“Many errors are related to violation of the biological width”

An interview with Dr Eduardo Mahn, Chile, on all-ceramic restorations

Restoration using dental ceramics is commonly associated with aggressive preparation and short survival rates, says dentist Eduardo Mahn from Chile. In a live webcast to be presented by the Dental Tribune Study Club in October (2 Oct. 2011, 1 p.m. Indian Standard Time), the implantology and aesthetic dentistry expert will discuss the aesthetic potential and indications for modern ceramics.

Dental Tribune Asia Pacific spoke to him in advance about his conceptions, biological aspects and the reason that all-ceramic restorations should be taught at dental schools.

“I guess the problem starts with the choice of materials, what other factors influence the success of all-ceramic restorations?”

Dr Eduardo Mahn

Dental Tribune Asia Pacific: Your DT Study Club live webcast will be on dental ceramics. In what aspects have these materials improved in recent years?

Dr Eduardo Mahn: That’s a tricky question as dental ceramics have seen quite a development in recent years. Probably the most significant improvement is the strength of more than 1,000 MPa, for example with zirconium oxide, which made the fabrication of multi-unit bridges possible. Evenly significant and even more relevant is the improvement in aspects like aesthetics, versatility and simplicity. Lithium disilicate based ceramics have become available for CAD/CAM and press technology which means that we are now able to make monolithic crowns or veneers without any layering step. This is great news for dental technicians, as these materials help to make the fabrication process much easier and faster. In addition, dentists benefit from lower costs and more predictable clinical results.

“What are the reasons for this?”

I guess the problem starts with the choice of materials. Besides your webcast, will you be offering more lectures on this topic in Asia?

My webcast is going to offer some guidelines on how to choose the right product, but the main principle here is that light does not penetrate thick or opaque ceramics. Therefore, we have to use dual-curing cements such as Multilink N (Vivadent Vivadent) for crowns, bridges, endo-crowns and onlays, as well as thick inlays and onlays. Light-curing cements are recommended for thin restorations such as all kinds of dental veneers.

“Many young dentists are not familiar with working with modern ceramics when they start their careers...”

Where do all-ceramics fit in with regard to the minimally invasive concept?

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All-ceramic restorations are a pillar of the minimally invasive concept. Many errors are related to violation of the biological width, for example. Other commonly underestimated aspects are the effort and precision needed for oral rehabilitation. The clinical success of crowns or veneers depends largely on an accurate diagnosis, proper treatment selection, precise preparation and impression, lab work and clean cementation.

There are plenty of resin cements available on the market. What should clinicians consider when choosing and applying these materials?

There are many new cements from companies which will little experience in the production of dental materials and, therefore, clinicians have to work with trust in established products. It is also important to understand how these chemistry works in order to decide which material is best suited for specific indications.

New digital devices have the potential to improve diagnostics as well as treatment outcomes. What impact can they have on all-ceramic restorations?

Digital radiography is a huge improvement in communicating with laboratories and scanners help transfer data between practices and labs located far from one another. Digital photography is a huge improvement in communicating with laboratories and scanners help transfer data between practices and labs located far from one another. Digital radiography is a huge improvement in communicating with laboratories and scanners help transfer data between practices and labs located far from one another. Digital photography is a huge improvement in communicating with laboratories and scanners help transfer data between practices and labs located far from one another.

Apart from the choice of materials, what other factors influence the success of all-ceramic restorations?

It is important that clinicians always consider the biological aspects of treatment. Many errors are related to violation of the biological width, for example. Other commonly underestimated aspects are the effort and precision needed for oral rehabilitation. The clinical success of crowns or veneers depends largely on an accurate diagnosis, proper treatment selection, precise preparation and impression, lab work and clean cementation.

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