https://journal.utripoli.edu.ly/index.php/Alqalam/index eISSN 2707-7179

Original article

Knowledge, Attitudes, and Practices of the Tug-Back Technique: A Cross-Sectional Survey in Endodontics

Mohamed Ben Hakoma[1]*, Mohamed Jedeh[2], Khaled Elhenshiri[1]

[1]*Department of Endodontic and Conservative Dentistry, Faculty of Dentistry, University of Tripoli, Tripoli, Libya*
[2]*Department of Endodontic and Conservative Dentistry, Faculty of Dentistry, University of Zintan, Zintan, Libya*

ARTICLE INFO

Corresponding Email. *m.hakoma@uot.edu.ly*

Received*: 15-09-2024*
Accepted*: 24-11-2024*
Published*: 02-12-2024*

Keywords*. Tug-Back Technique, Endodontics, Root Canal Therapy, Apical Seal, Dental Practitioners.*

ABSTRACT

This study aimed to assess the knowledge, attitudes, practices, and challenges faced by dental practitioners regarding the tug-back technique in endodontics, a method used to ensure an effective apical seal during root canal therapy. A structured cross-sectional survey was conducted among 154 dental practitioners, including general dentists and endodontic specialists. The questionnaire comprised sections on demographic information, knowledge and attitudes toward the tug-back technique, and current practices and challenges. Data were analyzed using descriptive statistics and Fisher's Exact Test to evaluate associations between practitioner demographics and aspects of the tug-back technique. The survey achieved a response rate of 60%, with the majority of respondents being female (77.3%) and early-career practitioners (66.9% had less than five years of experience). Most participants were familiar with the tug-back technique (57.1% reported being very familiar) and considered it essential for achieving a hermetic apical seal. Commonly used methods for confirming tug-back included tactile feedback (68.8%) and radiographic verification (63.6%). Key challenges included difficulty distinguishing between true and false tug-back and inadequate canal shaping. Fisher's Exact Test revealed a significant association between practice type and confidence in distinguishing true versus false tug-back ($p = 0.0108$), suggesting higher confidence levels among specialists and academic practitioners. However, no significant association was found between years of experience and the choice of method or tool used to confirm tug-back ($p = 0.9019$). The findings highlight a need for targeted training in distinguishing true versus false tug-back, particularly for practitioners in general practice settings. Enhanced access to advanced diagnostic tools and hands-on workshops could help bridge knowledge gaps and improve clinical outcomes. Future research should explore the impact of training interventions on practitioners' proficiency in using the tug-back technique and achieving effective apical seals.

Cite this article. *Ben Hakoma M, Jedeh M. Knowledge, Elhenshiri A Khaled Attitudes, and Practices of the Tug-Back Technique: A Cross-Sectional Survey in Endodontics. Alq J Med App Sci. 2024;7(4):1413-1421. https://doi.org/10.54361/ajmas.247471*

INTRODUCTION

In endodontics, achieving a hermetic seal within the root canal system is essential for the long-term success of root canal therapy, as this seal prevents periapical contamination and blocks pathways for bacteria and their byproducts, reducing the risk of reinfection and post-treatment complications [1,2]. Central to creating this apical seal is the snug fitting of the obturating material, which provides a physical barrier that minimizes microleakage and supports the healing of

periapical tissues [3]. A widely adopted technique to achieve this fit is known as “tug-back,” tactile feedback indicating slight resistance or friction as the master cone fits tightly within the apical third of the root canal [4]. This sensation suggests that the gutta-percha point is optimally positioned, enhancing the reliability of the apical seal and contributing to the procedure's overall success [5]. The tug-back technique is more than a tactile cue; it is a crucial indicator of a well-fitting cone that helps ensure an effective seal in the apical region of the canal. Clinicians rely on this resistance to gauge whether the master cone has reached the correct working length and is snugly placed against the canal walls [6]. An effective tug-back can prevent dislodgement or movement of the gutta-percha cone during condensation, which could otherwise lead to voids or gaps, compromising the outcome of the root canal treatment. Moreover, studies have shown that a tight apical fit reduces the likelihood of coronal microleakage over time, thus playing a significant role in the success rate of root canal treatments [7].

