

Developmental Disorders Affecting Jaws



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KEYWORDS

- Microdontia • Macrodonia • Syndromes • Hypoplasia • Ectodermal dysplasia
- Hemifacial hypertrophy • Growth disturbances

KEY POINTS

- Teeth are housed in mandible and maxilla and are known to undergo variations in clinical presentation depending on the degree of abnormality during growth and development. It is essential to identify these variations in normal anatomy so that appropriate treatment is initiated to address the anomaly.
- This article focuses on the diagnostic radiographic interpretation and strategies to include pertinent differential diagnosis.
- The developmental anomalies can range from mere increase or decrease in the number of teeth to that of atrophy or hypertrophy of the entire jaws. These changes might be accompanied by several systemic abnormalities that constitute a “syndrome.” Dentists may encounter such patients in their dental practice and should be prepared to diagnose and manage such cases.
- Also discussed is the importance of advanced imaging and its appropriateness in the diagnosis and interpretation.

DEVELOPMENTAL DEFECTS OF TEETH SIZE

Macrodonia

In macrodonia the teeth are larger than normal.^{1,2} Generalized macrodonia, which is a rare condition, is characterized by the appearance of enlarged teeth throughout the dentition.^{1,2} This may be absolute, as seen in pituitary gigantism, or it may be relative because of relatively small maxilla and mandible, which could result in crowding of teeth and possibly an abnormal eruption pattern caused by insufficient arch space.^{1,2}

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Localized macrodontia is characterized by an abnormally large tooth or group of teeth (**Fig. 1**).^{1,2} This relatively uncommon condition usually is seen with mandibular third molars.^{1,2} In the rare condition known as hemifacial hypertrophy, teeth on the affected side are abnormally large compared with the unaffected side.^{1,2}

Radiographic findings

Radiographs reveal the increased size of unerupted and erupted macrodont teeth. The shape of the tooth is usually normal but in some cases may exhibit a mildly distorted morphology that may resemble gemination or fusion.¹

Treatment

Microdontic teeth require no treatment other than cosmetic intervention. Orthodontic treatment may be necessary in case of malocclusion.¹

Microdontia

Affected teeth are smaller than normal.^{1,2} As in macrodontia, it may involve all teeth or be limited to a single tooth or group of teeth.^{1,2} In Generalized microdontia all teeth in the dentition appear smaller than normal and can be absolute as seen in patients with pituitary dwarfism, or relative, where teeth appear smaller in relation to large maxilla and mandible.^{1,2}

In localized microdontia, a single tooth is affected and appears smaller than normal.^{1,2} The shape of these microdont is often altered with the reduced size.^{1,2} This phenomenon is most commonly seen with maxillary lateral incisors where the



Fig. 1. Maxillary central periapical radiograph showing macrodontia affecting left central incisor.

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