

Survey on Knowledge about Access Cavity Preparation

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Abstract:

Aim : To record the awareness of dental clinicians on endodontic access cavity preparation

Objective : To conduct a survey on the knowledge of dental clinicians on Access cavity preparation of anterior and posterior teeth

Background : Surveys are a powerful and cost-effective way to not only gather information, but also to identify and diagnose problems faced by clinicians in their day to day practise . Access cavity is a coronal cavity preparation to enter the pulp chamber of a tooth, required for effective removal of infected pulp , cleaning, shaping, and three dimensional obturation of the pulp canal space. Improper access can lead to canals being left untreated, poorly disinfected, difficult to shape and obturate, and may ultimately lead to the failure of the treatment. This survey is conducted in order to evaluate the knowledge of dental clinicians on access cavity preparation.

Reason : The success of the endodontic treatment entirely depends on precise and proper execution of this step hence it is important to assess the knowledge of dental clinicians.

Key words; access, root canal, endodontists, practitioners.

INTRODUCTION

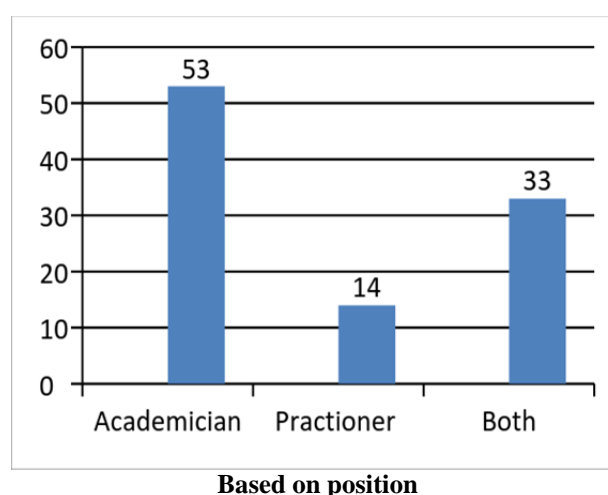
The endodontic cavity preparation is the initial phase of endodontic root canal treatment which allows proper visualisation and accessibility to the root canal orifice, facilitating instrumentation (1,2) and good canal debridement which requires good clinical skill. Endodontic cavity preparation begins with the coronal preparation of the involved tooth with the armamentarium and ends with a final three dimension obturation of the canal space which depends on the care and accuracy taken in this initial preparation(3). Success in endodontic treatment depends on adequate preparation of the root canal space and obturation of the root canal to prevent the passage of micro- organisms and fluid. Access cavity preparation generally refers to the part of the cavity from the occlusion table to the canal orifice. Access cavity preparation is the preliminary step which permits localization, cleaning and shaping, disinfection and obturation of the root canal system and therefore should not be neglected(4). The main objectives of access cavity preparation are to remove all decay, leaking restoration, undermined tooth structure, to conserve healthy tooth structure, to de-roof the pulp chamber, remove necrotic pulp and pulp stones, locate all the root canal orifice, achieve straight line access into the root canal, and remove the dentinal shelves between the canal orifices (5). Proper access cavity makes the succeeding steps of the endodontic treatment easier and safe. The access cavity is the most important clinical stage, as subsequent preparation of the root canal(s) can be severely compromised if this is not well executed.(6) Many innovative concept techniques and instruments have been introduced for successful endodontic treatment. Treatments performed by experts and highly devoted personnel under favourable conditions far from clinical reality, show high success rates. But success of endodontic treatment also depends on knowledge of general practitioner and endodontist regarding technical aspect of endodontic treatment. The outcome of endodontic therapy also been associated with the pre-operative diagnosis of the tooth, microbial factors, maintenance of root canal treatment standards and individual factors such as the dentist

