I started using an intraoral camera (IOC) in 1989. When I first heard about intraoral cameras, I was very excited about the ability to show patients what I saw. I was frustrated when I would tell patients about what I found during an examination and get a response of “but it doesn’t hurt” or “it feels fine to me” or “I know that I don’t have gum disease.”

When I first looked at this technology, there were only two systems to consider: The DentaCam by Fuji was $33,000 at that time and had a good image but a severe “fish bowl” effect caused by the wide angle lens. The other system, made by Lester Dine, was about $8,000, but didn’t have the greatest image quality. I couldn’t see spending $33,000 for an intraoral camera so I decided on the Lester Dine system. It was very cumbersome in the mouth because it was basically a lipstick camera to which the dentist had to attach a very large dental mirror to get an image. I learned a great deal about maneuvering around the mouth as a result of forcing myself to utilize this contraption.

In the early 90’s, New Image came out with the AcuCam. I purchased this camera a year or two after its introduction and continue to use it today. It had everything I wanted at the time: very good image quality, much easier maneuverability, focal trough was pretty good, S-VHS capability. I was in heaven.

During the last 7 or 8 years, I have evaluated a number of other intraoral camera systems. The features and benefits are getting better and better every year. It is a very difficult decision for a novice or experienced intraoral camera user to decide which camera system would fit best in their practice. The analogy that comes to mind is buying a car. You don’t know if you bought the right one until you have used it for a few months.

Most dentists tend to be creatures of habit. Some dentists will never use intraoral cameras just because changing their routine is difficult. Also, the learning curve of any new technology is also a factor in implementing its use. I have attempted to teach both dentists and auxiliaries how to do a video tour of the mouth. Some get frustrated and either leave their cameras in the corner or only occasionally take a still image unless they make a conscious decision to learn and routinely use the camera.

If I were purchasing an intraoral camera today, I would go to a major dental meeting with the intent of using the meeting as a method to narrow down my options. I would have the outline that I present here and grade each company’s camera system. I would have done a lot of homework on the companies themselves. Such things as how long have they been in business and what is the reputation of the company. Dental practices looking to purchase an IOC should consider whether they are going to get the customer service they may need. What will happen if or when this company goes out of business? The values, service and future of the company that you purchase from may be as important as the equipment you purchase.

Here are the criteria I use when considering a purchase of an intraoral camera:

**Image quality:** Is the camera Super VHS (SVHS) capable? Higher resolution output than VHS.

**Warranty:** Is there a clear-cut warranty? How long is the warranty? What is covered? What is not covered? Are you going to use the camera analog (TV) or digital (computer) or both?

- **If analog:**
  - Will the camera be used to videotape examinations?
  - Will the camera be used for still images to print?
  - What printers can be used?
  - Is there a SVHS out?

- **If digital:**
  - How easy is it to get images into software?
  - Is software available from the camera company?
  - Is the system compatible with your practice software?
  - Are there software programs that the IOC is not compatible with?
  - Are you limited to certain video capture boards?
  - Are these capture boards going to be outdated soon?
  - One of the things that has happened recently is certain ATI video capture boards and drives were not compatible with Windows 2000.
  - Is the system wireless and how important is that in your office?

**Size of Camera:**
- Effects maneuverability in the mouth.
- Is the cable flexible or very stiff?

**How are images captured?**
- Pedal on the floor—who wants another pedal to deal with? Button on the camera—not always easy to capture an image, without moving the camera, when you push the button. This can cause blurry images.

**Focusing:**
- Do you have to focus with a ring or button on the handpiece or is there a focal trough that you work in? Are there different modes such as Smile, Close-up and Macro? How close can you get to a tooth without distortion or loss of light?
The uses for intraoral cameras are only limited by one’s imagination. In my practice, I have numerous pieces of equipment that can be considered high tech. Of these, the intraoral camera is definitely the one that I would not give up.

Here are some of the uses:

- **New patient tooth-by-tooth tour of the mouth exam.**
- **New patient periodontal exam with a probe in one hand, camera in the other.**
- **Scale lingual of lower anterior teeth. The dialogue that I use when scaling, is “Most people have no idea of what tartar and plaque look like. Plaque is this soft gooey stuff that is made up primarily of bacteria. When it isn’t removed, it solidifies from the calcium in your saliva and turns into this hard stuff called tartar. Tartar and plaque are the primary causes of periodontal disease - gum disease, decay and BAD BREATH.”**
- **IOC can be used to show interproximal decay not visible radiographically, such as on the mesial of one tooth when preparing the adjacent tooth for a crown or other restoration.**
- **Hygienist pre-exam to allow patient to see the need for a more comprehensive examination.**
- **Demonstrate oral hygiene conditions. This works very well with soft tissue management programs.**
- **Post oral hygiene or prophy appointment.**
- **To show changes or improvements after a periodontal program is completed.**
- **Can be used for multi-media case presentation with prints, computer, or VCR.**
- **Demonstrate cracked teeth, open margins, open contacts, faulty restorations.**
- **Show aesthetic concerns like discolored bicuspid caused by corroded amalgam.**
- **Show toothbrush abrasion, occlusal wear, erosion or abrasion.**
- **Use to show orthodontic considerations such as over-jet, over-bite and cross bites.**

IOC’s can be used to show patients the need for sealants or restorations. I routinely use caries detection solution on all teeth and explain to the patient that this is like a “highlighter” for decay and cracks. Then I use the camera to show them problems.

When I’m treating a tooth that is much worse than I anticipated, I use the caries detection solution and the IOC to inform the patient why we may need to change strategies with the treatment.

In conclusion, dentists that don’t have or don’t use an intraoral camera are missing out on a great technology. The future of this technology is terrific. The manufacturers are all trying to out do each other as far as technological advancements and the beneficiaries will be dentists and patients. 

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