Obtaining the optimal tug-back sensation requires both precision in canal preparation and selection of an appropriate master cone. A practitioner achieves this by carefully shaping the apical region with a slight taper, allowing the gutta-percha point to reach a snug fit at the working length without over-compression [8]. For example, clinicians often rely on matched-taper cones or slightly oversized cones to engage the canal walls effectively, producing a reliable tug-back sensation. A recent study highlighted that improper preparation of oval-shaped canals may hinder achieving tug-back, emphasizing the importance of tailoring techniques to root canal anatomy [9]. Advanced techniques, such as the use of cone-beam computed tomography (CBCT) or electronic apex locators, can aid in verifying the position and fit of the cone, providing a visual or electronic confirmation that complements the tactile feedback [10]. CBCT has particularly been noted for its ability to provide three-dimensional visualization of canal anatomy, which is invaluable in managing complex canal morphologies [11]. A distinction exists between true and false tug-back, and recognizing this difference is important for ensuring a proper fit. True tug-back occurs when the master cone achieves resistance in the apical third, indicating an effective seal. In contrast, false tug-back may be due to irregularities or debris in the canal, creating the illusion of a snug fit [12] (Figure 1).

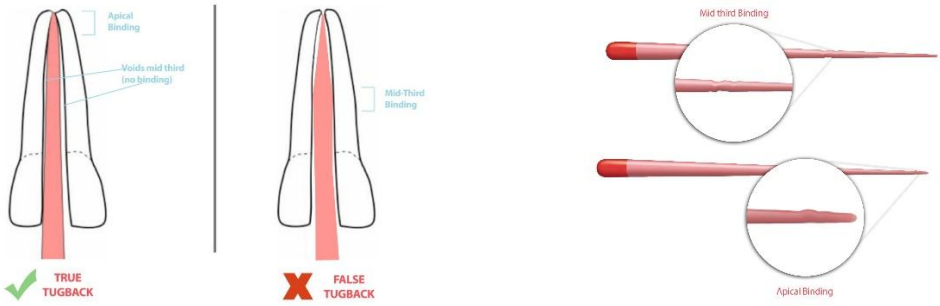

Figure 1. Illustrate the concept of tug-back (a) compare true and false tug-back (b) shows two types of binding when inserting gutta-percha cones where mid third binding occur in false tug-back

False tug-back can mislead clinicians into believing the obturation is complete, potentially resulting in compromised treatment outcomes [13]. Therefore, practitioners must confirm that any tug-back sensation originates from proper canal shaping rather than factors that could interfere with the seal, such as residual pulp tissue or improper taper [14]. The taper of endodontic files used in shaping the root canal can significantly influence the ease with which tug-back is achieved. Traditional hand files, which typically have a fixed taper, provide more predictable tug-back compared to rotary instruments that vary in taper along the length of the file [15]. When using rotary instruments, clinicians must ensure that the file size and taper are appropriately matched to the canal anatomy to create an apical configuration that allows for a consistent tug-back. Innovations in instrument design, such as variable-taper files, allow for more tailored preparation but require the clinician to be skilled in achieving an ideal shape for the tug-back sensation [16]. Additionally, bioceramic materials are increasingly being explored for their potential to enhance the sealing ability of obturation materials, thereby improving outcomes in challenging cases [17].

Technological advancements are influencing the ways practitioners perceive and apply the tug-back technique. Electronic apex locators, for example, enable clinicians to precisely measure canal length, potentially reducing reliance on tactile feedback alone. Similarly, CBCT provides a three-dimensional view of the canal system, helping practitioners identify the optimal point for achieving tug-back and reducing the need for adjustments in obturation. However, tactile feedback remains a fundamental skill, especially in settings without access to advanced imaging, underscoring the

importance of the tug-back technique across diverse practice environments [18]. Given these considerations, this cross-sectional survey aims to assess the knowledge, attitudes, and practices of dental professionals regarding the tug-back technique. Specifically, it seeks to evaluate how practitioners interpret the importance of tug-back in ensuring an effective apical seal, the challenges they encounter in achieving adequate tug-back, and any variations in technique or perception based on experience or access to technology. By examining current clinical practices surrounding tug-back, this study aims to contribute to a more standardized approach in endodontics, ultimately clarifying the role of tug-back in optimizing root canal outcomes and guiding future research on obturation techniques.

