Unilateral fusion of mandibular permanent lateral incisor with canine: A report of a rare case

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Abstract
Fusion is a developmental anomaly which occurs due to a union of one or more adjacent teeth during morpho-differentiation of the dental germs. Early diagnosis of this condition is important because it may cause clinical problems, such as esthetic concerns and arch asymmetry. These anomalies may be unilateral or bilateral and may affect either dentition, although the deciduous
teeth are more commonly affected. This report describes a rare case of unilateral fusion between the mandibular permanent lateral incisors and the canine. Only few cases have been previously reported in the English literature. Hence this article aimed at reporting a case of this rare condition and evaluating the presence of any associated pathology.

**Key words:** Canine, double teeth, fusion, lateral incisor, mandibular

**INTRODUCTION**

Developmental dental anomalies are an important category of dental morphologic variation. These anomalies result from disturbances during initiation, morphodifferentiation of tooth germs, apposition of hard dental tissues and during eruption of teeth. Abnormalities of histodifferentiation occur at a later stage in development than abnormalities of morphodifferentiation; in some disorders both stages of differentiation are abnormal.[1]

Morphoanatomic changes in teeth might be divided according to the site of their occurrence, i.e., tooth crown, roots, and root canals. Fusion and gemination are irregularities in tooth development.[2]

Definitions of fusion and gemination are based on how the teeth develop. Fusion arises through the union of two normally separated tooth germs, whereas gemination arises from an attempt at division of a single tooth germ.[3] Fused teeth are usually found in the mandible, while cases of geminated teeth are more frequently seen in the maxilla.[4] For a differential diagnosis between these anomalies, the dentist must carry out a highly judicious radiographic and physical examination.

These types of anomalies may be unilateral or bilateral and may affect either dentition, although the primary teeth are more commonly affected. Bilateral dental fusion in the primary dentition is a rare dental anomaly.[5] There are no differences in occurrence of fusion between genders.[6] The prevalence of fused primary teeth depends on the subjects examined, the criteria of the fused teeth, examination methods with or without radiographs, and the ethnic background. The incidence of this anomaly is approximately 0.1% in permanent dentition and 0.5% in primary dentition.[6] Due to this low prevalence the importance of these anomalies tends to be underestimated.

The exact mechanism of the formation of fused teeth is unknown. However it was hypothesized to be due to a combination of genetic and environmental factors.[6] Shafer and colleagues[6] have stated, ‘It has been thought that some physical force or pressure produces contact of the developing teeth and their subsequent fusion’. Lowell and Solomon believe that fused teeth result from physical action that causes the young tooth germs to come in contact, thus producing a necrosis of the intervening tissues.[6]

These anomalies may also result in orthodontic anomalies, including diastema, disturbances in maxillary and mandibular dental arch lengths and occlusions, and crowding or protrusion as a result of larger tooth crown size.[6]

This anatomic irregularity occurs more often in the deciduous than in the permanent dentition. The prevalence of fusion in the permanent dentition is approximately 0.1% where cases of bilateral fusion are less frequent than unilateral fusion. Only a few cases[6,9] of fusion involving mandibular permanent lateral incisor and canine teeth has been mentioned in the literature. This report documents the case of a young patient with the rare phenomenon of fusion between the permanent mandibular lateral incisor and the canine.

**CASE REPORT**

A 16-year-old male patient was referred to the Department of Orthodontics, Kırıkkale University School of Dentistry, Kırıkkale, Turkey, for the treatment of his teeth.

The patient appeared healthy and of normal physical development for his age. The patient’s medical history was unremarkable. His temporomandibular joints were normal. There was no reported history of orofacial trauma. The patient in this report also did not give a history of its occurrence in any member of his family. His parents had no hereditary peculiarities and his mother did not use any medication and was not exposed to radiation or trauma during pregnancy.

Oral examination revealed he had a moderate level of oral hygiene and mild gingivitis of the gums. No other soft tissue abnormalities were found. Intraoral examination revealed a presence of unusually large teeth in the right lower incisor canine region confirming that it was a case of fusion and not gemination. On the labial and lingual aspect a developmental groove separating the crown of the fused tooth and extending into the ginvial sulcus was seen [Figures 1 and 2]. Percussion showed no sensitivity or pain, and neither did warm or cold testing. The electrical pulp-vitality test showed no stimulated pulp state or necrosis when compared with neighboring teeth. No mobility was
seen in either tooth. All other teeth did not show any developmental abnormalities. Radiographic evaluation of the mandibular right side revealed fused 42 and 43 with a single root and root canal.