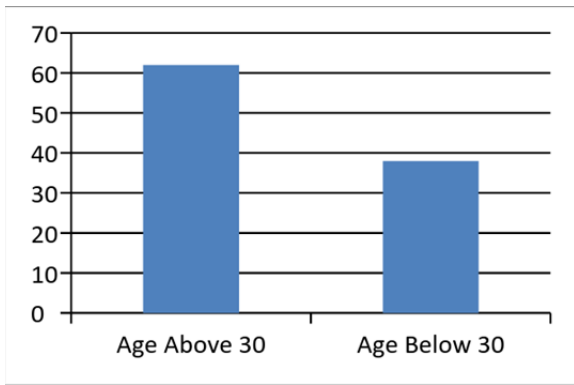
knowledge, attitudes and skills(7). Overall, there is scarce scientific data about the general dental practitioner's approach to endodontic therapy and its impact on the success of root canal treatment is unclear(8,9,10). The purpose of the present study is to evaluate knowledge and investigate the current opinions of general dental practitioner and academicians regarding technical aspects of endodontic treatment.

MATERIALS AND METHODS

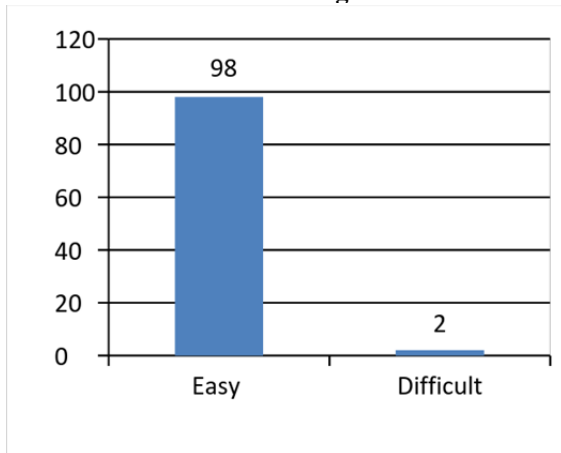
Present study was conducted among academicians, dental practitioners and also postgraduate students and staff of Saveetha Dental College. A questionnaire survey form was distributed among the 100 dental academician and practitioners regarding knowledge and clinical aspects used in access cavity preparation. The questionnaire was constructed with 21 questions addressing on access cavity preparation, complications, errors, instruments, shape of access cavity etc., Data was coded computerized and analyzed by using a SPSS software study was approved and informed concerned was obtained from all the participants.