METHODS

Questionnaire Description

A structured questionnaire was designed to assess knowledge, attitudes, practices, and challenges related to the tug-back technique in endodontics. The questionnaire consisted of three main sections: the first section includes demographic information such as gender, education level, years of experience, and type of practice (e.g., general practice, specialty practice, academic/teaching institution). The second section aimed to gauge familiarity with the tug-back technique, perceived importance of achieving tug-back for ensuring an effective apical seal, confidence in distinguishing true versus false tug-back, and belief in the impact of file taper on achieving tug-back. Participants were also asked about methods or tools they use to confirm an accurate tug-back sensation, with options including tactile feedback, radiographic verification, electronic apex locator, and cone-beam computed tomography (CBCT). The last section includes questions focused on the frequency of applying the tug-back technique in practice, specific challenges faced (e.g., difficulty distinguishing true vs. false tug-back, inadequate canal shaping, limited tactile feedback), and additional training or resources that might improve their understanding and application of the tug-back technique (e.g., workshops, educational materials, access to equipment).

The questionnaire was reviewed by experts in endodontics to ensure clarity and relevance of the questions. A pilot test with a small group of participants was conducted to refine the questionnaire further, ensuring face and content validity.

Consent form

Informed consent was obtained from all participants before they began the survey. The consent form, provided at the start of the questionnaire, outlined the purpose of the study, the voluntary nature of participation, and the assurance of anonymity and confidentiality. Participants were informed that they could withdraw at any time without any repercussions. By proceeding with the survey, participants indicated their agreement to participate in the study under these terms.

Sampling and data collection

The study employed a cross-sectional survey design. Participants were recruited from a sample of dental practitioners, including general dentists and endodontic specialists. Eligibility criteria included practitioners actively involved in endodontic procedures. To reach a diverse sample, invitations to participate were distributed through professional dental associations, clinics, and academic institutions.

The questionnaire was distributed electronically, using an online survey platform to facilitate ease of access and encourage participation. Respondents were informed about the purpose of the study, and participation was voluntary and anonymous. Data collection occurred over a specified period, from October 15 to November 15, to ensure sufficient response rates and representation across various practice settings and experience levels. A total of 154 responses were received and analyzed for the study.

Statistical analysis

Data were analyzed using R software. Descriptive statistics, including frequencies and percentages, were used to summarize demographic information, knowledge, attitudes, and practices related to the tug-back technique. To investigate associations between specific variables, Fisher's Exact Test was employed due to the categorical nature of the data and the presence of small expected frequencies in contingency tables. For all analyses, a p-value of <0.05 was considered statistically significant. Results were interpreted to understand the influence of practitioner demographics, experience, and practice type on knowledge and practices surrounding the tug-back technique.

RESULTS

Participant demographics

A total of 154 participants completed the survey. The majority were female (77.3%), with 22.1% identifying as male and 0.6% preferring not to disclose their gender. Most respondents held a bachelor's degree in dentistry (83.1%), followed by diploma or advanced program graduates (9.7%), master's degree holders (6.5%), and one participant with a doctoral degree (0.6%). In terms of experience, 66.9% of participants had less than five years of experience, 18.2% had between 5 and 10 years, 14.3% had between 11 and 20 years, and 0.6% had over 20 years. Regarding practice type, the majority were in general practice (85.7%), while 6.5% specialized in endodontics, 4.5% worked in other types of practice, and 3.2% were in academic or teaching institutions (Table 1).

Table 1. The information of the dental practitioners (DPs) participated in the study.

