



"Look Who's Making Radiology Experts Out Of Specialists"

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Part I - The Problems

1. Rapid Adoption of Specialized Technology

There is no doubt that cone beam computed tomography (CBCT) has captured the attention of the dental profession unlike any other technology introduced to us in the past 50 years. Because this imaging modality has so many applications crossing all of the disciplines and specialties of dentistry, clinicians have adopted CBC T in great numbers. One of the distinct advantages is that you don't have to own the technology in order to use the data from to make better clinical decisions. This is a good thing. However, in order to maximize the market penetration; that is, sell more machines, manufacturers have taken it upon themselves to make their early adopters radiologists. This is a bad thing.

Until 1999, all dentists were their own radiologists. After more than 50 years of applying and petitioning the American Dental Association, the American Academy of Oral and Maxillofacial Radiology was granted specialty status by the House of delegates to become dentistry's ninth specialty. To this day, more than a decade later, a significant number of my colleagues still do not know that oral and maxillofacial radiology is a specialty! This is another bad thing.

So how does the manufacturer leverage their position into the marketplace? They do it by marketing those who purchase their machines not only as educators but also as radiologists. Dentists who attend courses sponsored by manufacturers and their users come to believe that that particular clinician is a specialist in radiology. This is rarely the case. To be fair, some manufacturers hold multidisciplinary educational programs which include an Oral and Maxillofacial radiologist, commonly to answer those questions that the purchaser of the machine could not.

Repeating my earlier statement, dentists have had to be their own radiologists since Roentgen discovered the x-ray. Today, however, that is not the case. What disturbs me most about this trend is that many purported CBCT programs are being presented around the country by people who understand how to apply this technology to their specific diagnostic task yet have very little understanding of the principles of CBCT, let alone knowledge of the anatomy in three planes of section and knowledge of the more significant findings that they will encounter in their volumes. This trend is creating significant risk to both the users and the owners that CBCT, expanding the liability possibilities for many surgical procedures that dentists perform. It is not apparent to my colleagues who claim to me that "there is no case law concerning CBCT" but the reason for this is that almost all claims to date have been settled out of court¹. What clinician in his right mind would want to go to court, lose the case, surrender his or her license and have that added to the national database? Of course the cases are settled long before they ever have a chance to go to the courts.

2. Manufacturer's Responsibilities

To be fair to my manufacturing friends, this type of "viral marketing" is very effective, and I too would employ it to expand the company's influence and sell product. However, to paraphrase a well-known pundit on a national television program "is this fair and balanced"? Manufacturers have the responsibility to educate and even train their clientele. This is especially true if the technology is so new and novel that the dentist have trouble locating the traditional academically-based education. This is always true when the technology precedes the education, which is almost all the time. Educators in dental schools rarely have the budgets to be the early adopters of these technologies. So, in the case of cone beam imaging many machines have been sold by manufacturers without a clear understanding of the potential liabilities to dentists with even less understanding of the potential liabilities. This is not appropriate.

3. Dentists as their Own Radiologists

In addition to the problem of rapidly expanding technology - in the hands of clinicians who have limited understanding of the technology, limited knowledge of the potential liabilities, but who appreciate and understand the usefulness of the technology - we have the problem of the early adopters who are not radiologists educating dentists about radiology. I understand that most of these clinicians, commonly specialists, have an excellent understanding of the utility of CBCT

for their specific application and are able to communicate this to their dental colleagues.

However their overall understanding of CBCT is limited in nature areas such as:

- the principles
- the radiation risks
- applications outside of their specialty field
- occult pathology
- multiplanar anatomy
- potential liability

4. Drinking the "Kool-Aid"

To make matters even worse, manufacturers tend to adopt or create a stable of individuals who use only their technology and thus have been "brainwashed" into believing that that particular technology is the best. Again, to be fair, even educators who have adopted or purchased CBCT in their institutions have usually at least done their due diligence to determine the appropriate technology in terms of need, applications, budget and support before making their purchases. Unfortunately this type of due diligence does not often happen in the "real world". In many cases the decision to purchase has been made because "my buddy has one of those machines" or is due to an onslaught of advertising and aggressive marketing to which the clinician has been subjected. With this kind of pressure, or lack of due diligence, dentists tend to become "Kool-Aid drinkers". And, many dentists do not have the time or inclination to actually research the various machines, their own personal applications, patient flow, return on investment and most importantly the machine parameters to dictate whether or not the image data will be the best and the most appropriate for their needs. It's sad but we all know it's true.

5. Specialists as Radiologists

Backing up to my observation about specialist colleagues using CBCT educating dentists, let me clarify the point I'm trying to make. First, this is not all about me or my specialty.

I would never consider trying to educate my dentist colleague about crown preparation, implant placement, optimal third molar extraction procedure, endodontic procedures, management of sleep disorders, orthodontic assessment or any other specialized dental procedure for which I was not trained as a specialist.

Why then, do the manufacturers think that their specialist users can adequately educate my dentist colleagues in radiographic procedures and interpretation of CBCT data sets. And more importantly, why do some of my specialist dental colleagues assume they can take on the role

of the oral and maxillofacial radiologist. Clearly, in my experience, some do not. They "render unto Caesar, that which is Caesar's ". However, some do, in fact try to educate our dentist colleagues about things that were not in their specialty training.

In co-chairing the committee to create the "Joint Position Statement of the American Association of Endodontics and the American Academy of Oral and Maxillofacial Radiology" on the "Use of Cone-Beam Computed Tomography in Endodontics", published in February 2011 in both the *Journal of Endodontics*² and On the AAOMR website (www.aaomr.org)³, with Dr. Marty Levin, an endodontist, it became very clear to all panel members that they knew very little about each other's specialty. It was necessary to have input from all panel members both in oral and maxillofacial radiology and in endodontics in order to effectively create the document. The AAOMR has created additional committees to co-sponsor the development of similar guidelines for use of CBCT in implantology, TMJ assessment and other specialty areas. Until such documents are published, manufacturers should be very careful about trying to educate dentists about this technology. The day of the paradigm "Here's how I do it in my practice" are long gone if not extinct. Manufacturers still perpetuate this paradigm. Dentists and dental specialists need to consider the source of the "expert" when considering a substantial shift in their practice such as cone beam imaging. There are very few experts in this area, and all of them are probably in the specialty of oral and maxillofacial radiology. Dentists adopting this technology ought to seek out higher-level CE courses and content that are given by the real specialists in the discipline of radiology.

Part II - The Solution(s)?

Dr. Miles is working on this now, stay tuned...

References

1. Personal communication, American Academy of Legal Medicine meeting, Orlando, FL March 5, 2010.
2. AAE and AAOMR Joint Position Statement; www.aae.org, 2010.
3. <http://www.aaomr.org/?page=AAOMRAAE>

Biosketch

Dr. Miles is a diplomate of the American Board of Oral and Maxillofacial Radiology and the American Board of Oral Medicine. He has authored over 130 peer-reviewed articles and 6 textbooks, including the best selling, 2nd edition atlas on **Cone Beam CT, Color Atlas of Cone Beam CT for Dental Applications** published by Quintessence Publishing. Dr. Miles has a web site for teaching dentists and auxiliaries about digital and cone beam imaging at www.learndigital.net and a social network television channel called www.interactiveimagingtv.com on radiographic topics.

Dr. Miles is in full-time practice of Oral and Maxillofacial Radiology in Fountain Hills, Arizona. He is the President and CEO of **Cone Beam Radiographic Services, LLC.**, a CBCT reporting service for dentists and dental specialists and President of **EasyRiter, LLC**, which produces a simple CBCT report generating software for the profession.