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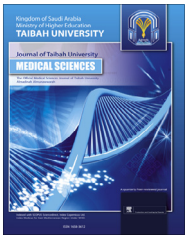

Case Report

Clinical management of a mandibular first molar with supernumerary distal root (radix entomolaris)

Mothanna Alrahabi, PhD

Department of Restorative Dentistry, College of Dentistry, Taibah University, Medina, Kingdom of Saudi Arabia

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الملخص

يعتبر الجذر الرحوي الزائد في الجهة اللسانية القاصية أحد الاختلافات التشريحية في الرحى الأولى بالفك السفلي، ويحتاج هذا الاختلاف التشريحي إلى عناية خاصة وذلك للحفاظ على مستوى نجاح عال لمعالجة أنفاق جذور الأسنان. تصف هذه المقالة الإجراءات العلاجية للرحى الأولى بالفك السفلي بثلاثة جذور (جذر إنسي وجذران قاصيان) وأربعة قنوات (قناتان في الجذر الإنسي وقناة في الجذر اللساني القاصي وقناة في الجذر الشدقي القاصي) يظهر تقرير هذه الحالة أهمية معرفة تشريح القنوات الجذرية وأهمية التصوير الشعاعي قبل معالجة الجذور جراحيا.

الكلمات المفتاح: الجذر الرحوي الزائد; الرحى; الفك السفلي; قناة الجذر; علم التشريح

Abstract

Radix entomolares, a supernumerary root on a mandibular molar, located distolingually, is an anatomical variation of the mandibular first molar. This variation requires special care in order to maintain a high success rate of root canal treatment. This paper describes the procedure for treatment of a mandibular first molar with three roots (one mesial and two distal) and four canals (two mesial and one in each distobuccal and distolingual root). This case report reveals the importance of anatomical knowledge of root canals and preoperative radiographs.

Keywords: Anatomy; Mandibular; Molar; Radix entomolares; Root canal

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Introduction

Thorough knowledge of root canal anatomy, both normal and abnormal, is essential for successful root canal treatment.[1] The mandibular first molar typically has two well-defined roots: a mesial root characterised by a flattened mesiodistal surface and widened buccolingual surface, and a distal root, which is usually straight with a wide oval canal or two round canals.[2] Sometimes, however, the morphology and number of roots of the mandibular first molar vary; the major variant is the presence of supernumerary roots distolingually. This variant, mentioned for the first time by Carabelli,[3] is known as radix entomolaris.[4]

The prevalence of supernumerary roots is less than 3% in African populations, 4.2% in whites, less than 5% in Eurasian and Asian populations and greater than 5% in populations

Corresponding address: Department of Operative Dentistry & Endodontic, College of Dentistry, Taibah University, Medina, Kingdom of Saudi Arabia. Tel.: +966 597674522.
E-mail: mrahabi@taibahu.edu.sa (M. Alrahabi)

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with Mongolian traits.[5] Radix entomolaris was classified by Carlsen and Alexandersen[6] according to the location of its cervical part, resulting in four types. A and B refer to a distally located cervical part of the radix entomolaris with two normal and one normal distal root components, respectively; C refers to a mesially located cervical part, while AC refers to a central location between the distal and mesial root components. This classification allows identification of separate and non-separate radix entomolaris.

This report describes endodontic therapy on a three-rooted mandibular first molar.

Case report

A 22-year-old Syrian male patient presented to the clinic of the dental school at Taibah University with a history of severe pain in the lower-right posterior tooth for a few days. The pain kept him awake at night and was radiating up the side of his face. Clinical examination revealed bad amalgam restoration on tooth no. 30 with recurrent caries on the mesial (Figure 1). The tooth was very sensitive to percussion and was nonresponsive to Endo Ice (Hygienic Corp., Akron, Ohio, USA). The medical history of the patient was non-contributory.

A diagnosis of necrotic pulp with acute apical periodontitis was performed. Emergency treatment involved access cavity preparation, irrigation with NaOCl and placement of a dry cotton pellet for temporization. The patient was then referred to an endodontic specialty clinic. Diagnostic X-rays were taken from various horizontal angles (Figures 2 and 3), which showed an additional distal root. Local anaesthesia was administered, and the tooth was isolated by a rubber dam. Access was prepared with an endo access bur no. E0123 and Endo Z (Dentsply Maillefer, Ballaigues, Switzerland). As the first distal canal was buccal, access was modified to locate the other distal canal, on the lingual side. The root canals were explored with a precurved K-file ISO number 15 (Dentsply Maillefer). The working length was determined electronically with an apex locator (Root ZXII. JMorita, Suita City, Osaka, Japan) and confirmed by periapical radiography (Figure 4).

Figure 2: Diagnostic X-ray.

Figure 3: Diagnostic X-ray with horizontal angulation.

The root canals were shaped with ProTaper rotary instruments (Dentsply Maillefer). During preparation, Glyde (Dentsply Maillefer) was used as the lubricant, and the root

Figure 1: OPG X-ray reveal recurrent caries under amalgam restoration on tooth No.30.

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