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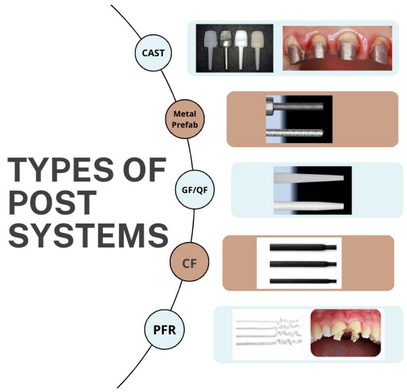
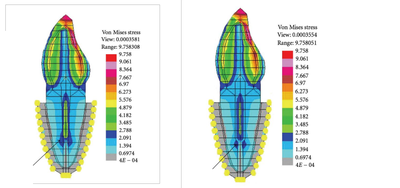
Comparison of Various Post Systems in Endodontically Treated Teeth

Viraj Ketkar (D24359), Hemal Pandya (D24364), Fariba Yaghoobi (D24376)
Department of Preventative and Restorative Dentistry, University of the Pacific, Arthur A. Dugoni School of Dentistry, San Francisco

OBJECTIVE

One of the critical components of tooth restoration after endodontic treatment is the post-system. This study aims to compare various post-systems used in endodontically treated teeth.





th position	Totality	Success rate (%)
erior teeth	101	95
nolar	69	91.3
ar	91	90.2
il	261	92.4

Success rates of CAD/CAM milled Zr posts
(Follow-up : 3-6 years)

Fiber-glass posts with composite cores - highest fracture resistance values	915.70±323 N
Zirconia post system showed the lowest resistance	435.34±220 N
Ni-Cr casting post and cores	780.59±270 N

Dentin Post:

Biological dentin posts made from extracted tooth allocate for adaptation to the root canal and would not attempt stress to the dentin, since they contain the same biomechanical properties as the restored teeth.

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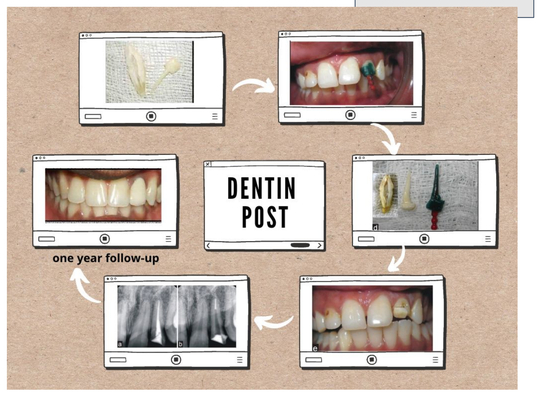
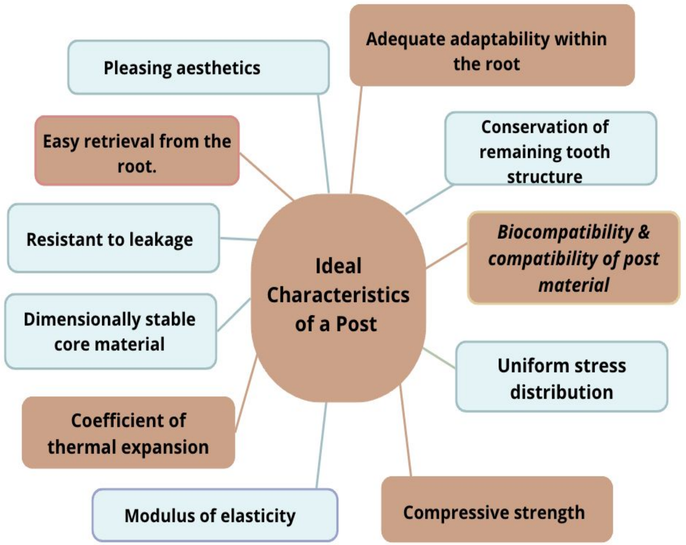
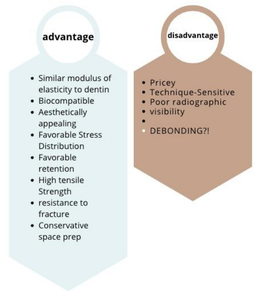