RESULT

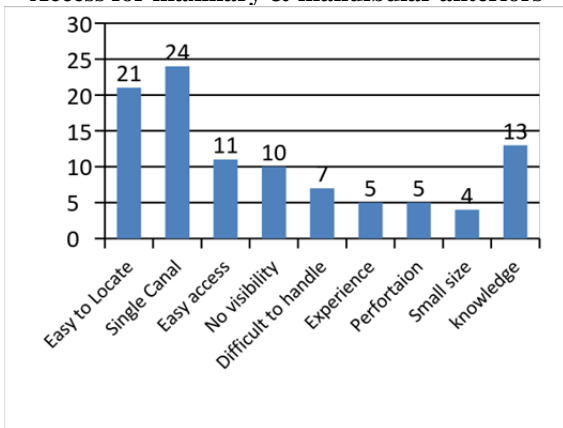




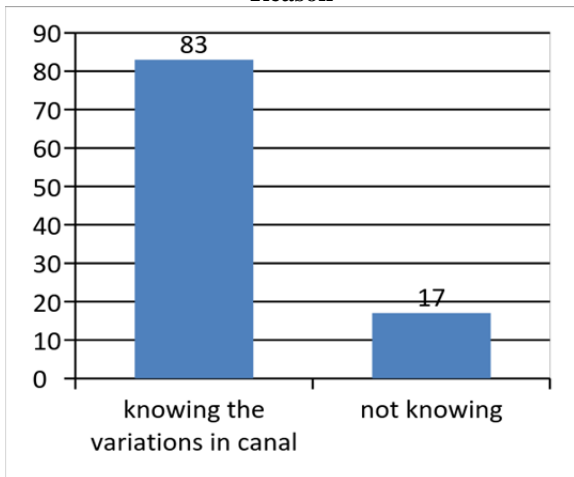
Based on age



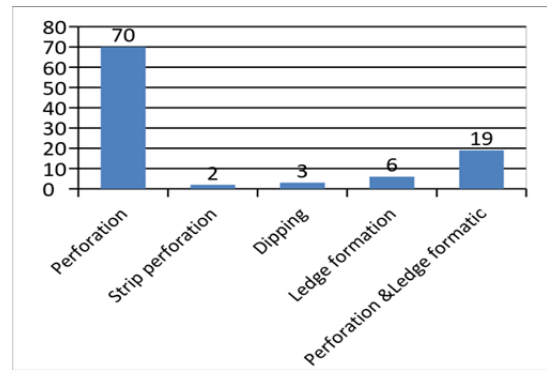
Access for maxillary & mandibular anteriors



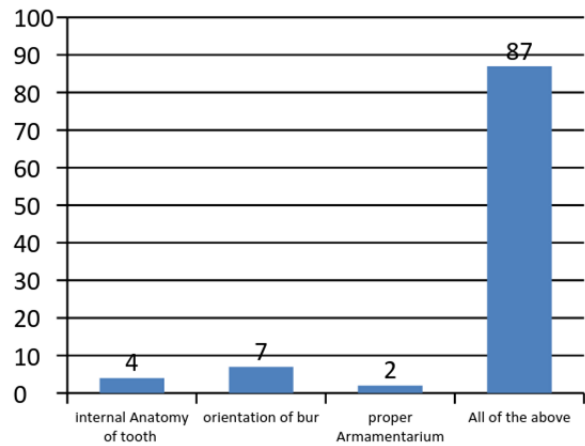
Reason



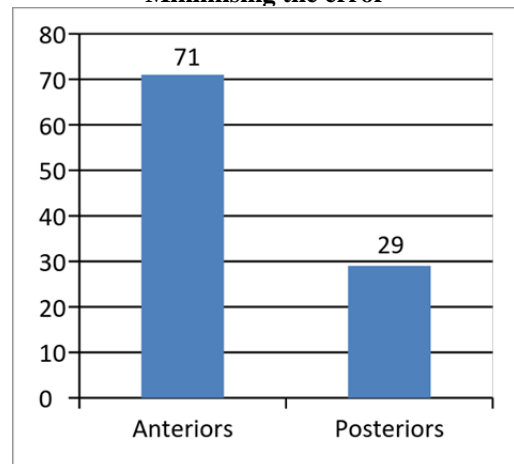
Variations in canal anatomy of posteriors