Category	Subcategory	Count	percentage %
Gender Distribution	Male	34	22.1%
	Female	119	77.3%
	Prefer not to say	1	0.6%
Education Level	Bachelor's degree Bachelor's degree	128	83.1%
	Master's degree	10	6.5%
	Doctorate/PhD	1	0.6%
	Others (diploma, advanced programs)	15	9.7%
Years of Experience	Less than 5 years	103	66.9%
	5-10 years	28	18. 2%
	11-20 years	22	14.3%
	More than 20 years	1	0.6%
Practice Type	Endodontic specialty practice	10	6.5%
	General practice	132	85.7%
	Academic/teaching institution	5	3.2%
	Other	7	4.5%

Knowledge and Attitudes Toward the Tug-Back Technique

In terms of familiarity with the tug-back technique, 57.1% of participants reported being very familiar, 35.7% somewhat familiar, and 7.1% not familiar. The majority of respondents (78.6%) considered achieving tug-back, as "very important" for ensuring an effective apical seal in root canal therapy, with 18.8% rating it as "somewhat important" and 2.6% as "unsure." Regarding confidence in distinguishing between true and false tug-back, 51.3% were "somewhat confident," 22.7% were "very confident," 15.6% were "not confident," and 10.4% were "unsure."(Table 2).

Table 2. Libyan dental practitioners' attitude towards tug-back

Category	Subcategory	Count	Percentage%
Familiarity with Tug-Back Technique	Very familiar	88	57.1%
	Somewhat familiar	55	35.7%
	Not familiar	11	7.1%
Importance of Tug-Back for Apical Seal	Very important	121	78.6%
	Somewhat important	29	18.8%
	Unsure	4	2.6%
Confidence in Distinguishing True vs. False Tug-Back	Very confident	35	22.7%
	Somewhat confident	79	51.3%
	Unsure	16	10.4%
	Not confident	24	15.6%

Practices and Tools for Achieving Tug-Back

Participants reported various methods to confirm accurate tug-back sensation. Tactile feedback alone was the most common approach (68.8%), followed by radiographic verification (63.6%), use of an electronic apex locator (55.2%), and cone-beam computed tomography (CBCT) (5.2%). When asked about the impact of file taper on achieving true tug-back, 64.9% believed that file taper affects tug-back, 21.4% were unsure, and 13.6% did not believe it had an impact. (Table 3).

Table 3. Responses to what tools dental practitioners use to achieve tug-back

Category	Subcategory	Count	Percentage%
Tools/Methods	Tactile feedback only	106	68.8%
	Electronic apex locator only	85	55.2%
	Cone-beam computed tomography (CBCT)	8	5.2%
	Radiographic verification	98	63.6%
the impact of file taper on achieving true tug-back	Yes	100	64.9%
	No	21	13.6%
	Unsure	33	21.4%

Frequency of Applying the Tug-Back Technique and Associated Challenges

The tug-back technique was frequently applied, with 45.5% of respondents using it "always" and 35.1% "frequently." Some participants (14.3%) applied it "sometimes," while smaller proportions used it "rarely" (3.9%) or "never" (1.3%). Common challenges included difficulty distinguishing between true and false tug-back (46.8%), inadequate canal shaping (39.0%), limited tactile feedback (33.8%), and lack of appropriate equipment (24.0%) (Table 4).

Table 4. Responses to frequency and associated challenges

Category	Subcategory	Count	Percentage %
Frequency of applying Tug-back technique	Always	70	45.5%
	Frequently	54	35.1%
	Sometimes	22	14.3%
	Rarely	6	3.9%
	never	2	1.3%
Challenges faced in achieving Tug-Back	Difficulty distinguishing true vs. false tug-back	72	46.8%
	Inadequate canal shaping	60	39.0%
	Lack of appropriate equipment (e.g., apex locator, CBCT}	37	24.0%
	Limited tactile feedback	52	33.8%
	Other	16	10.4%

Additional training and resource needs

When asked about further training, most participants expressed interest in hands-on workshops (66.9%) and advanced endodontic courses (61.7%). Access to educational materials (45.5%) and better equipment (43.5%) were also cited as helpful resources (Figure 2).