Based on both clinical and radiographic findings, the fusion was diagnosed between mandibular right lateral incisor and canine with one root and one pulp canal [Figure 3].

DISCUSSION

Dental anomalies of forms can occur in the deciduous and permanent dentitions. Various terms have been used to describe dental twinning anomalies. “Double teeth”, “double formations”, “joined teeth”, “fused teeth”, “synodontia”, “schizodontia”, “concrecence”, and “dental twinning” are often used to describe fusion or gemination.[11]

In spite of a considerable number of cases reported in the literature, it is difficult to establish a differential diagnosis between fused teeth and bigeminal teeth, particularly when they are associated with supernumerary teeth. To help distinguish between fusion and gemination, it has been suggested that the teeth in the arch be counted with the anomalous crown counted as one. A full complement of teeth indicates gemination, while one tooth less than normal indicates fusion.[12] In cases of gemination there may be a single crown with an appearance of two coronal halves. Fusion appears to have an angled, crooked appearance. Fused teeth can have a double pulp space that may or may not communicate, although a single pulp space is also possible. Gemination typically only has a single large pulp.[9] Proper case history, clinical and radiographic examinations can update the information required for the diagnosis of such abnormalities.

The case presented could be considered as showing typical clinical characteristics of fusion between the right canine and lateral incisor because there were less number of teeth in the lower arch. The clinical and radiographic examination reveals one pulp chamber and single root canal.

The aesthetic restoration of double teeth depends upon the patient’s wish. Unless there are increased risks to periodontal health, caries, or occlusion, treatment is elective for aesthetic reason.[9] Treatment objectives should aim to preserve pulpal vitality, meet esthetic and occlusal requirements, and prevent caries. In the dental literature, various treatment considerations have been recommended to achieve ideal esthetics and occlusion and they usually require a multidisciplinary approach including sectioning and extracting the supernumerary tooth,[13,14] restoring the crown shape,[14] or prosthetic treatment after extraction of the fused tooth.[13,15] Moreover, separation and extraction of the anomalous tooth with orthodontic closing of the space and reshaping of the teeth is also considered. As aesthetics were not impaired in this case, the dental treatment involved only measures intending to prevent plaque build-up in the risk areas along with topical fluoride application and regular follow-up of patient.
INTRODUCTION

Key words: leiomyosarcoma, superficial, trunk, malignant, smooth-muscle tumors.

Superficial leiomyosarcomas are rare malignant smooth-muscle tumors accounting for 4‑6.5% of all soft-tissue sarcomas, less than 6% of cutaneous or dermal tumors and 0.04% of all cancers. They are divided into cutaneous or dermal and subcutaneous tumors. Subcutaneous tumors have been reported to be associated with an increased risk of local recurrences and metastases. They may develop despite wide resection and radiotherapy. Long-term follow-up has shown that the tumor has a high tendency to recur locally and metastasize. Recurrence and treatment. Early complete surgical resection with wide margins of at least 2 cm is the cornerstone of treatment and has been reported to mostly influence the prognosis. However, the tumor has a high tendency to recur locally and metastasize. Recurrence and treatment. Early complete surgical resection with wide margins and adjuvant postoperative radiotherapy. The management of the patient is discussed along with a review of the literature.

RECURRENT SUBCUTANEOUS TRUNK LEIOMYOSARCOMA: A RARE CASE REPORT

Central mobile, painful, tender swelling in the left flank was noted. On examination, a 5 cm × 5 cm × 5 cm tumor mass was palpable in the left flank. The tumor was hard, fixed with underlying muscular wall, and not mobile. The patient was not aware of the clinical presentation. Physicians should be aware of the misleading features of this tumor in order to avoid delay in diagnosis and treatment. Early complete surgical resection with wide margins of at least 2 cm is the cornerstone of treatment and has been reported to mostly influence the prognosis. However, the tumor has a high tendency to recur locally and metastasize. Recurrence and treatment. Early complete surgical resection with wide margins and adjuvant postoperative radiotherapy. The management of the patient is discussed along with a review of the literature.

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