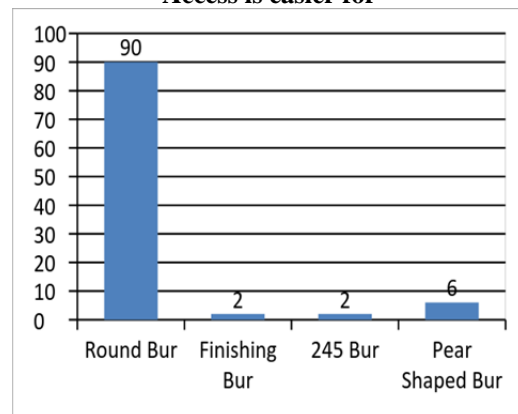
Errors in access cavity preparation



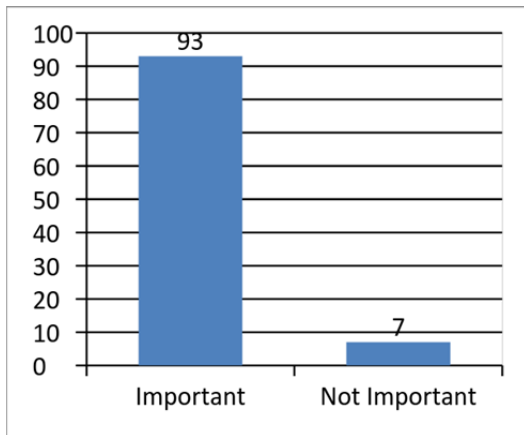
Minimising the error



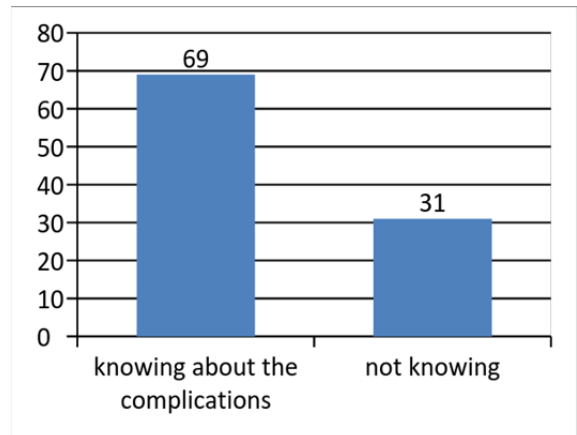
Access is easier for



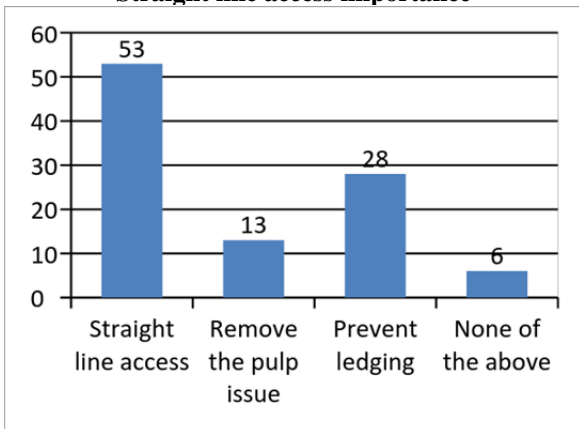
Burs used in access preparation



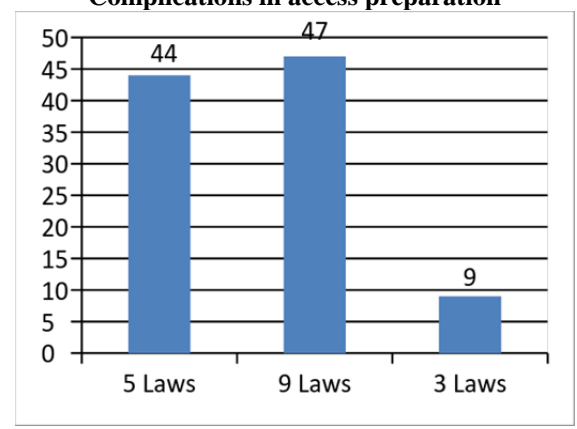
Straight line access importance



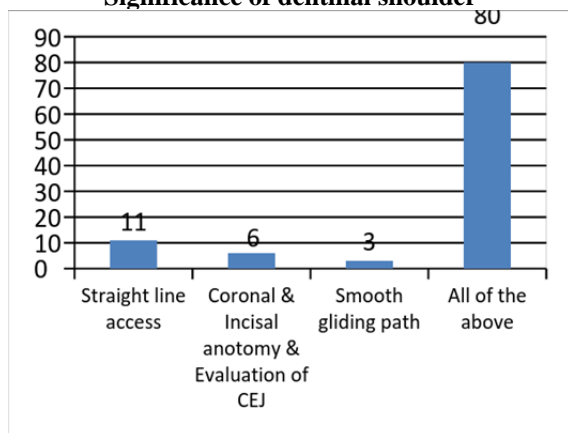
Complications in access preparation



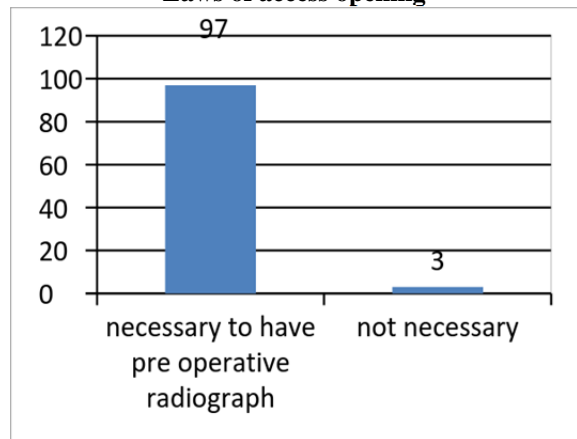
Significance of dentinal shoulder



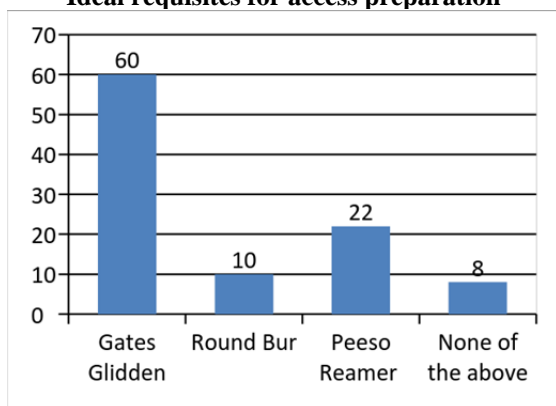
Laws of access opening



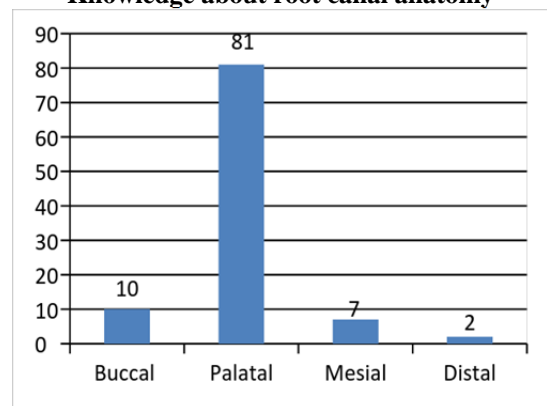
Ideal requisites for access preparation



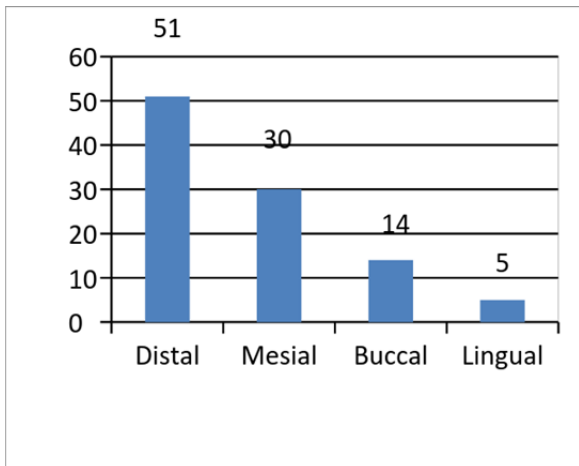
Knowledge about root canal anatomy



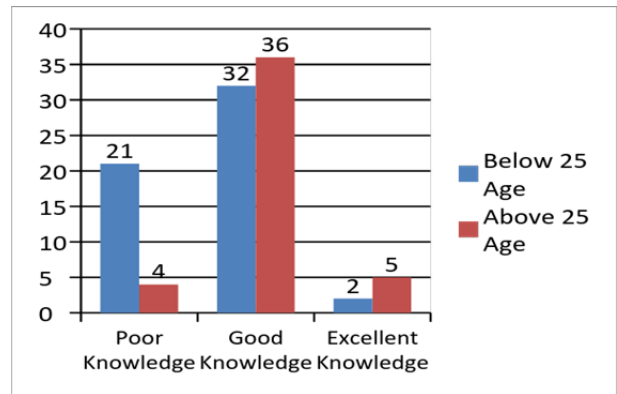
Enlarge access cavity



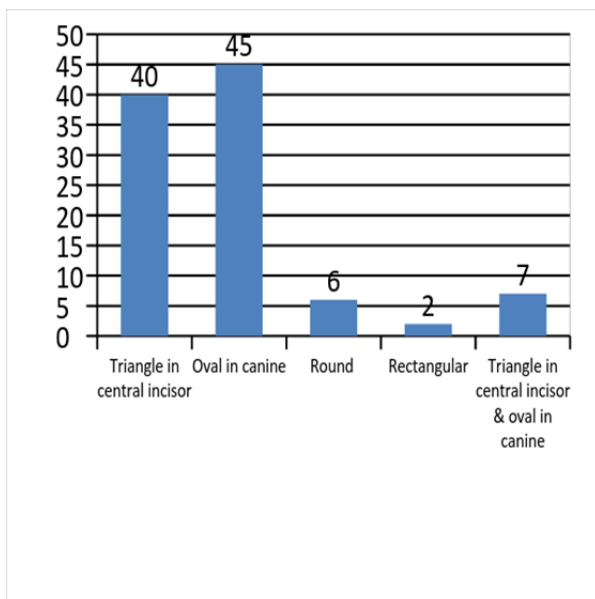
