

Welcome to the world of Minimally invasive dentistry

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Abstract

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Today, one reads of “minimally invasive” procedures in nearly every medical discipline, whether it be plastic surgery, heart surgery, or arthroscopic surgery.

What it is

One definition that describes Minimally Invasive Dentistry (MID) is: the evidence based discipline dealing with oral hard- and soft-tissue-saving procedures, with the primary goal of improving the quality of life through lifelong optimal oral health. Optimal health for a tooth relates to preserving as much of it as possible from destruction. Every invasion needed to restore a tooth portends a weakening of it, especially if more tooth is removed than needed. Dan Ericson of Sweden writes “Minimally Invasive Dentistry (MID) is the application of a systematic respect for the original tissue. This implies that the dental profession recognizes that an artifact is of less biological value than the original healthy tissue. MID is a concept that can embrace all aspects of the profession. The common thread is tissue preservation, preferably by preventing disease from occurring and intercepting its progress by removing and replacing it with as little tissue loss as possible.”

A starting point

When considering a starting point for a philosophy of practice, it could begin with what general dentists do the most—namely, remove decay

and fill a cavity. Figure 1 represents the optimal time to intercede, which

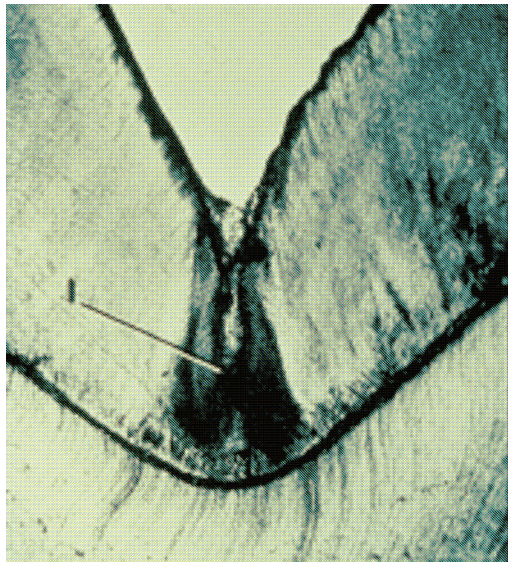


Figure 1. The optimal time to treat is as soon as possible after caries begins to attack tooth structure.

is when the disease Caries has just begun to attack a tooth. With a current Standard of Care, the MID procedure is to discover the disease process at the earliest possible time, using technology (e.g. KaVo's DIAGNOdent laser caries detection system, caries indicator dye) to confirm the optimal time restoration is needed versus remineralization. Once the disease process has been diagnosed in a mouth, it should lead to the controlling of that disease. One of the major tenets of MID is Caries Management by Risk Assessment (CAMBRA), the application of a protocol to identify the cause of the disease, change the habits the patient has, and chemically manage the bacteria at fault.

CAMBRA is perhaps the linchpin of a dynamic change in how dentistry is and will be practiced. The most prevalent disease in the world—tooth decay—has never really been attacked as it could have been. The eight West Coast dental schools all teach CAMBRA, and each school is promoting MID procedures.

Future columns will include the methods that CAMBRA employs to enable your patients to eliminate new decay, thus enhancing their long-term dental health.

Tools of the trade

The technologies enabling MID have continued to develop. From tiny burs for entering decay early and minimally to imaging systems finding caries-caused decay at extremely early stages, each helps us preserve. Once discovered, decay can be approached with protocols that save tooth structure such as a laser-prepared tunnel prep (Figure 2).

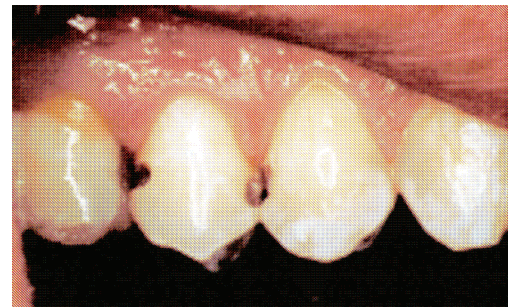


Figure 2. These tunnel preparations created with a laser are exemplary of optimal tooth-saving protocol.

Embracing an MID philosophy leads us to seek out and use technology such as air abrasion, lasers, DIAGNOdent, caries indicator dye, Difotitranillumination, magnification, digital x-rays, implants, Invisalign, apex locators, motorized endo, and endoscopy as well as materials (such as glass ionomer, bone graft materials, bonding restoratives) that make restorations more predictable. These all help us accomplish procedures that continue to be less invasive. Each of you reading this column has probably practiced MID, possibly without thinking about it. It is intuitive to make the smallest preparation possible for restoration, but until every procedure is intended to be an MID approach to a problem, more can be done to learn techniques and science to enhance

one's repertoire. For example, Oakland periodontist and lecturer Dr. John Kwan does much less periodontal surgery than he did in the past. My partner, hygienist and I watched Dr. Kwan use DentalView's Perioscope endoscope to see the pathology-causing plaque in deep pockets being removed successfully with an ultrasonic scaler. The healing he achieves is remarkable. His MID approach is not only tissue saving but hugely appreciated by patients. Finally, I have discovered that sharing the MID aspects of each procedure I do with patients leads to an appreciation for the philosophy. Patients are totally embracing the minimally invasive approach to their dental needs.

摘引

最小侵害牙科(MID)
的一种定义是：它是一种循证学科，研究口腔硬-软组织保持的步骤，其首要目的是通过一生的最佳口腔健康来提高生活质量。
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Resumen

Una definición que describe a la Odontología Mínimamente Invasiva (MID) es: la disciplina que se basa en evidencia, y que trata con procedimientos para salvar tejido oral duro y suave, con el principal propósito de mejorar la calidad de vida a través de una óptima salud oral para toda la vida. Publicado primero en formato modificado en Dent Prod Report 2006; enero: 40-41.