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A survey of root canal treatment of molar teeth by general dental practitioners in private practice in Saudi Arabia

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Abstract The purpose of this study was to evaluate the practice and depth of knowledge of root canal treatment by general dental practitioners working in private dental centers in different cities within the Kingdom of Saudi Arabia. A questionnaire was distributed to 400 general dental practitioners. Completed questionnaires were analyzed in term of simple summary statistics. A total of 252 (63%) practitioners responded. The majority of the respondents were Syrians (59%) and Egyptians (32%). Ninety-one per cent of the respondents indicated that they performed root canal treatment. Amongst those who carried out root canal treatment, only seven practitioners (3%) used rubber dam for isolation. More than half of the respondents (55%) used saline to irrigate canals during treatment. Forty-six per cent of practitioners used formocresol as an inter appointment medicament. The standardized and step-back preparation techniques were the method of choice for the majority of the respondents (91%). Ninety-seven per cent of the practitioners used stainless steel hand instruments to prepare root canals and the majority (92%) used gutta-percha for obturation. Seventy-four per cent of the respondent used cold lateral condensation. The average number of radiographs routinely taken for root canal treatment was four. Ninety-three per cent indicated that they usually completed a root canal treatment of molar teeth in three or more visits. Eighty-eight per cent of the practitioners preferred waiting for 1 or 2 weeks to restore the teeth

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permanently. Results of this study confirm that many general dental practitioners are not following quality guidelines for endodontic treatment.

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1. Introduction

Endodontic treatment is an essential part of comprehensive quality dental care. Controlled studies have shown that root canal treatment brings high success rates of more than 90% (Sjogren et al., 1990; Eriksen, 1991). However, most of these studies reported data from endodontic specialists and university clinics. These data may mislead in estimating the success rate of endodontic treatment in general practice that approximates to 65–75% (Eriksen, 1991). This discrepancy in success rate may reflect a difference in the technical quality of the endodontic treatment performed. However, very few data are available about the general dental practitioners approach to endodontic therapy (Gatewood et al., 1990; Jenkins et al., 2001). These studies mention that a majority of general dental practitioners do not confirm to academic standards of treatment and established quality guidelines set by the American Association of Endodontics or the European Society of Endodontology (American Association of Endodontics, 1994; European Society of Endodontology, 1994).

Although, modern dentistry was first introduced into the country of Saudi Arabia almost 50 years ago, it did not develop substantially until 1975, where the founding of the dental school in Riyadh, the capital city, took place (KSU Press, 1977). Highly specialized endodontic practices usually take place at the government health institutes and their affiliated dental schools. Such government institutes, usually adopt and governs well established endodontic training programs under the supervision of well trained endodontists. Due to lack number of endodontist, most of the endodontic therapy in the Kingdom is done in private dental practices by general dental practitioners.

The rationale of this study was to evaluate the practice and depth of knowledge of root canal treatment of molar teeth by general dental practitioners in different cities of the Kingdom of Saudi Arabia working in private dental centers.

2. Materials and methods

A questionnaire was developed and were distributed between May 12 and June 10, 2008 to 400 general dental practitioners working in private dental centers selected at random in five different major cities; in different provinces of the Kingdom of Saudi Arabia namely Riyadh, Jeddah, Mecca, Tabouk and Dammam regarding the provision of endodontic treatment in their practices. The questionnaire was made up of 21 questions with multiple-choice answers with an explanatory covering letter. The questionnaire was fully piloted and refined for clarity and scope before being distributed.

Completed questionnaires were collected and analyzed in terms of simple summary statistics. Blank or multiple answers were all treated as missing values, only single unequivocal replies were included in calculating frequencies and percentages.

3. Results

Completed questionnaires were obtained from two hundred fifty-two (252) general dental practitioners (63%). The majority of the respondents were Syrian (59%), the remaining were Egyptians (32%), Saudis (3%), Sudanese (2%), Filipinos (2%) and other countries (2%) of whom 229 (91%) performed root canal treatment.

3.1. Molar endodontics

Eighty-nine per cent of practitioners who performed root canal treatment included permanent molar teeth, whilst 6% referred patients. The reason was due to lack of enough skill, facilities and materials to perform such treatment. The remaining 5% preferred extraction.

3.2. Number of visits to complete root canal treatment of molar teeth

Sixty per cent indicated that they usually completed root canal treatment of molar teeth in more than three visits. One-third of the respondents (33%) indicated that they used three visits only. A minority of practitioners completed root canal treatment in one visit (2%).

Isolation methods. Ninety-seven per cent indicated that they isolated teeth with cotton wool rolls, only seven practitioners used rubber dam (3%).

3.3. Technique for root canal preparation

Almost half (49%) of the practitioners prepared the canal with standardized technique. However, 42% used the step back technique, and the remaining 9% used crown-down technique.

3.4. Types of instruments used for root canal preparation

A majority (97%) of practitioners prepared canals using stainless steel hand instruments. Only 3% used nickel titanium rotary instruments.

3.5. Canal irrigation solutions

Over 55% of respondents irrigated root canals with normal saline, the remainder used sodium hypochlorite (26%) or hydrogen peroxide (19%).

3.6. Methods of working length determination

The majority of the respondents (93%) used radiographs and tactile sensation with some kind of instrument in situ to determine working length. Only 7% used electronic apex locator in their practice, though this was sometimes used in conjunction with a radiograph.

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