

New custom-made ceramic post and core using CAD-CAM technology

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Most of esthetic post systems depend on having a prefabricated post, ceramic or resin based, that require drilling of the canal to the size and shape of that post. This is followed by either building a composite core on the post after its cementation or heat pressing ceramic core onto the ceramic post. In rounded canals with sufficient bulk of dentinal walls, a prefabricated post can have intimate adaptation to the prepared canal along its length. Yet in wide, noncircular cross-section or extremely tapered canals with minimum thickness of dentinal walls, these posts will not have intimate adaptability. They depend in their retention on strength of thick layer of cement that fills the gap around them. Therefore, the need for custom-made esthetic post with high strength is crucial. CAD-CAM technology is used to fabricate a custom made ceramic post and core. It utilizes the same initial steps of creating a direct resin pattern of cast post and core. Then instead of investing and casting it into metal, the pattern is scanned, milled and sintered into yttrium tetragonal zirconium polycrystals (Y-TZP) ceramic material. This technique would create a high strength post and core with maximum adaptability to the canal and appropriate esthetics.