

# **Carving Of A Tooth From A Wax Block: Perceptions, Common Mistakes And Scope Of Improvement Among Undergraduate Dental Students: A Singlecentric Study**

Manya Dalal, Dr. Mahesh Dalal, Dr.Kinnari Rajpura Patel, Dr.Vipul Munia,  
Dr.Niyanta Joshi

*BDS Student, AMC Dental College And Hospital, Khokhra, Ahmedabad, India.*

*Ph.D. Guide, Shri JTT University, Rajasthan, India.*

*Head Of Department, Oral Pathology And Oral Microbiology, AMC Dental College And Hospital, Khokhra, Ahmedabad, India*

*Tutor, Oral Pathology And Oral Microbiology, AMC Dental College And Hospital, Khokhra, Ahmedabad, India*

*Head Of Department, Pedodontics And Preventive Dentistry, AMC Dental College And Hospital, Khokhra, Ahmedabad, India*

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## **Abstract**

*Carving the tooth using Lacron's Carver from a wax block is an important activity during the first-year BDS practical sessions. For a better understanding of students, the model is made using wax block. Such model preparation practice is very important as it improves five neuromotor skills which are necessary in clinical practice and also helpful to understand morphology of tooth. The model making is preceded by explanation in theory class and demonstration in practical class. However, during the making of the model from the wax block, students are prone to many mistakes including common mistakes. As the time passes and repetitions are done, the ability of a student to make the model without mistakes increases. A study was carried out in AMC Dental College to evaluate understanding of students on carving of tooth from wax block. This paper aims to discuss mistakes during the carving of teeth from wax blocks and solutions for such mistakes along with scope of improvement among the students.*

**Keywords:** *Tooth, Model making, Mistakes, Solutions, Wax block, Lacron's Carver, Neuromotor skills*

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## **I. Introduction**

Dental study is highly interesting as compared to medicine where 209 bones are to be studied in detail, only Head and Neck are to be concentrated, especially maxilla and mandible are studied upon in detail in the field of dentistry. Thus keeping an eye on details is always a part of BDS study. As there are different types of tooth in a human mouth, key specific anatomical feature of these teeth is to be understood in detail and to be studied with full focus and concentration as it forms basis of understanding of a future dentist's career. Thus carving the tooth using Lacron's Carver from a wax block is an important activity during the first-year BDS. Separate practical sessions are devoted for it. Some studies are carried out on student understanding and perception in India and abroad.<sup>1-4</sup> Thus it will be interesting to study common errors during the carving to arrive at solutions and improvement of the activity.

## **II. Aim**

Study aims to discuss mistakes during the carving of teeth from wax blocks and possible solutions for such mistakes along with scope of improvement among the students.

## **III. Method**

To better analyse understanding of students in carving of tooth, a questionnaire (Annexure I) was designed and circulated among second and third year students of B.D.S. at A.M.C. Dental College and Hospital, Khokhra, Ahmedabad. All those students willing to participate were provided the questionnaire. Total 33 students participated in the study. Responses were analysed using Microsoft excel 2016 and mean and standard deviation were calculated.

#### IV. Results

| QNo | Question  | A1            | A2             | A3       |
|-----|---|---------------|----------------|----------|
| 1   | Did you carve complete set of teeth ?   | Yes-27        | No-6           | -        |
| 2   | Which part of tooth anatomy do you think is important?  | Crown-7       | Root-1         | Both-25  |
| 3   | Has tooth carving helped you to master tooth morphology?  | Yes-33        | No-0           | -        |
| 4   | Has the carving helped you familiarize with lab instruments and understand proper grip of instruments ? | Yes-32        | No-0           | May be-1 |
| 5   | Was tooth carving helpful in understanding restorative dentistry ?                                      | Yes- 27       | No-2           | May be-4 |
| 6   | Did carving of tooth helped you in understanding dental occlusion?                                      | Yes-28        | No-5           | -        |
| 7   | Do you think the carving exercise has room for improvement and needs to be taught better ?              | Yes-30        | No-0           | May be-3 |
| 8   | Is total time allotted for tooth carving in UG Dental class adequate?                                   | Sufficient-31 | Insufficient-2 | -        |

| QNo | Question   | A1  | A2  | A3                             | A4                          | A5       |
|-----|--|---|---|--------------------------------|-----------------------------|----------|
| 9   | Do you think carving should be continued in UG syllabus?   | Yes-32  | No-1  | -                              | -                           | -        |
| 10  | Do you think computer software with image simulation technique will help learning tooth anatomy better ? | Yes-22  | No-1  | Not sure-10                    | -                           | -        |
| 11  | Do you think the carving exercise has room for improvement and needs to be taught better ?               | Yes-25  | No-8  | -                              | -                           | -        |
| 12  | Which is the most common mistake in tooth carving from a wax block ?                                     | Improper Dimensions -9                        | Improper Occlusal Outline-7                                 | Improper Lingual convergence-2 | Shape of root (Improper)-15 | -        |
| 13  | Which of the following way of demonstration is better?   | Online-3                                      | Offline-30  | -                              | -                           | -        |
| 14  | Which is most difficult tooth to carve?  | Anteriors-2                                   | Premolars-3   | Molar-28                       | -                           | -        |
| 15  | Which is most difficult surface to carve posterior teeth?  | Occlusal-27                                   | Buccal-0  | Lingual/Palatal-6              | Mesial-0                    | Distal-0 |
| 16  | How to overcome the common mistakes ?  | Small practice test at end of each session-26 | Small theoretical test of morphology before demonstration-7 | -                              | -                           | -        |

#### V. Discussion

Out of 33 participants, 7 were male and 26 were female. More than 80% of students were found to have carved complete set of teeth. Most of the students feel that not only crown but also root is important as a part of tooth anatomy. All the students agreed that carving helped them to master tooth morphology.

