

# Endodontic Spotlight

Steven C. Kwan, D.D.S., M.S.D.  
Diplomate of the American Board of Endodontics  
Autumn 2015



## Introduction

In this issue we'll continue our series on classic articles on endodontic anatomy. As we will see from these studies, mandibular molars also frequently have four canals. While not nearly as common as an MB2 in maxillary molars, these studies show why it is critical that you evaluate carefully for a second distal canal as they often are present.

### **Skidmore AE, Bjorndal AM. Root canal morphology of the human mandibular first molar. Oral Surg 1971;32:778-84.**

The purpose of this laboratory study was to evaluate the canal morphology of the mandibular first molar. Plastic casts of the root canal system were made from 45 extracted mandibular first molars and were analyzed. Three canals were the most common configuration occurring 64% of the time, followed by four and two canals at 29% and 7%, respectively. When there were two canals in the mesial root, they had independent foramen 60% of the time and merged in the remaining 40% of the cases. In a distal root with two canals, this pattern was reversed – the canals were independent in 38% of the teeth and merged 62% of the time. *SUMMARY: Two, three, and four roots are found in mandibular first molars 7%, 64%, and 29% of the time, respectively.*

### **Weine FS, Pasiewicz RA, Rice RT. Canal configuration of the mandibular second molar using a clinically oriented in vitro method. J Endod 1988;14:207-13.**

The purpose of this laboratory study was to evaluate the canal morphology of the mandibular second molar. Seventy five extracted teeth were radiograph, accessed, and radiographed with working length files to determine the canal configuration. There was one, two, three, and four canals in the tooth 1%, 4%, 81%, and 11% of the time, respectively. A C-shaped canal configuration was present in 3% of the teeth. In roots where multiple canals were present, it was slightly more common for them to merge then to have separate foramen in the mesial root, and significantly more common in the distal root. *SUMMARY: Mandibular second molars have one, two, three, and four canal 1%, 4, 81%, and 11% of the time, respectively.*

## Topic

<u>Topic</u>	<u>Year; Volume:Page</u>
Anatomy	2015;4:4, 2015;4:4-5. 2015;4:6. 2015;4:6.
Anesthesia	2012;1:2. 2012;1:6. 2012;1:8. 2013;2:2. 2015;4:3
Antibiotic prophylaxis for artificial joints	2015;4:1-2
Antibiotics	2014;3:3-4
Anxiolytics	2014;3:4
Avulsions	2012;1:5
Cold test	2013;2:6
Conflict of interest (bias)	2014;3:6
Cracked teeth	2012;1:3. 2012;1:3
Diabetes	2013;2:1

Diagnostic terminology	2014;3:7-8
Electric pulp test	2013;2:6
Endodontic etiology	2012;1:2
Endodontic instrumentation	2012;1:7. <i>2012;1:7-8</i>
Endodontic microleakage	2014;3:2
Endodontic outcomes	2012;1:4. 2012;1:7
Ferrule	2014;3:1-2
Heart disease	2013;2:1
Hospitalizations	2013;2:7-8
Immature teeth (open apex)	2013;2:3
Lateral canals	2014;3:5
Mineral trioxide aggregate (MTA)	2013;2:3. 2013;2:3. 2013;2:4
Pain management	2012;1:4. 2013;2:7. 2014;3:3
Perforations	2013;2:4
Pulp testing	2013;2:5. 2013;2:5
Restorative considerations (importance of crowns)	2012;1:4. 2014;3:1. 2014;3:1
Revascularization	2012;1:1. <i>2012;1:1</i>
Smoking	2013;2:2
Splinting	2012;1:6
Systemic inflammation	2014;3:5
Trauma overview	2012;1:5
Vertical root fracture	2012;1:3

*Spotlight topics in italics*

---

Endodontic Spotlight is published quarterly by Steven C. Kwan, D.D.S., M.S.D.  
 Dr. Kwan practices at 6715 Fort Dent Way, Tukwila WA 98188  
 206-248-3330; 206-431-1158 (fax); [www.seattle-endodontics.com](http://www.seattle-endodontics.com)  
 To subscribe or unsubscribe from this publication, email [endodonticspotlight@gmail.com](mailto:endodonticspotlight@gmail.com).  
 This publication may not be reproduced without written permission.

---