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ORIGINAL ARTICLE

Endodontically posterior crown fracture

Endodontically treated posterior teeth restored with or without crown restorations: A 5-year retrospective study of survival rates from fracture

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Abstract

Aim: The aim of the present study was to investigate survival rates from fracture of endodontically treated posterior teeth (ETT) restored with or without crowns with recall periods of up to 5 years.

Methods: ETT with single-unit crown or resin composite restorations were studied based on the inclusion criteria. Restoration, tooth structure loss, adjacent teeth, fracture, and restorability were recorded. Survival rates from fracture were calculated, and risk factors were identified.

Results: Overall, survival rate of ETT with crowns (92.2%) was significantly higher than resin composites (77.4%) ($P < 0.05$). ETT with one or two surface loss/es and two adjacent teeth had a high survival rate of 86.9%, which was not significantly different to ETT with crowns ($P \geq 0.05$). Restoration and adjacent teeth were identified as significant factors. The majority of fractured ETT with resin composites were restorable, whereas those with crowns were unrestorable. Survival rates from unrestorable fracture were not significantly different between the crown (93.1%) and resin composite (96%) ($P \geq 0.05$).

Conclusions: The survival rate from the fracture of ETT restored with crowns was significantly higher than ETT restored with resin composites, but was not significantly different to ETT with one or two ETT with one or two surface loss/es and two adjacent teeth. ETT restored with resin composites had mostly restorable fracture, whereas ETT with unrestorable fracture were similar between the two restorations.

KEYWORDS

crown, endodontically treated posterior teeth, resin composite, survival rate, tooth fracture

1 | INTRODUCTION

Fracture of endodontically treated posterior teeth (ETT) is associated with the amount of remaining tooth structure.[1,2] ETT are weakened by the loss of tooth structure from dental caries, tooth fracture, or pre-existing restoration, but not from endodontic procedures.[3] With a significant loss of tooth structure, ETT should receive a cuspal-coverage restoration to prevent unrestorable fracture.[4,5] ETT restored with crowns within 4 months had a significantly higher survival rate than ETT with delayed restoration placement.[5]

A recent systematic review found that ETT with minimal-to-moderate loss of tooth structure can be restored with direct resin composite restorations,[6] with the survival rate against fracture found to be as high as ETT restored with crowns. According to a randomized

