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THE EDITOR'S CORNER

The Value of Analog in a Digital World

A study recently published in the *Journal of the American Medical Association* revealed a disturbing diagnostic deficit among physicians training for primary-care practice. They are terribly inept at using one of medicine's most fundamental instruments: the stethoscope.

In this study, which included 453 physicians at various stages of residency training and 88 medical students, the average subject could identify only 20% of 12 important abnormal heart sounds that are detectable through a stethoscope. Doctors further along in their training did little better than medical students who had not yet started their residencies.

Dr. Salvatore Mangione, Associate Professor of Medicine at Allegheny University of Health Sciences and lead author of the study, said that even though the stethoscope is an accurate, sensitive, and specific diagnostic tool, its use is a skill that is disappearing as more and more doctors rely on high technology. Dr. Mangione found this particularly disturbing because the traditional examination and patient history lead to a correct diagnosis 80% of the time and, if used proficiently, can reduce the cost of medical care.

In addition, Dr. Mangione pointed out, choosing a good technology does not build a personal relationship with patients. The failure of doctors to spend time touching and examining patients—something inherent in the use of a stethoscope—is a major reason for patient dissatisfaction with modern medical care.

It seems to me there is a lesson for dentists in this medical study. Somehow or other, in my early orthodontic training, I formed the erroneous idea that the clinical examination was secondary to the collection and measurement of data produced by panoramic and periapical x-rays, cephalometric tracings, plaster models, diagnostic setups, articulator mountings, occlusograms, photographs, VTOs, etc. It seemed sacrilegious to even hazard a guess about the ultimate diagnosis until I had "studied the records". This nonsense continued until I had the good fortune to come under the influence of Welden Bell,

the quintessential dental diagnostician, who taught me that the clinical examination and history were the most important parts of any diagnostic regimen. Welden felt—and I now see he was correct—that doctors should hone their diagnostic knowledge and skills until they could make accurate diagnoses at chairside more often than not. The primary purpose of lab tests and radiographs was simply to confirm or deny the clinical diagnosis.

Some of my most unsuccessful treatments have been of patients whose records I massaged, pencil-whipped, and manipulated until they satisfied some published norm. My time would have been better spent evaluating the patient's face, soft tissues, and temperament, along with the family's expectations. These are not features that are easily converted to digital measurements, but they can be evaluated accurately and certainly need to be considered from the start.

I believe that overreliance on measurements from diagnostic records—in particular, cephalometric x-rays—has caused most of the disaffection about orthodontic treatment expressed by general dentists. They simply do not like the overtreated faces that orthodontists frequently produce when they rely on cephalometric “standards”.

Lest readers misunderstand, I continue to believe in and routinely make complete records for each patient. I would not want to give up

x-rays, occlusograms, MDFL analysis, VTOs, and the like, because they provide insight that would be difficult to obtain by other means. Nevertheless, orthodontists need to consider the entire patient, and especially the way the mouth works in vivo. No amount of in vitro study can ever substitute for the real thing. Occasionally, I will hear or even read in a professional journal the facetious remark that dentists cannot trust the mouth because it is such a poor articulator. I admit the mouth does not work like a Denar or SAM instrument, but that simply emphasizes the difficulty of artificially reproducing what the mouth's anatomy and physiology do so naturally and easily.

In an age committed to digital technology, it is easy to forget that not everything can be reduced to ones and zeros. As Konosue Matsushita, CEO of Matsushita Electrical Industrial Co., says, “There is still something to be said for maintaining ‘analog’ relationships with customers that allow us to better understand their different needs.”

Digital technology may facilitate communication and understanding, but nothing can substitute for direct, close, and intense contact with the patient at the examination. This “analog” connection is fundamental to accurate diagnosis and successful treatment. Like physicians, we sometimes need to relearn the basics.

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