Comparative study of antirotational single tooth abutments.

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Identifying the functional and mechanical limitations of single tooth implant systems is essential for the long-term success of the restoration. Three designs with different prosthetic connections were evaluated with their corresponding single tooth abutments for structural integrity and cyclic fatigue. The internal implant octagon was the weakest connection under off-axis impact loading and lateral loading, and the external hexagon implant was rendered unrestorable under lateral loading. Overall, the internal hexagon design was found to provide the highest degree of single tooth stability. This was attributed to the increased material strength of the titanium alloy implant in comparison to the softer CP titanium implant, and to the abutment's longer, 1-degree tapered mating hexagon. _J Prosthet Dent_, 1995 Jan;73(1):36-43.