



CHILDREN'S EDUCATION SOCIETY (Regd.)

THE OXFORD DENTAL COLLEGE

(Recognized by the Govt. of Karnataka, Affiliated to Rajiv Gandhi University of Health Sciences,
Karnataka & Recognised by Dental Council of India, New Delhi)

Bommanahalli, Hosur Road, Bangalore - 560 068.

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Innovation Ecosystem

3.2.1 Institution has created an ecosystem for innovations including incubation centre and other initiatives for creation and transfer of knowledge

SL. No.	DEPARTMENT	No.
1.	Department of conservative dentistry and endodontics	2
2.	Department of Periodontology	1
3.	Department of Oral and Maxillofacial Pathology	1
4.	Department of Prosthodontics	1
5.	Department of Pedodontics	2

INCUBATION CENTRE

TODC provides quality education and training to students to establish themselves as successful providers of quality health care to society by providing a favourable ecosystem for research and technology-driven innovation to materialize their ideas. Our college established an incubation centre in 2010 with the tagline "Dream. Create. Inspire."

Department on the campus

The roles of the incubation centre are categorized into academic and research-related issues. The incubator centre has organized programmes such as "Introduction to Clinics", "Intellectual Property Rights," and "Research and Publication: The Importance of Academics." We are encouraging our very own students and alumni to take up research projects and make use of our incubation centre. Our incubation centre is regularly updated with the latest research equipment. Regular discussions are held with the concerned members to motivate various students and faculties from our sister concern to make use of the facilities provided at our incubation centre. Both our UG and PG students are encouraged to carry out various short studies under the able guidance of our staff members.

We are also looking forward to collaborating with other universities to gain more exposure.

Though we don't have an incubation centre, we have an incubation facilitation planning centre.



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DEPARTMENT OF CONSERVATIVE DENTISTRY AND ENDODONTICS

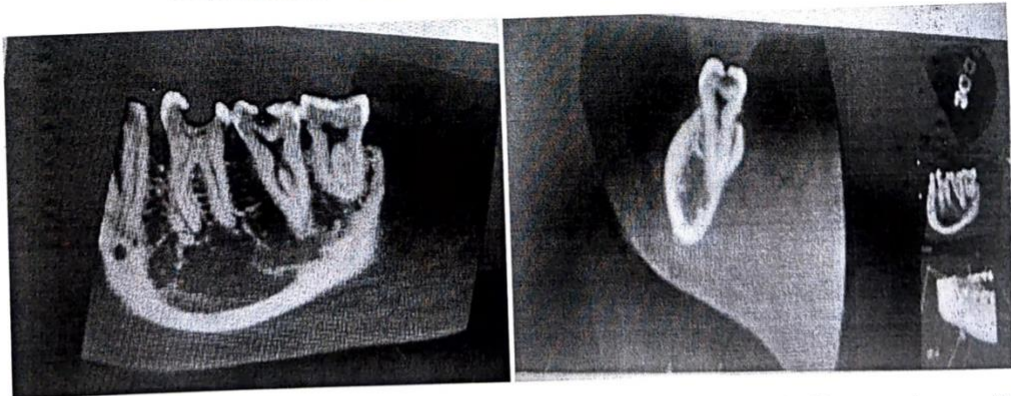
2022- 2023

PROJECT 1: ROOT CANAL CONFIGURATION

Sex	Female	Male	Total
MST canal in mesial root	52	53	105
MST canal in distal root	41	27	68
Total	93	80	173

χ² = 1.876, p = 0.169

Prevalence of middle mesial canal



Every clinician aims to achieve the best treatment outcomes of endodontically treated cases. To attain the best results, one must diagnose the condition very well. Therefore, complete knowledge of root canal morphology with a comprehensive understanding of the root canal system complexity is particularly important in clinical practice to reach the desired treatment goals.



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Incisors and canines

- Morphological examination of the maxillary and mandibular incisor-canine group showed that these teeth generally had one root for one canal.
- Anatomical variations were more frequent in the mandibular central and lateral incisors, where 2 canals for one root were identified in 11% of left central incisors, 13% of right central incisors, 12% of left lateral incisors, and 13% of right lateral incisors.

