

## **Unilateral Fusion of Permanent Dentition - A Case Report**

**Amit Wadhawan<sup>1,\*</sup>, Anamika Sharma<sup>2</sup>, B. P. Khattak<sup>3</sup>**

<sup>1</sup>Reader, <sup>2</sup>Professor & Head, <sup>3</sup>Director PG Studies, Dept. of Periodontics,  
Subharti Dental College & Hospital, Meerut.

**Corresponding Author:**

Email: dramit21@gmail.com

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### **Abstract:**

Fused teeth arises through union of two normally separated tooth germs which can be either complete or incomplete. In some occasions, two independent pulp chambers and root canals can also be seen. Its occurrence in permanent dentition is 0.1%. Once fusion has been diagnosed, careful monitoring is required as it may lead to many complications like esthetics, spacing, dental caries or periodontal breakdown.

**Keywords:** Fusion, Mandibular incisors

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### **Introduction:**

Fusion is the process in which union occurs between two tooth germs during the process of tooth formation. The occurrence in permanent dentition is (0.1%), in primary dentition (0.5%) with a rare chance of bilateral involvement in the primary dentition (0.02%)<sup>1,2</sup>. The most common problem related to fused teeth is hypodontia of the permanent dentition which has been observed in 50% of affected cases<sup>3</sup>.

The purpose of this article is to highlight the rarity of the condition and to evaluate the presence of any associated pathology.

### **Case Report:**

A 22yr old male patient was referred from Dept. of Orthodontics for oral prophylaxis and hygiene maintenance programme whose medical and family history was non contributory. His intraoral examination revealed unilateral presence of unusually large teeth in lower right region. It was strongly suggestive of conjoined permanent central and lateral incisors (#41 and 42) (Fig.1,2). No other missing teeth were observed both clinically and radiographically.



**Fig.1:** Fused tooth #41 & 42



**Fig.2:** Labiolingual Groove

Radiographic evaluation of mandibular incisor region revealed fused #41 and 42 with a single root, pulp chamber and root canal (Fig.3).



**Fig.3:** Single pulp chamber and root canal

Treatment provided was complete scaling and root planing with periodic observation of as they are prone to periodontal breakdown.

**Discussion:**

The fused teeth arise through union of two normally separated tooth germs<sup>4</sup>. It is reported that the condition is more common in primary than in permanent dentition. It is considered that it may be due to the adjoining tooth germs coming in contact as a result of pressure or fusion. If it does occur, it is between two tooth germs of the normal series, in which case there is a tooth missing or it may be due to the fusion of a tooth germ of the normal series with the additional tooth germ<sup>5</sup>. Fusion can be classified into two types, complete or incomplete. Complete fusion begins before calcification and crown incorporates features of both participating teeth with regard to their enamel, dentine, cementum and pulp. The incomplete fusion occur at later stage and tooth might exhibit separate crowns and fusion may be limited to the roots alone with the pulp canals fused or separate<sup>6</sup>. Radiographically, the tooth may have separate or fused canals<sup>7</sup>.

The possible problems related is spacing, esthetic concerns, occlusal disturbances and periodontal conditions brought about by fused teeth<sup>8</sup>. Hence careful monitoring of the condition is recommended.

**Conclusion:**

Fusion is a rare developmental anomaly of the teeth seen in both permanent and primary dentition. They may produce several complications and hence they should be diagnosed and managed properly.

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