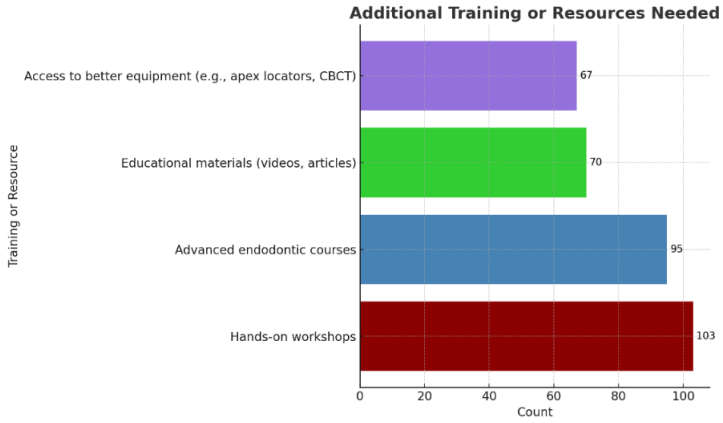

Figure 2. Libyan dental practitioners' responses to what training program they needed the most

Associations Between Years of Experience, Type of Practice, and Tug-Back Technique

Two key associations were analyzed in this study. First, a Fisher's Exact Test was conducted to assess the association between years of experience and the method or tool used to confirm tug-back sensation. The result indicated no statistically significant association ($p = 0.9019$), suggesting that the choice of method or tool for confirming tug-back was not significantly influenced by practitioners' years of experience. In contrast, a significant association was found between type of practice and confidence in distinguishing true versus false tug-back ($p = 0.0108$). This result suggests that practitioners' confidence in distinguishing between true and false tug-back varied significantly across different practice settings. This finding highlights the potential influence of practice environment on practitioners' confidence in clinical decision-making related to tug-back techniques (Figure 3).

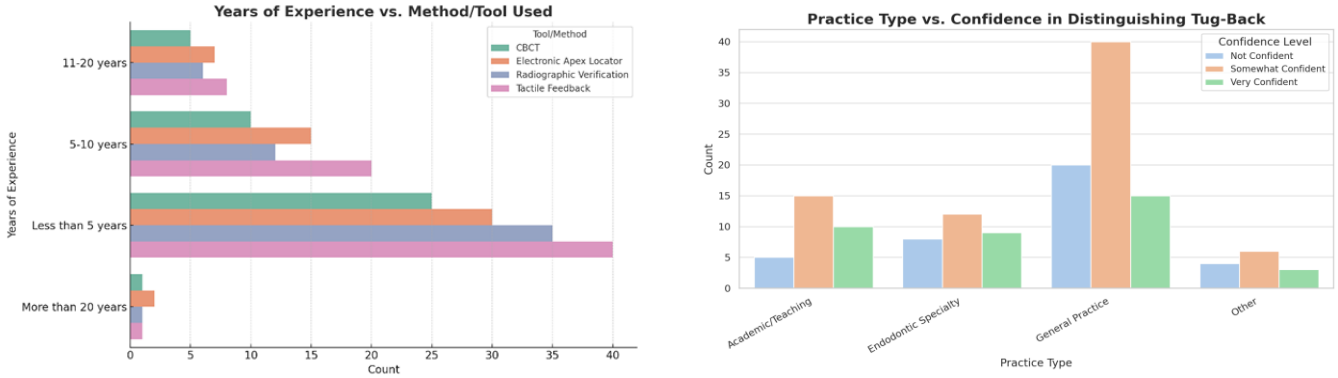

Figure 3. (A) association between years of experience and method/tool used, (B) association between practice type and confidence

DISCUSSION

This study provides insight into the knowledge, attitudes, practices, and challenges dental practitioners face concerning the tug-back technique in endodontics. The findings reveal a range of familiarity and confidence levels related to the technique, influenced by factors such as practice type and experience.

The majority of participants demonstrated familiarity with the tug-back technique, viewing it as essential for achieving a hermetic apical seal, which is crucial in preventing periapical contamination. This aligns with established literature emphasizing the role of a well-fitted obturation material in minimizing microleakage and supporting periapical tissue healing [19,20]. However, familiarity varied across participants, indicating potential gaps in knowledge and training related to this technique, particularly in recognizing true versus false tug-back. True tug-back, defined by resistance from the gutta-percha point in the apical third of the canal, is often more challenging to achieve without adequate canal shaping and tactile feedback [21,22]. This suggests a need for targeted education that reinforces these concepts, particularly for newer practitioners who may benefit from structured, hands-on training.

