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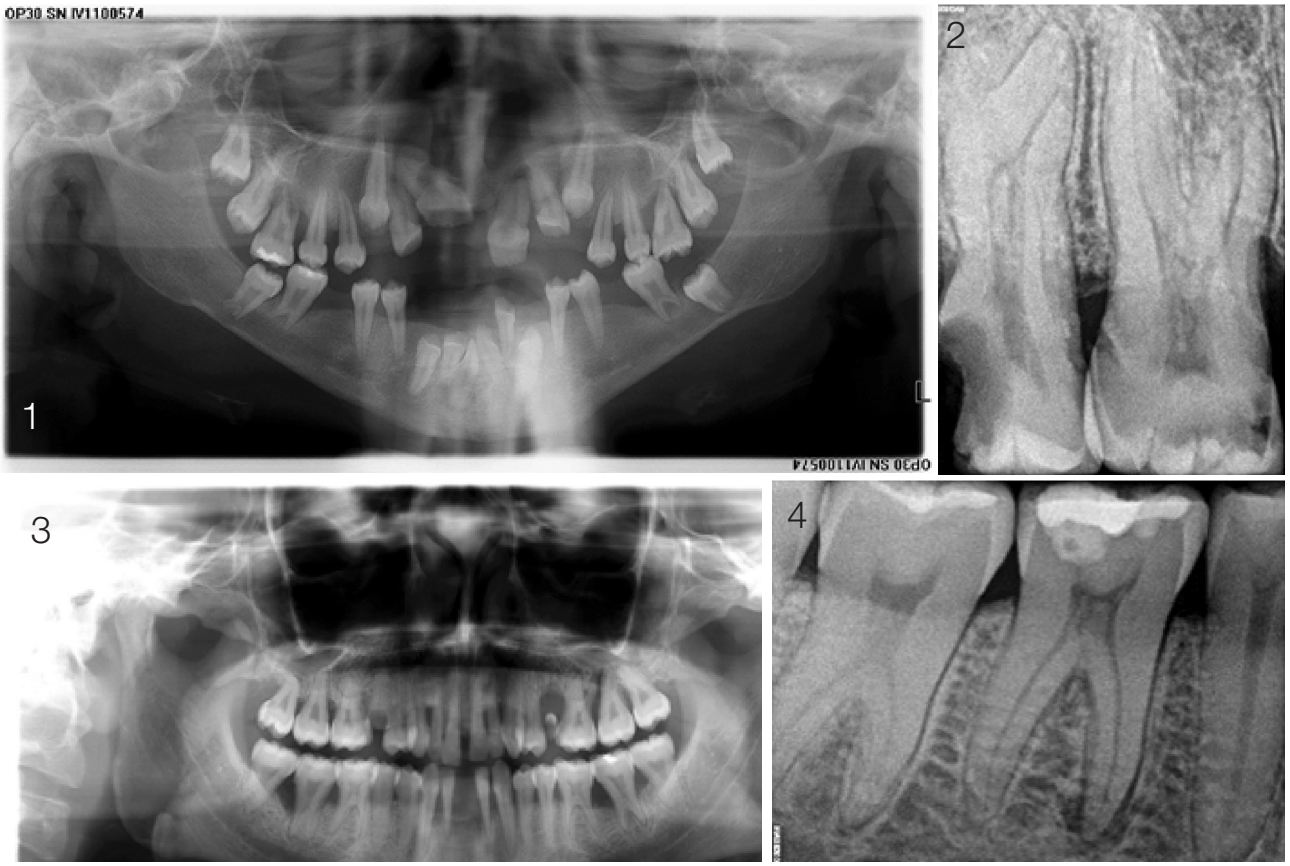
CASE

Below are four patients that presented to our facility for dental treatment. In all four patients, Taurodontism of varying degrees was noted as incidental findings.



INTERPRETATION

Taurodontism is characterised by an altered internal dental pulp morphology that results in an elongated pulp chamber of varying degrees[1] with a more rectangular-shaped pulp chamber.[2] As this phenomenon affects the root and pulp morphology and not the crown, radiographs play an importance in the identification thereof. Taurodontism can occur unilaterally or bilaterally and often involves the permanent teeth more than the primary teeth. [3] As the vast majority of associated diseases are related to ectoderm development, one can assume that Taurodontism is a manifestation of the disorder of ectoderm development.[2] Taurodontism can be classified into three broad types using a Taurodont Index which measures the distance from the roof of the pulp chamber to the apex of the tooth.[1] The three types are hypo-, meso- and hyper-taurodont, with hypotaurodont the mildest form and hypertaurodont the most severe form. In mesotaurodontism, the pulp chamber is moderately enlarged resulting in shorter roots, but the roots still remain separated from each other.[3] Image 4 displays tooth 47 with a moderate form of pulpal enlargement and can therefore be classified as a mesotaurodont tooth. In hypertaurodontism, the pulp chamber enlargement reaches the apical area of the root. Images 1 (the posterior molar teeth), 2 and 3 (the posterior molar teeth) are examples of hypertaurodontism. The prevalence of Taurodontism ranges amongst different population groups, with some studies reporting

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a prevelance of 46%.[3] In recent years Taurodontism has been linked to a number of syndromes and conditions such as Down's syndrome, Tricho-dento-oseous syndrome, amelogenesis imperfecta and Klinefelter syndrome to name a few.[2,3] Taurodontism has been considered a marker for other non-syndromic abnormalities such as cleft lip and palate.[1,3] Clinically a taurodont tooth will appear sound, but due to the altered root and pulp morphology there are risks associated. In affected teeth challenges may arise particularly during pulp therapy and root canal treatment due to the increased bleeding in the enlarged pulp and altered root canal configuration. As Taurodontism may be an indication of an underlying, undiagnosed genetic condition, it is important for general dentists to detect affected teeth and be aware of this phenomenon.[3]

Authors declaration

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Ethics approval: This study was approved by the University of Pretoria, Faculty of Health Sciences Research Ethics Committee (Reference no.: 543/2022). All procedures followed the ethical standards of the Helsinki Declaration of 1975, as revised in 2008.

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