Orifice located first in maxillary molar



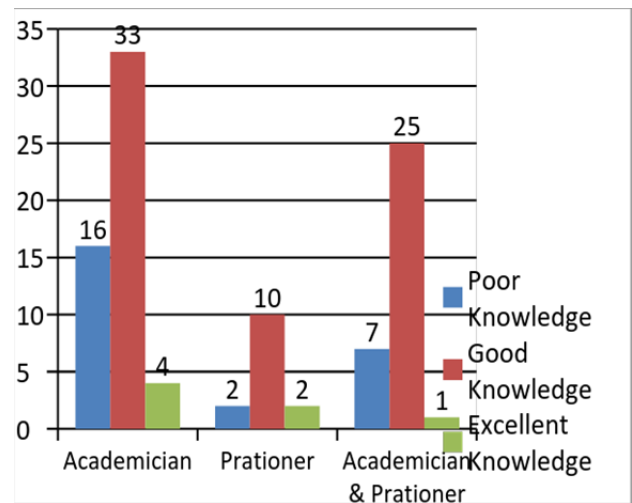
Orifice easy to find in mandibular molar



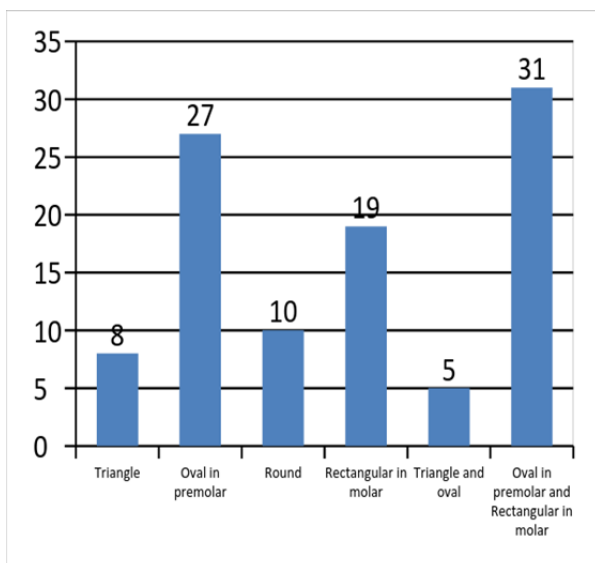
Knowledge associated with age



Shape in maxillary central incisor & canine



Knowledge associated with position



Shape in mandibular premolar and molar

DISCUSSION

The attitudes and approaches of general dental practitioners toward endodontic therapy reflect the quality of the root canal treatment. The survey questionnaire is a common preliminary method used in evaluating health care systems and professionals. The results from the present study revealed the knowledge of the dental academicians and practitioners regarding access cavity preparation. In general, majority of the academicians and age groups above 25 seem to have more knowledge about endodontic therapy. Knowledge on access cavity preparation is a very essential part in endodontics and further steps should be taken in future to improve the knowledge of dental professionals on proper access preparation.

CONCLUSION

Access cavity must be prepared correctly in terms of position and depth in order to permit complete action of endodontic instruments over the entire working length. After complete removal of the roof of the pulp chamber the clinician must have direct vision of the floor and the canal openings. An access cavity that has been prepared improperly in terms of position, depth or extent will hamper the achievement of proper results in endodontic treatment and will ultimately lead to failure by either root perforation, ledge or shelf formation within the canal, instrument breakage, zipping or apical transportation.

