

The endocrown restoration: function and esthetic for molars with endodontic treatment.

La restauración endocrónica: función y estética para molares con tratamiento endodóntico.

Juan A. Fernández-Tarazona.^{1,2}
Zady J. Torres-Rivera.³

Affiliations:

¹Universidad Privada Juan Pablo II. Escuela Profesional de Odontología. Lima, Perú.

²Universidad Nacional Hermilio Valdizán. Escuela Profesional de Odontología. Huánuco, Perú.

³Universidad Privada de Huánuco. Escuela de Odontología. Huánuco, Perú.

Corresponding author: Juan A. Fernández Tarazona. Jr. Los Ciruelos N° 180, Pillco Marca. Huánuco, Perú. **Phone:** (51) 62517830 - (51) 90911017. **E-mail:** jaft57@hotmail.com

Cite as:

Fernández-Tarazona JA & Torres-Rivera ZJ.

The endocrown restoration: function and esthetic for molars with endodontic treatment.

J Oral Res 2020; Perspectives in Oral Science (1):x-x

Doi:10.17126/joralres 2020.xxx

The rehabilitation of teeth with endodontic treatment is a challenge in the field of restorative dentistry due to the diversity of clinical situations, the biomechanical and histological characteristics of endodontically treated teeth and the current restorative proposals.¹

There is much discussion and controversy in the literature about the ideal restorative treatment. The current consensus focuses on the need to preserve healthy dental structures, perform less invasive restorative procedures supported by defined adhesive procedures, establishing an adequate therapeutic gradient that allows stabilizing the tooth / restoration complex as well as increasing dental surfaces for adhesion which allows for a treatment procedure with chances of long-term success.^{1,2}

Conventionally, the rehabilitation of posterior teeth with endodontic treatment was associated with the use of crowns and posts, the latter were used due to the need of obtaining an anchorage in the radicular conducts which often led to the weakening of the root remnant or root perforations and to the loss of these teeth in the short term.³

The endocrown restorations or adhesive endodontic restorations are a restorative option for the treatment of molars with endodontic treatment; they are basically partial crowns that take advantage of the geometric configuration of the pulp chamber and the dental remnant to obtain mechanical retention associated with micro-mechanical retention by procedures and adhesives that convert these types of restorations into a functional "mono- block" together with the teeth.^{3,4}

The preparation focuses on both the pulp chamber and the coronal remnant to provide anchorage to the restoration. The lateral walls are prepared to obtain parallelism or convergence to the occlusal surface and a supra gingival cervical margin along the entire perimeter of the tooth. A cuspal coverage should be made on walls that do not have a minimum thickness of 1.5 to 2mm. Ideally a healthy coronal remnant should be maintained at the level of the cervical third around the tooth to obtain a "ferrule effect" so that the future restoration will be seating and surrounding the tooth, restoring resistance to the dental remnant.⁵

The endocrown restorations are made as injected ceramics types or from ceramic blocks that will be processed by CAD / CAM technology. For the adhesive process, the ceramic employed should be a sensitive ceramic to the etch (hydrofluoric acid) so that the dental remnant and the restoration

can be adhesively integrated and can be cemented using resin cements, allowing for the reduction of adhesive interfaces and thus for the action of the "mono-block" between the tooth and the restoration, in addition to reducing the conventional failures for the existence of several adhesive interfaces.⁶

Finally, we suggest considering the endocrowns as an alternative of lower biological cost in relation to the posts and crowns for the restoration of molars with previous endodontic treatment, providing a stable and a durable adhesive restoration, with good clinical performance over time.⁷

REFERENCES.

1. Carvalho MA, Lazari PC, Gresnigt M, Del Bel Cury AA, Magne P. Current options concerning the endodontically-treated teeth restoration with the adhesive approach. Braz Oral Res. 2018;32(suppl 1):e74.
2. Magne P, Carvalho AO, Bruzi G, Anderson RE, Maia HP, Giannini M. Influence of no-ferrule and no-post buildup design on the fatigue resistance of endodontically treated molars restored with resin nanoceramic CAD/CAM crowns. Oper Dent. 2014;39(6):595-602.
3. Cedillo JJ, Cedillo JE, Espinosa R. Endocorona; Reporte de un caso clínico. RODYB. 2014;3(3):23-31.
4. Belleflamme MM, Geerts SO, Louwette MM, Grenade CF, Vanheusden AJ, Mainjot AK. No post-no core approach to restore severely damaged posterior teeth: an up to 10-year retrospective study of documented endocrown cases. J Dent. 2017;63(1): 1-7.
5. Sevimli G, Cengiz S, Oruc MS. Endocrowns: Review. J Istanbul Univ Fac Dent. 2015;49(2):57-63.
6. Menezes-Silva R, Villavicencio Espinoza CA, Atta MT, De Lima Navarro MF, Kiyoshi Ishikiriyama S, Lia Mondelli RF. Endocrown: a conservative approach. Braz Dent Sci. 2016; 19(2):121-31.
7. Sedrez-Porto JA, Rosa WL, da Silva AF, Münchow EA, Pereira - Cenci T. Endocrown restorations: a systematic review and meta-analysis. J Dent. 2016;52 (1):8-14.