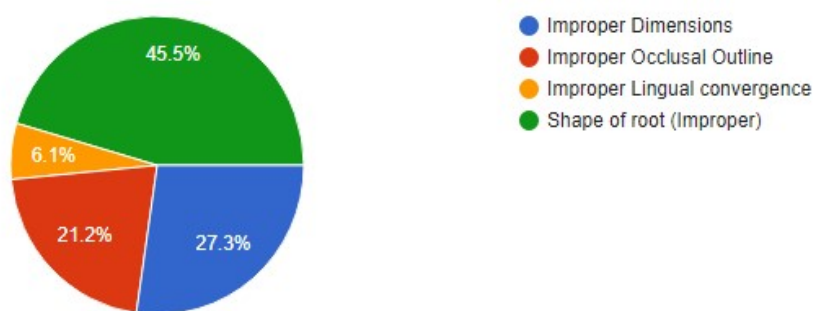


Fig.-1 Responses to the question on common mistake in tooth carving from a wax block.

It also helped them to familiarize with lab instruments. Tooth carving helped the students in restorative dentistry as well as in dental occlusion. Carving exercise has room for improvement and practical sessions are allotted for improvement. Most of the students agreed that computer software simulation technique will help learning tooth anatomy better.

According to the students, the most common mistakes in tooth carving were improper dimension and improper shape of root as tooth breaks up from apical or middle third while polishing. As per the survey, 81.8% students found that occlusal surface was most difficult to carve posterior teeth. As per students point of view,

small practice test at the end of each session will help to overcome common mistakes It was observed that almost all participants were in the favour of a practice test at the end of session.

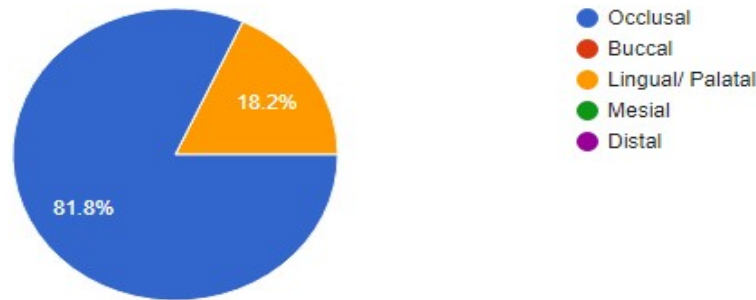


Fig.-2 Responses to the question on most difficult surface to carve the posterior teeth.

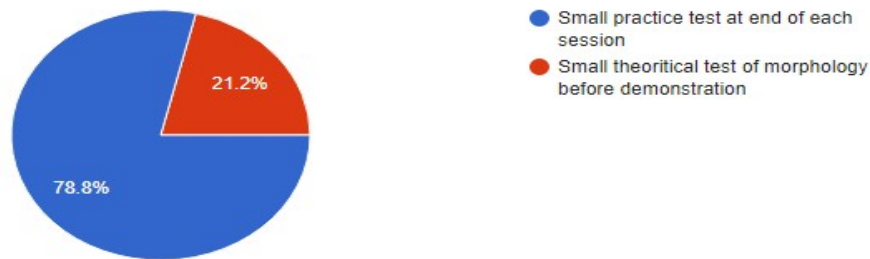


Fig.-3 Responses to the question on How to overcome the common mistakes.

Results throw light on enthusiasm and keenness of students to learn better as the importance of this activity is understood by them. Higher penetration of questionnaire in large no. of students will help them to improve upon their learning by understanding better. It is proposed to circulate questionnaire to other centers also in near future for multi-centric study.

## VI. Conclusion

Tooth model making is an important activity in first year study and feedback of questionnaire increase student's interactions and hence understanding of the subject and promote their inquisitiveness. It should be circulated to other centers to include more students.

## Acknowledgement

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## Annexure I

Which year are you currently pursuing in BDS ? 2nd –BDS/3rd- BDS/ 4th-BDS

Q1) Did you carve complete set of teeth ?

YES

NO

Q2) Which part of tooth anatomy do you think is important?

CROWN

ROOT

BOTH

Q3) Has tooth carving helped you to master tooth morphology?

Yes

No

Q4) Has the carving helped you familiarize with lab instruments and understand proper grip of instruments ?

Yes

No

Maybe

Q5) Was tooth carving helpful in understanding restorative dentistry?

Yes

No

Maybe

Q6) Did carving of tooth helped you in understanding dental occlusion?

Yes

No

Q7) Has carving helped you to improve your pre-clinical/ clinical skills?

Yes

No

Maybe

Q8) Is total time allotted for tooth carving in UG Dental class adequate?

Sufficient

Insufficient

Q9) Do you think carving should be continued in UG syllabus?

Yes

No

Q10) Do you think computer software with image simulation technique will help learning tooth anatomy better?

Yes

No

Not sure

Q11) Do you think the carving exercise has room for improvement and needs to be taught better?

Yes

No

Q12) Which is the most common mistake in tooth carving from a wax block?

Improper Dimensions

Improper Occlusal Outline

Improper Lingual convergence

Shape of root (Improper)

Q13) Which of the following way of demonstration is better?

Online

Offline

Q14) Which is most difficult tooth to carve?

Anteriors

Premolars

Molars

Q15) Which is most difficult surface to carve posterior teeth?

Occlusal

Buccal

Lingual/ Palatal

Mesial

Distal

Q16) How to overcome the common mistakes ?

Small practice test at end of each session

Small theoretical test of morphology before demonstration