SURVEY

1. AGE:
 2. ACADEMICIAN/PRACTITIONER/BOTH
 3. Do you have any knowledge on endodontic access cavity preparation?
Yes • No •
 4. How do you find the access cavity preparation for mandibular and maxillary anteriors?
Difficult • Easy •
 5. Give reasons as to why it is difficult or easy.
 6. Do you know about the variations in canal anatomy of premolars and molars?
Yes • No •
 7. Do you know what errors can occur during access cavity preparation?
 - Perforation
 - Strip perforation
 - Dipping
 - Ledge formation
 8. Any idea on how to minimise the errors?
 - should know the internal anatomy of tooth
 - proper orientation of bur
 - using proper armamentarium
 - all of the above
 9. The access cavity is easier for ?
anteriors
posteriors
 10. Name the bur used in access opening?
round bur
245 bur
finishing bur
pear shaped bur
 11. Is straight line access cavity preparation important?
yes no
 12. What is the significance of dentinal shoulder and Is it necessary to remove the dentinal shoulder?
Give reasons --
 - Straight line access
 - Remove the pulp tissue
 - Prevent ledging
 - None of the above
 13. What are the ideal requisites for access cavity preparation ..?
 - Straight line access
 - Coronal & incisal anatomy & evaluation of CEJ
 - Smooth gliding path
 - all of the above
 14. How to enlarge the access cavity preparation..?
 - Gates glidden
 - Round bur
 - Peeso reamer
 - None of the above
 15. Do you know about the various complications in access cavity preparation..?
 yes no
 16. How many laws of access opening are there..?
 5 9 3
 17. Is it important to have a knowledge about the root canal anatomy using a pre operative radiograph before access opening..?
 yes no
 18. Which orifice is the largest and is located first in the maxillary molar?
 buccal palatal mesial distal
 19. Which orifice is easy to find in mandibular molar?
 distal mesial buccal Lingual
 20. What is the shape of access cavity in maxillary central incisor and canine?
 Triangle in central incisor
 oval in canine
 round
 rectangular
 21. What is the shape of access cavity in mandibular premolar and molar?
 Triangle
 oval in premolar
 round
 rectangular in molar
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REFERENCES

1. Patel S, Rhodes J. A practical guide to endodontic access cavity preparation in molar teeth. Br Dent J 2007;203:133-40.
2. Johnson BR. Endodontic access. Gen Dent 2009;57:570-7.
3. Endodontic cavity preparation John I. Ingle, Van T. Himel, Carl E. Hawrish, Gerald N. Glickman, Thomas Serene, Paul A. Rosenberg, L. Stephen Buchanan, John D. West, Clifford J. Ruddle, Joe H. Camp, James B. Roane, and Silvia C. M. Cecchini
4. Access Cavity- the First Step in a Successful Endodontic Treatment LELIA GHEORGHÎȚĂ, MIHAELA ȚUCULINA, OANA DIACONU, VICTORIA ANDREI, IREN MORARU, MARILENA BĂȚĂIOSU Current Health Sciences Journal Vol. 35, No. 1, 2009
5. Access cavity preparation – an anatomical and clinical perspective Vol. 10 Issue 3 Jan. - Mar. 2010
6. Br Dent J. 2014 Mar;216(6):333-9. doi: 10.1038/sj.bdj.2014.206. Access cavity preparation. Adams N1, Tomson PL2.
7. Knowledge Regarding Technical Aspects of Endodontic Treatment Dr. S. Anitha Rao , P. Jagadeesh Babu, K. Apovra Volume : 3 | Issue : 8 | Aug 2013 | ISSN - 2249-555X
8. Gatewood RS, Himel VT, Dorn SO. Treatment of the endodontic emergency: a decade later. J Endod 1990;6:284-91. |
9. Whitten BH, Gardiner DL, Jeansonne BG, Lemon RR Current trends in endodontic treatment: report of a national survey. J Am Dental Assoc 1996;127:1333-41. |
10. Whitworth JM, Seccombe GV, Shoker K, Steele J G. Use of rubber dam and irrigant selection in UK general dental practice. Int Endod J 2000;33:435-41