger patients.

Collaborating with orthodontists gives us the opportunity to make an impact on young lives. During the adolescent years, self-image and appearance play an important role in self-esteem development. Tooth misalignment or malocclusion can cause serious dental difficulties. Also, it has been reported that psychological problems arise when children are ridiculed by their peers because of esthetic differences.

Impacted bicuspids in children are common and treatable. The American Orthodontic Society recommends a panoramic screening X-ray for 7-year-olds to determine the size and position of permanent teeth. An Army study by Grover and Lorton in *Oral Surgery, Oral Medicine, and Oral Pathology* noted that "impactions can occur because of malpositioning of the tooth bud or obstruction in the path of eruption." About 60% of the time, the tooth is impacted to the palatal side. The article added, "The impacted or mal-erupted tooth and its associated pathosis provide great diagnostic challenges to the dentist." With my imaging equipment, digital X-ray (DEXIS®) and cone beam (GXCB-500™) machines, I have the tools to properly meet these challenges.

In an actual case, a routine bitewing on a 13-year-old girl showed the maxillary right second premolar tooth to be impacted. Both her orthodontist and I were concerned that the position of the tooth had caused damage to the adjacent first premolar. If Tooth No. 5 was damaged, we would be better off extracting it and bringing No. 4 into

the arch. Cone beam came to the rescue once again by allowing me to fully assess the situation! After viewing the 3-D image, we were able to determine the accurate position of both teeth with respect to each other, and see that there was no damage to the root of No. 5. With that fact established, I was able to surgically remove No. 4 from the palate.

Because of the digital capabilities of both my radiography system and cone beam, I can e-mail or send CDs of the images to my referring orthodontists, oral surgeons, or prosthodontists. All of us can share the benefits of this diagnostic tool.

The 3-D image clearly detailed the vessels in the palate, so I had the confidence to perform the surgery to remove

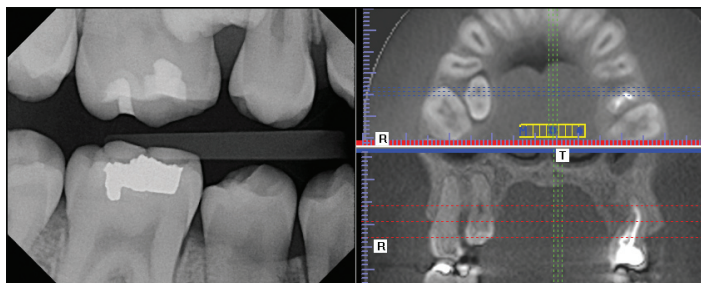
Tooth No. 4 myself. Now, my patient is doing terrific. I eliminated the cause of a developing problem, probably reducing the time needed for more comprehensive orthodontic treatment later.

So, in this X-files case, I was able to show my young patient that dental health is important, that

the dentist's office is more "cool" than scary, and most importantly, that digital technology results in very effective diagnosis and treatment.

Digital technology may not be as dramatic as riding my white horse into the sunset, but to me, the successful treatment of any child is the best kind of happy ending. **DE**

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*Discovered with 2-D, safely eliminated with 3-D*