

the outline of the cyst in the panoramic radiograph. In the ideal situation, advanced imaging such as cone-beam computed tomography (CBCT) should have been performed to assess the lesion's relationship with the maxillary sinus in three dimensions. However, unfortunately, despite repeated attempts, the patient did not respond and was lost to follow-up. Based upon the incidental radiographic findings, the definitive diagnosis was a huge cystic variant of dilated odontoma.

Although sometimes described as a type of odontoma, a dilated odontoma may actually represent the most severe expression of dens invaginatus.^{1,2} Radiographically, the tooth is severely deformed, having a circular or oval shape with a radiolucent interior. Similar in appearance to complex odontoma, a dilated odontoma is a single calcified structure, however, it has a more radiolucent central portion, giving it an overall form like a 'doughnut'.¹

Dilated odontoma are rare, with a prevalence ranging from 0.25% to 7.74%. They most commonly affect the

maxillary permanent incisors and very rarely occur in the posterior region, let alone in a supernumerary tooth.² Spontaneous eruption of dilated odontoma is also an extremely rare occurrence which, to the best of our knowledge, has only been reported once in the literature.³ The present case is a rarity, as it is a partially erupted, supernumerary dilated odontoma located in the right maxillary posterior region and it is also remarkably large in size, being one of the largest reported cases in the literature to date. Furthermore, there has never been reference to a dilated odontoma being involved simultaneously with both the maxillary sinus and a cyst.

A rare dilated odontoma is of interest to a general dentist because of its clinical implications. If left untreated, it can impede the eruption of permanent teeth and may lead to cyst formation.² Furthermore, removal of such a tooth, especially so large, is a morbid procedure, and would likely be performed under general anaesthesia by an oral and maxillofacial surgeon. With our case, there is a high risk of creating an oro-antral

communication (OAC)/oro-antral fistula (OAF), as it is in close proximity or almost occupying the maxillary sinus (which could be confirmed by a CBCT scan).

References

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Abstracts

Tong HJ, Rajan S, Bhujel N, Kang J, Duggal M, Nazzal H. Regenerative endodontic therapy in the management of nonvital immature permanent teeth: a systematic review – outcome evaluation and meta-analysis. *J Endod* 2017; **43: 1453–1464.**

The management of immature permanent teeth with a necrotic pulp has always been a challenge within the field of endodontics. Teeth with incomplete root development have short roots with thin root walls predisposing them to a high risk of fracture. Regenerative Endodontic Therapy (RET) has been proposed to facilitate root development in immature teeth with necrotic pulps and has the capacity to overcome the limitations of conventional endodontic treatment in these teeth.

This review critically appraised the literature on using RET and assessed clinical and radiographic outcomes. The authors searched a variety of electronic databases for English language studies, however, the search terms were not specified, nor were the specifics on study selection. Study quality was assessed

independently by two reviewers. Fourteen studies were included (5 RCTs, 2 cohorts, 1 case-control and 6 uncontrolled prospective studies). Meta-analyses using a random effects model were performed to combine the results of the 5 RCTs.

In total, 411 teeth were analysed, with the majority of these teeth being incisors (9/411 were molar teeth). The loss of vitality was mainly reported as a result of trauma; however, 8 studies reported other causes, including caries and developmental abnormalities. Two main regenerative techniques were used which include blood clot (BC) and platelet-rich plasma (PRP) technique. Where possible, these were compared to a control (conventional treatment) within the included studies.

Overall tooth survival was 100% in all but 2 studies and resolution of clinical signs and symptoms was high, irrespective of the intervention or control group.

The results of the study would suggest improved outcomes using the RET in the form of success rates for tooth survival and resolution of periapical pathosis. However, results for apical closure and continued root development were inconsistent (demonstrated in the meta-

analysis), which is the most desirable outcome of RET. Another issue raised in the review was the high rate of internal tooth discoloration after RET treatment, which was reported in 50% of studies (this being attributed to minocycline, bismuth oxide and/or MTA usage during treatment).

This review would suggest that RET is a promising endodontic technique. However, the review is limited by the lack of studies reporting outcomes beyond 18 months of follow-up. Additionally, the authors reported a lack of understanding with regards to the treatment sequencing and timing of treatment and the effect that this could have on the overall outcome of using the RET technique.

The authors concluded that 'As more evidence becomes available, modification of RET techniques and its advocacy will evolve. It is the clinician's role to help ensure that the new protocols advocated are both clinically practical and acceptable to the young patient.'

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