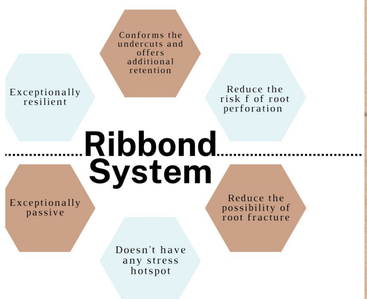


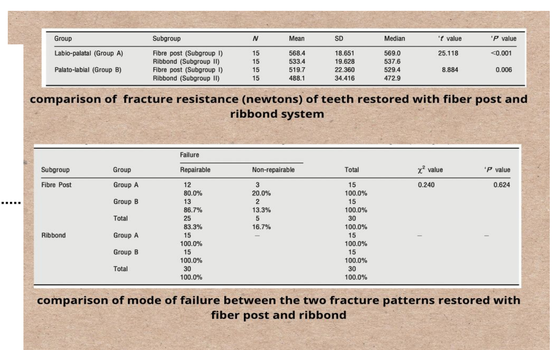
Survival rate of metal post based on study published in journal of Proshthodontics in 2022.

Tooth position did not affect differences in the survival and success rates when restoring endodontically treated teeth with metal posts.

The overall survival rate was 78.1% for metal posts. It represent reliable materials when a significant amount of coronal tooth structure is missing and treatment with a post is indicated.

The use of metal posts can be associated with an increased rate of root fracture.





Group	Subgroup	N	Mean	SD	Median	t' value	'P value
Labio-palatal (Group A)	Fibre post (Subgroup I)	15	568.4	18.651	569.0	25.118	<0.001
	Ribbond (Subgroup II)	15	533.4	19.628	537.6		
Palato-labial (Group B)	Fibre post (Subgroup I)	15	519.7	22.360	529.4	8.884	0.006
	Ribbond (Subgroup II)	15	488.1	34.416	472.9		

comparison of fracture resistance (newtons) of teeth restored with fiber post and ribbond system

Subgroup	Group	Failure: Repairable	Failure: Non-repairable	Total	χ^2 value	'P value
Fibre Post	Group A	12	3	15	0.240	0.624
		80.0%	20.0%	100.0%		
	Group B	13	2	15		
		86.7%	13.3%	100.0%		
	Total	25	5	30		
		83.3%	16.7%	100.0%		
Ribbond	Group A	15	–	15	–	–
		100.0%		100.0%		
	Group B	15		15		
		100.0%		100.0%		
	Total	30		30		
		100.0%		100.0%		

comparison of mode of failure between the two fracture patterns restored with fiber post and ribbond

CONCLUSION

The choice of post-system should be based on the clinical situation and the patient's needs. Fiber-reinforced posts may be the preferred choice in situations where retention is crucial. In contrast, custom-made metal posts may be preferred when the tooth is under heavy occlusal load. Zirconia posts may be preferred in esthetically demanding cases where good marginal adaptation is critical.

similar clinical performance and **failure rate** of ETT restored with either cast metal or fiber post retained restoration!!(2021)(2022)

no significant differences for the anterior region, posterior region, **root fracture, and debonding**!!! Additionally, Fiber Posts showed **similar failures** compared with those of **cast and prefabricated Metal Posts**!! (2021)

in term of comparison of **ribbond system with fiber post** Teeth restored with fiber post has a higher resistance to fracture as compared to Ribbond post system. However, teeth restored with Ribbond posts exhibited 100% repairable failures upon load application. The pattern of fracture has no influence on the reparability of the specimens following load application, across both post systems.(2016)