A significant association was identified between practice type and confidence in distinguishing between true and false

tug-back (p = 0.0108). Practitioners in specialty and academic settings reported higher confidence in identifying true versus false tug-back, which could reflect differences in access to specialized training and resources. Specialists and academics may benefit from exposure to advanced techniques such as cone-beam computed tomography (CBCT) and apex locators, aiding in more precise confirmation of tug-back [23,24]. The importance of a precise apical seal has been highlighted in a study on the "awareness and perception of sealer puff among Libyan dental practitioners, which underlines how proper techniques can minimize overextension and improve clinical outcomes [25]. This underscores the importance of accessibility to advanced diagnostic tools and comprehensive training in enhancing practitioners' confidence and accuracy in achieving effective apical seals.

The study highlights common challenges in achieving accurate tug-back, including difficulty distinguishing between true and false tug-back, inadequate canal shaping, and limited tactile feedback. Similar challenges have been reported in prior studies, where improper canal preparation or insufficient tactile training can lead to microleakage and compromised treatment outcomes [26]. The identified need for additional training resources, such as workshops and advanced courses, points to the importance of ongoing education for both general practitioners and specialists. Training that emphasizes tactile feedback techniques, as well as the judicious use of radiographic and electronic verification, could improve outcomes and consistency in practice [27]

Interestingly, there was no significant association between years of experience and the method or tool used to confirm tug-back (p = 0.9019). This suggests that practitioners across different experience levels rely on similar techniques, such as tactile feedback and radiographic verification. This finding aligns with previous literature, indicating that although newer technologies like CBCT and apex locators are available, traditional methods remain the mainstay for many practitioners [28, 29]. The consistency in methods across experience levels might reflect established practice patterns within endodontics, underscoring the importance of foundational techniques that can be universally applied across varying practice settings.

The findings from this study have practical implications for dental education and clinical practice. Educational programs could address the identified gaps by offering hands-on training workshops that focus on tactile sensation and true versus false tug-back differentiation. Additionally, enhancing access to advanced imaging and diagnostic tools in general practice settings could improve accuracy and confidence among practitioners [30]. Future research should consider exploring the effectiveness of various training methods on tug-back technique outcomes and investigate if integrating advanced diagnostic technologies more broadly within general practice settings affects tug-back reliability and apical seal effectiveness. Moreover, understanding how knowledge retention and skill application vary among practitioners with diverse educational backgrounds and access to technology could help inform standardized endodontic education curricula.

This study has certain limitations. The cross-sectional design limits the ability to assess changes in knowledge and practices over time. The reliance on self-reported data introduces potential for response bias, as participants may overstate their knowledge or familiarity with the tug-back technique [31]. Additionally, the convenience sample, though diverse, may not fully represent the broader population of dental practitioners, particularly those with limited access to specialty training resources or advanced diagnostic tools.

CONCLUSION

This study underscores the need for targeted education and resource accessibility to strengthen the application of the tug-back technique among dental practitioners. By addressing these gaps in knowledge, confidence, and access to resources, the field can move toward more standardized and effective endodontic practices, ultimately enhancing patient outcomes.

Conflict of interest. Nil

REFERENCES

1. Ng YL, Mann V, Rahbaran S, Lewsey J, Gulabivala K. Outcome of primary root canal treatment: Systematic review of the literature—Part 1. International Endodontic Journal. 2008;41(1):6–31.
2. Ricucci D, Siqueira JF Jr. Apical limit of root canal instrumentation and obturation, part 2: A histological study. International Endodontic Journal. 2011;45(4):374–383.
3. Schilder H. Filling root canals in three dimensions. Dental Clinics of North America. 1974;18(2):269–296.
4. Ingle JI, Bakland LK. Endodontics. 5th ed. Hamilton, Ontario: BC Decker Inc.; 2002.
5. Peters OA, Peters CI, Basrani B. Cleaning and shaping of the root canal system. In: Ingle JI, Bakland LK, Baumgartner JC, editors. Ingle's Endodontics. Hamilton, Ontario: BC Decker Inc.; 2001. pp. 256–375.

