

ECR upper incisor and immature apex

The patient was suffering from an intermittent dull ache from his front tooth for the past 6 months which progressively worsened

The patient had a history of trauma to the upper maxillary incisors after he was hit in the face with a hockey stick and 'chipped' both of his front teeth which were subsequently restored with composite restorations. A year ago the patient had porcelain veneers placed to replace the composite restorations. Six months after the veneers were placed the patient developed a constant ache localized to the 21.

Cone beam computed tomography (CBCT)

A small volume CBCT scan of tooth showed the size of the periapical radiolucency in more detail. The scan revealed that the lesion was palatal and there was a small communication with the periodontal ligament. The lesion did not directly involve the root canal. The scan also confirmed the presence of a periapical radiolucency.

A diagnosis of chronic apical periodontitis associated with a necrotic pulp and external cervical resorption was reached regarding tooth 21. This lesion was diagnosed as a IAD according to the new 3D classification (Patel et al 2017).

Minimal mechanical preparation was required and the canal was copiously irrigated with sodium hypochlorite and EDTA solution. Tooth 21 was obturated with a 6-7mm apical plug of Mineral Trioxide Aggregate and backfilled with gutta-percha and Pulp Canal Sealer, using a warm vertical condensation technique.

Surgical repair of resorptive defect tooth 21

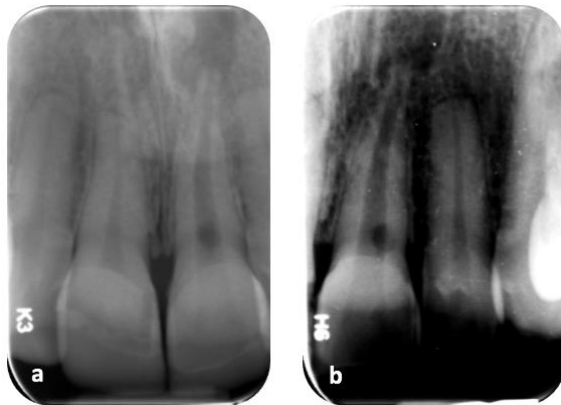
A palatally intrasulcular incision was made from tooth 12-22 and a full thickness palatal envelope flap was raised to expose the resorptive defect. The cavity was debrided using a rose head bur (size 3) in a contrangle slow speed handpiece. The defect was restored with glass ionomer cement (Fuji IX). The flap was repositioned and sutured using 5-0 Ethylon monofilament suture. A final radiograph to assess the correct restoration placement was taken.

This case was managed by the placement of an MTA apical plug which has been shown to be successful in cases of apexification and conducive to apical healing (Felippe et al. 2006). Traditionally such cases were managed through long term calcium hydroxide applications however studies have shown that this has been associated with an increased incidence of fracture (Andreasen 2002)

Resorption is an aggressive process resulting in the loss of dental hard tissue (Patel & Pitt-Ford 2007) by osteoclastic activity. ECR can present as a cervical cavitation, an irregularity in the gingival contour and/or as a pink discolouration of the undermined enamel. Most commonly, as in this case it is often detected as an incidental radiographic finding (Patel et al 2017).

Heithersay's classification of ECR (1999b) is based upon the use of traditional radiography and thus categorises the lesion in a two-dimensional manner. This is problematic when assessing the lesion from an axial or sagittal view or when there is circumferential spread or pulpal involvement. When diagnosing such lesions cone beam CT is an essential diagnostic

tool (Patel & Dawood 2007) which allows the true extent of the lesion to be assessed and aids in treatment planning. It has been shown to have higher sensitivity, specificity and accuracy than periapical radiographs when assessing ECR lesions (Vaz de souza et al 2017). The new 3D classification allows for true assessment of the lesion height, circumferential spread and proximity to the root canal (Patel et al 2018). This aids in both diagnosis and management of such cases.



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