DENTAL ADVISOR
Product insights you can trust.

Biomaterials Research Report

R. Yapp, M.S., J.M. Powers, Ph.D.
DENTAL ADVISOR Biomaterials Research Center
3110 West Liberty, Ann Arbor, MI 48103
(734) 665-2020, ext. 111
matt@dentaladvisor.com

Number 37 – May, 2011

Radiopacity of Several Fiber Posts

Purpose – To determine the radiopacity of several fiber post products.

Introduction – Radiopacity of an esthetic fiber post is important to the extent that it allows the post to be clearly identified on an x-ray when surrounded by tooth and bone tissue and core material. Values of radiopacity are reported in equivalent thicknesses of pure aluminum, which are matched to the post by including a standard aluminum step wedge in the radiograph with the post. X-ray photographic grey levels of the different thicknesses of the step wedge are compared to the grey level of the post at the level where the post is cylindrical.

Materials –

FibreKleer 4X Tapered Post *(Pentron Clinical)*
FibreKleer 4X Original Post *(Pentron Clinical)*
RelyX Fiber Post *(3M ESPE)*
FibreKleer 4X Parallel Post *(Pentron Clinical)*
DT Light-Post Illusion X-RO *(Bisco Dental Products)*
ParaPost Fiber Lux *(Coltene/Whaledent)*

Methods – Post specimens were radiographed with a Gendex GX-770 digital x-ray unit set at 70 KVp for 7 seconds along with a pure aluminum step wedge. Grey levels of the posts were measured utilizing the Photoshop histogram function and were compared with those of the step wedge to determine an equivalent thickness of aluminum for each post. Measurements were taken at the major diameter of each post. Means and standard deviations were calculated.

Results – Values of radiopacity of the posts are listed in the chart below. The posts are compared in Figure 1.

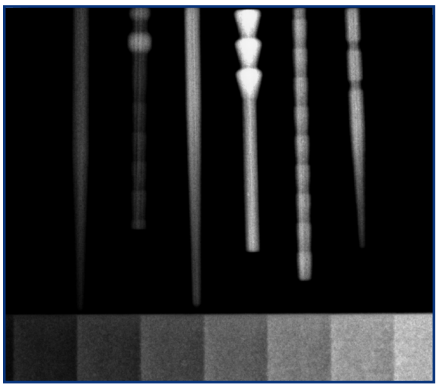

Figure 1: Posts from left to right: RelyX Fiber Post, ParaPost Fiber Lux, D.T. Light-Post X-RO Illusion, FibreKleer 4X Parallel, FibreKleer 4X Original, and FibreKleer 4X Tapered.

Post	Radiopacity, mm Al (SD)
RelyX Fiber Post	2.2 (0.0)
ParaPost Fiber Lux	1.9 (0.1)
D.T. LIGHT-POST X-RO Illusion	3.7 (0.0)
FibreKleer 4X Parallel	4.1 (0.0)
FibreKleer 4X Original	3.8 (0.1)
FibreKleer 4X Tapered	3.9 (0.1)

Conclusions – The three ***FibreKleer 4X Fiber Posts*** *(Pentron Clinical)* were significantly more radiopaque than either ***RelyX Fiber Post*** or ***ParaPost Fiber Lux. FiberKleer 4X Parallel Post*** was the most radiopaque of all of the posts tested.