

## PREVALENCE OF MAXILLARY SECOND PREMOLAR TEETH WITH 2 CANALS IN SAUDI POPULATION OF EASTERN AND SOUTHERN REGIONS

**Dr. Mohammed Thamer Alqahtani, Dr. Saad Ali Sabrah, Dr. Mohammed Aied Aljafel**

1. *Armed Forces Hospital South Region, Senior House Officer, Department of Dentistry*  
2. *Ministry of health Eastern Region, Saudi Board Restorative Resident, Department of dentistry, Saudi Arabia*

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For Correspondence  
Email ID:  
[dr.mohd\\_thamer@hotmail.com](mailto:dr.mohd_thamer@hotmail.com)

### Abstract

**Aim:** The aim of this study is to increase the practitioner's awareness of the possibility of 2 canals of upper second premolar teeth during endodontic treatment that helps to avoid failure of RCT caused by missing one of the main canals.

**Methodology:** It is a cross-sectional study was conducted in 2 different regions east and south regions of Saudi Arabia. Data collected from randomized patients sample of armed forces hospital southern region and from Dammam medical complex- dental department (ministry of health) in eastern region including male and female with age between 15-45 y/o, by using Chi-square test. 140 patients were selected for the study (95 patients in the southern region and 45 patients in eastern region). They were examined clinically and radiographically.

**Results:** Out of 140 patients, 79 patients (56%) have 2 canals in the upper second premolars and 61 patients (44%) have 1 canal in the upper second premolars In eastern region, out of 45 patients, 26 patients (57.77%) have 2 canals in the upper second premolars and 19 patients (42.33%) have 1 canal in the upper second premolars. In the southern region, out of 95 patients, 53 patients (55.78%) have 2 canals in the upper second premolars and 40 patients (44.22%) have 1 canal in the upper second premolars.

**Conclusion:** This study showed close proportions in the probability of two canals of upper second premolar teeth in both eastern and southern regions of Saudi Arabia. So, the dentists should be aware that the percentage of two canals in upper second premolar teeth almost reaches more than 50% while doing root canal treatment.

**Keywords:** Maxillary premolar teeth, Root canal morphology, Root canal therapy

### Introduction:

One of the success factors of endodontic treatment is enough knowledge of tooth anatomy and its roots morphology (1). Because of inadequate knowledge will lead to inadequate cleaning and shaping of

canals which cause failure of root canal treatment (2).

The main cause of RCT failure is the inability to detect and treat all canals by missing one of the root canal (3-4).

The risk of missing anatomy is enhanced due to the intricacy of the root canal system. All the teeth may be found with extra roots/or canals, but the incidence of this observation is maximum in premolars and molars (5).

There are high and wide variations in root morphology of maxillary second premolar teeth (6-9). The aim of this study is to increase the practitioner's awareness of the possibility of 2 canals of upper second premolar teeth during endodontic treatment that helps to avoid failure of RCT caused by missing of one of the main canals.

#### **Methodology:**

It is a cross-sectional study was conducted in 2 different regions east and south of Saudi Arabia. Data collected from randomized patients sample of Armed Forces Hospital Southern Region and from Dammam medical complex- dental department (ministry of health) in Eastern Region including male and female with age between 15-45 y/o, by using Chi-square test. 140 patients were selected for the study (95 patients in the southern region and 45 patients in eastern region). They were examined clinically and radiographically.

#### **Results:**

Out of 140 patients, 79 patients (56%) have 2 canals in the upper second premolars and 61 patients (44%) have 1 canal in the upper second premolars.

In Eastern Region, out of 45 patients, 26 patients (57.77%) have 2 canals in the upper second premolars and 19 patients (42.33%) have 1 canal in the upper second premolars.

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#### **Conclusion:**

This study showed close proportions in the probability of two canals of upper second premolar teeth in

both Eastern and Southern regions of Saudi Arabia. So, the dentists should be aware that the percentage of two canals in upper second premolars teeth almost reaches more than 50% while doing root canal treatment to avoid missing of the main canal which causes failure of RCT and leads to retreatment.

#### **References:**

- 1- F. J. Vertucci, J. E. Haddix, and L. R. Britto, “Tooth morphology and access cavity preparation,” in Pathways of the Pulp, S. Cohen and K. Keiser, Eds., Mosby, St. Louis, Mo, USA, 9th edition, 2006.
- 2- G. Cantatore, E. Berutti, and A. Castellucci, “Missed anatomy: frequency and clinical impact,” Endodontic Topics, vol. 15, no. 1, pp. 3–31, 2006.
- 3- Shravani S. G., Karunakar P., and Malleshwar S.. 2015. Extraneous canals in endodontics: a series of case reports. Adv. Dent. Oral. Health 1:555553.
- 4- Tomar D., Dhingra A., Tomer A., Sharma S., Sharma V., Miglani A.. 2013. Endodontic management of mandibular third molar with three mesial roots using spiral computed tomography scan as a diagnostic aid: a case report. Oral. Surg. Oral. Med. Oral. Pathol. Oral. Radiol. 115:e6–e10.
- 5- Giuseppe C, Elio B, Arnaldo C. Missed anatomy: frequency and clinical impact. Endodontic Topics. 2009; 15: 3–31.
- 6- F. Vertucci, A. Seelig, and R. Gillis, “Root canal morphology of the human maxillary second premolar,” Oral Surgery Oral Medicine and Oral Pathology, vol. 38, no. 3, pp. 456–464, 1974.
- 7- F. J. Vertucci, “Root canal anatomy of the human permanent teeth,” Oral Surgery Oral Medicine and Oral Pathology, vol. 58, no. 5, pp. 589–599, 1984.

“Prevalence of maxillary second premolar teeth with 2 canals in Saudi population of Eastern and Southern regions”

8- S. Sert and G. S. Bayirli, “Evaluation of the root canal configurations of the mandibular and maxillary permanent teeth by gender in the Turkish population,” *Journal of Endodontics*, vol. 30, no. 6, pp. 391–398, 2004.

9- K. P. Sardar, N. H. Khokhar, and I. Siddiqui, “Frequency of two canals in maxillary second premolar tooth,” *Journal of the College of Physicians and Surgeons Pakistan*, vol. 17, no. 1, pp. 12–14, 2007.

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