6. Khayat A, Lee SJ, Torabinejad M. Human saliva penetration of coronally unsealed obturated root canals. Journal of Endodontics. 1993;19(9):458–461.
7. Ng YL, Mann V, Gulabivala K. A prospective study of the factors affecting outcomes of non-surgical root canal treatment. International Endodontic Journal. 2007;40(8):588–606.
8. Peters OA. Current challenges and concepts in the preparation of root canal systems: A review. Journal of Endodontics. 2004;30(8):559–567.
9. Ricucci D, Siqueira JF Jr. Anatomic and histologic features of apical periodontitis. In: Siqueira JF Jr, editor. Treatment of Endodontic Infections. London: Quintessence Publishing Co; 2011. pp. 21–42.
10. De Moor RJG, Hommez GMG, De Boever JG, Delme KIM, Martens LC. Accuracy of four electronic apex locators: An in vitro evaluation. Endodontics & Dental Traumatology. 2010;16(6):239–244.
11. Peters OA. Three-dimensional endodontic imaging using cone beam computed tomography. In: Hargreaves KM, Goodis HE, Seltzer S, editors. Seltzer and Bender's Dental Pulp. 2nd ed. Chicago: Quintessence Publishing; 2012. pp. 247–269.
12. Wu MK, Wesselink PR, Boersma J. A 1-year follow-up study on leakage of single-cone fillings. International Endodontic Journal. 2002;35(9):792–798.
13. Chong BS, Pitt Ford TR, Watson TF. Essential Endodontology: Prevention and Treatment of Apical Periodontitis. 2nd ed. Oxford: Blackwell Munksgaard; 2005.
14. Al-Fouzan KS. Radiographic quality of root fillings performed by undergraduate students at King Saud University, Saudi Arabia. Saudi Dental Journal. 2010;22(1):43–48.
15. Garcia LF, Martins JN, da Silva EJ, Marques MS. Influence of clinical experience on the radiographic quality of root fillings performed by dental undergraduates. European Journal of Dental Education. 2005;9(1):66–70.
16. Peters OA. Shaping the root canal with rotary instruments: Basic concepts and case selection. In: Cohen S, Hargreaves KM, editors. Pathways of the Pulp. St. Louis: Mosby; 2006;321–337.
17. Parirokh M, Torabinejad M. Mineral trioxide aggregate: A comprehensive literature review—Part I: Chemical, physical, and antibacterial properties. Journal of Endodontics. 2010;36(1):16–27.
18. Ng YL, Spratt D, Sriskantharajah S, Gulabivala K. Evaluation of protocols for field decontamination before bacterial sampling of root canals for contemporary microbiology techniques. Journal of Endodontics. 2003;29(5):317–320
19. Gutmann JL, Lovdahl PE. Problem Solving in Endodontics. 5th ed. Elsevier; 2010.
20. Trowbridge HO, Emling RC. Inflammation: A Review of the Process. 5th ed. Quintessence; 2002.
21. Ruddle CJ, Machtou P, West JD. The shaping movement 5th generation technology. Dent Today. 2013 Apr;32(4):94.
22. Torabinejad M, Goodacre CJ. Endodontic or dental implant therapy: the factors affecting treatment planning. The journal of the american dental association. 2006 Jul 1;137(7):973-7.
23. Patel S, et al. Cone beam computed tomography in endodontics—a review. Int Endod J. 2009;42(9):755–66.
24. Estrela C, Bueno MR, Leles CR, Azevedo B, Azevedo JR. Accuracy of cone beam computed tomography and panoramic and periapical radiography for detection of apical periodontitis. Journal of endodontics. 2008 Mar 1;34(3):273-9.
25. Hakoma MB, Jedeh M. Awareness and Perception of Sealer Puff among Libyan Dental Practitioners: A Cross-Sectional Survey. AlQalam Journal of Medical and Applied Sciences. 2024 Oct 17:1003-9.
26. Hülsmann M, Peters OA, Dummer PM. Mechanical preparation of root canals: shaping goals, techniques and means. Endodontic topics. 2005 Mar;10(1):30-76.
27. Kim HC, et al. Novel root canal filling materials and techniques. J Endod. 2011;37(3):389–96.
28. Naoum HJ, Chandler NP. Temporization for endodontics. International endodontic journal. 2002 Dec;35(12):964-78.
29. Parashos P, Messer HH. Rotary NiTi instrument fracture and its consequences. Journal of endodontics. 2006 Nov 1;32(11):1031-43.
30. Cotton TP, et al. CBCT for root canal diagnosis and management. J Endod. 2007;33(9):1121–35.
31. Haapasalo M, et al. Irrigation in endodontics. Endod Topics. 2005;10:77–102.

