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The Talk of the Town—Multilayered Monolithic Zirconia

Brijesh Maskey

Managing Editor, Journal of Nepalese Prosthodontic Society (JNPS)

Zirconia has become one of the most sought-after materials for dental prostheses. Excellent mechanical properties, biocompatibility and naturally metal free nature are some of the reasons for its popularity which makes it suitable for the wide range of application. Having said so, it was not so long ago, the first generation of opaque zirconia materials, tetragonal stabilized polycrystalline zirconia doped with 3 mol% yttrium oxide (3Y-TZP) were introduced and was limited to framework fabrication only, due to its opacity.¹ Esthetically superior ceramics were veneered over these frameworks to look tooth-like. However, this two-layer system was susceptible to chipping, delamination of the veneering material and fracture.² Fast forward to today, monolithic multilayer zirconia has been developed. In simple terms, these are single zirconia blocks which are inherently pre-layered with different color and translucency gradients³ that can be milled straightforward to natural anatomic form. Thus, completely avoiding the need for veneering. Yes, the optical properties have been enhanced but, there is a trade-off. Significantly lower mechanical properties have been reported for multilayer in comparison to conventional zirconia.¹ Until more evidence are available, the indications of multilayer monolithic zirconia should be considered carefully and based on the clinical experience and specific requirements.

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