

Dentin Dysplasia Type I: A Case Report

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Abstract

Dentin Dysplasia Type I (DD-I), or radicular dentin dysplasia, is a rare hereditary dentin disorder characterized by abnormal root development and pulpal obliteration despite normal crown morphology. Radiographic findings commonly include short, blunted, or absent roots with increased mobility and periapical pathology in non-carious teeth. Diagnosis is often delayed due to minimal coronal abnormalities.

This case report describes a 13-year-old male with clinical and radiographic findings consistent with DD-I who underwent full-mouth rehabilitation under general anesthesia. This case highlights the importance of early radiographic recognition, multidisciplinary management, and long-term treatment planning to preserve dentition and alveolar bone.

Background

- Frequently **underdiagnosed due to normal crown appearance**
- Patients often present late with **mobility, abscess, or tooth loss**
- Endodontic treatment is often limited or **not feasible**
- Prognosis of affected teeth is **unpredictable**
- Management focuses on **preservation, infection control, and long-term planning**
- Requires **multidisciplinary care**

Diagnosis

Clinical:

- Normal crown morphology (in both primary and permanent dentition)
- Generalized mobility
- Gingival inflammation

Radiographic:

- **Short/blunted or absent roots**
- Pulpal obliteration with crescent-shaped pulp remnants
- Periapical lesions in non-carious teeth
- **Most cases are identified incidentally during radiographic evaluation**

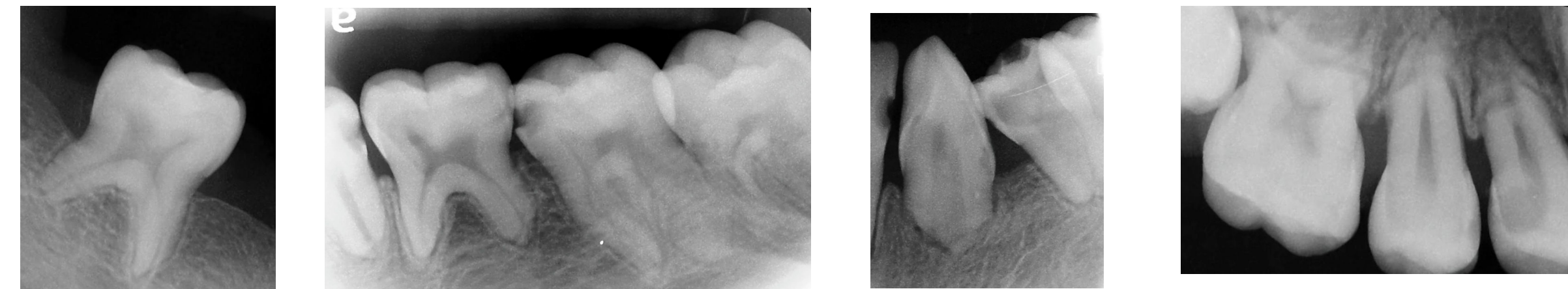
Multidisciplinary Approach

Pediatric dentistry → diagnosis and coordination

Orthodontics → deferred or limited

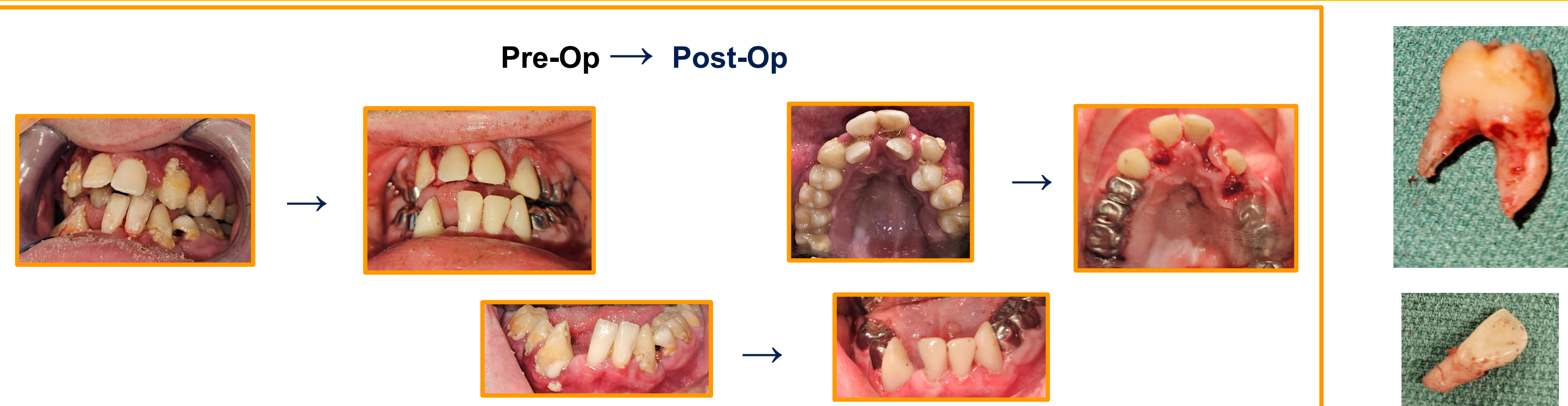
Prosthodontics → future rehabilitation

Radiographic Presentation



Panoramic and periapical radiographs demonstrating generalized root hypoplasia, blunted roots, and pulpal obliteration throughout the permanent dentition. Radiographic findings were critical in establishing the diagnosis of Dentin Dysplasia Type I.

Clinical Photos



Case Report

Patient: 13-year-old male with autism and ADHD referred for extensive dental needs and treatment under general anesthesia

Clinical Findings

- Gross dental caries with generalized enamel decalcification
- Severe gingivitis and poor oral hygiene
- Generalized mobility, greatest in maxillary anterior teeth
- Severe crowding and malocclusion
- Anterior crossbite involving #7 and #10
- Teeth #5, #7, #10, and #15 deemed non-restorable

Radiographic Findings

- Generalized root hypoplasia/aplasia
- **Blunted roots** with pulpal obliteration
- External root resorption of #15 associated with ectopic eruption of #16
- Findings consistent with Dentin Dysplasia Type I

Treatment Summary:

- Full-mouth rehabilitation under general anesthesia
- Stainless steel crowns on posterior teeth
- Composite and strip crowns on anterior teeth
- Indirect pulp therapy as indicated
- Extractions of **#5, #7, #10, and #15**

Dental Management

Clinical Considerations

- Compromised roots limit **endodontic treatment** and long-term retention
- Increased risk of mobility, periapical pathology, and early tooth loss
- Difficulty maintaining stable occlusion

Management & Outcome

- Full-mouth rehabilitation under general anesthesia
- Extraction of non-restorable teeth
- Preservation of remaining dentition and alveolar bone
- Initiation of transitional prosthetic planning

Ongoing Care

- **Preventive recall every 3–4 months**
- **Continued radiographic monitoring**
- Extraction of infected or non-restorable teeth as needed
- Delay non-essential extractions when feasible to preserve alveolar bone

Conclusion: Dentin Dysplasia Type I should be considered in patients presenting with normal crown morphology but unexplained mobility and root hypoplasia. Early radiographic recognition is critical for diagnosis, preservation of dentition, maintenance of alveolar bone, and long-term multidisciplinary rehabilitation planning.

References

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