https://journal.utripoli.edu.ly/index.php/Alqalam/index eISSN 2707-7179

المعرفة والسلوكيات والممارسات الخاصة بتقنية السحب الخلفي: مسح مقطعي في علاج جذور الأسنان

محمد منصور بن حكومة[1]، محمد سالم جديع[2]، خالد علي الهنشيري[1]

[1]قسم العلاج التحفظي وعلاج الجذور، كلية الاسنان جامعة طرابلس.
[2] قسم العلاج التحفظي وعلاج الجذور، كلية الاسنان جامعة الزنتان.

المستخلص

هدفت هذه الدراسة إلى تقييم المعرفة والمواقف والممارسات والتحديات التي يواجهها أطباء الأسنان فيما يتعلق بتقنية السحب في علاج جذور الأسنان، وهي طريقة تُستخدم لضمان إحكام الإغلاق القمي أثناء العلاج. تم إجراء دراسة مسحية مقطعية شملت 154 طبيب أسنان، بما في ذلك أطباء الأسنان العامين وأخصائيي علاج جذور الأسنان. تضمنت الاستبيان أقسامًا عن المعلومات الديموغرافية والمعرفة والمواقف تجاه تقنية السحب، بالإضافة إلى الممارسات الحالية والتحديات. تم تحليل البيانات باستخدام الإحصائيات الوصفية واختبار فيشر لتقييم العلاقات بين الخصائص الديموغرافية للممارسين والجوانب المتعلقة بتقنية السحب. بلغت نسبة الاستجابة للمسح 60%، وكان معظم المشاركين من الإناث (77.3%) ومن الممارسين في بداية حياتهم المهنية (66.9% لديهم أقل من خمس سنوات من الخبرة). أظهر معظم المشاركين دراية بتقنية السحب (57.1% أشاروا إلى أنهم على دراية كبيرة بها) واعتبروها ضرورية لضمان إحكام الإغلاق القمي. تضمنت الطرق المستخدمة بشكل شائع لتأكيد السحب التغذية الراجعة اللمسية (68.8%) والتحقق الإشعاعي (63.6%). تضمنت التحديات الرئيسية صعوبة التمييز بين السحب الحقيقي والخاطئ وشكل القناة غير المناسب. أظهر اختبار فيشر وجود علاقة ذات دلالة إحصائية بين نوع الممارسة ومستوى الثقة في التمييز بين السحب الحقيقي والخاطئ ($p = 0.0108$)، مما يشير إلى مستويات ثقة أعلى بين الأخصائيين والممارسين الأكاديميين. ومع ذلك، لم يتم العثور على علاقة ذات دلالة إحصائية بين سنوات الخبرة واختيار الطريقة أو الأداة المستخدمة لتأكيد السحب ($p = 0.9019$). تسلط النتائج الضوء على الحاجة إلى تدريب مستهدف للتمييز بين السحب الحقيقي والخاطئ، خاصةً للممارسين في البيئات العامة. يمكن أن يساعد تحسين الوصول إلى الأدوات التشخيصية المتقدمة وورش العمل العملية في سد فجوات المعرفة وتحسين النتائج السريرية. يجب أن تستكشف الأبحاث المستقبلية تأثير التدخلات التدريبية على كفاءة الممارسين في استخدام تقنية السحب وتحقيق الإغلاق القمي الفعال.

الكلمات المفتاحية: تقنية السحب، علاج جذور الأسنان، علاج قناة الجذر، الإغلاق القمي، أطباء الأسنان، التغذية الراجعة اللمسية، الثقة، الأدوات التشخيصية، احتياجات التدريب.