Premolars

- The first maxillary premolar generally had 2 canals for 2 roots but 3 canals for 3 roots were also found.
- The second maxillary premolar generally showed 1 canal for 1 root. In the mandible, the majority of premolars had a single root with a single canal.
- However, the first premolar showed more variations, with 2 canals for one root or 2 canals for 2 roots.

Molars

- The most common morphology for maxillary molars was 3 roots for both first and second molars.
- Maxillary first molars presented with 4 canals in about half of the cases, while second molars in general had 3 roots and 3 canals; however, 4-canal, 3-root and 3-canal as well as 1-root morphologies were also present.
- The mandibular first molar generally had 3 canals and 2 roots or 4 canals and 2 roots.
- The second molar more generally had 3 canals and 2 roots. However, the presence of 3 canals and 3 roots was less frequent (left 7%, right 10%).
- **Outcome: students will know the canal morphology which will be helpful for the treatment protocol.**


Head of the Department

Dr. SRIREKHA A

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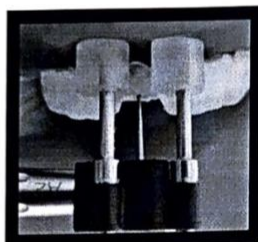
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PROJECT 2: PRICIGUIDE



PriciGuide™ and **PriciPost™** are new techniques in guided endodontics developed by **Roots to Cusps Private Limited™** that uses two guide rails to direct the drill into the root canal.

PriciGuide™ can be used in all cases, including teeth with calcified canals or crowns. **PriciPost™** is a system that helps to create a post space in severely damaged teeth and remove broken posts.

Both **PriciGuide™** and **PriciPost™** can save time for dentists and improve treatment efficiency. They can also reduce treatment time for patients and improve the prognosis of treatment.

PriciGuide™ is different from the sleeve technique because it does not require a sleeve with an offset. This results in several advantages, including:

Reduced deviation: The two guide rails provide more precise guidance than a single sleeve.

Better visibility: The guide does not cover the tooth, so the dentist has a better view of the working area.

No overheating: The open architecture of the guide allows the coolant to reach the drill bit, preventing it from overheating.

Shorter burs can be used: The lack of an offset means that shorter burs can be used, which reduces the risk of perforation.



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Shorter burs can be used: The lack of an offset means that shorter burs can be used, which reduces the risk of perforation.

Coolant can reach the bur: The design of the guide allows the coolant to reach the drill bit, preventing it from overheating.

Adaptable to all areas of the jaw: The modular design of the guide allows it to be adapted to all areas of the jaw. The length of the guide rails is selected based on the length of the bur, which is in turn selected based on the extent to which the tooth needs to be drilled.

OUTCOME: Overall, PriciGuide™ and PriciPost™ systems by Roots to Cusps Private Limited™ are promising new techniques in guided endodontics that offers several advantages over the sleeve technique. It is more precise, provides better visibility, and reduces the risk of complications.

Head of the Department

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DEPARTMENT OF PERIODONTOLOGY

2022-2023

PROJECT 3: Novel technique in TLM

Journal club presentations will be conducted with an initial introduction before the article presentation, which will be given by a first-year postgraduate student. The purpose of this is to briefly introduce the topic to the audience to gain a better understanding of the topic.

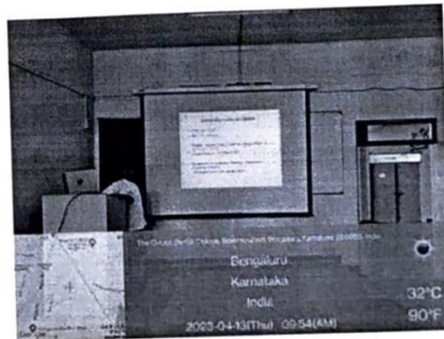
The article will be presented by the presenter, and the post-presentation session will be moderated by a 3rd- or 2nd-year postgraduate student.

Rationale:

This will help all the students as well as the faculty to be engaged in the discussion and will also provide an opportunity for the students to put forth their understanding of the topic, which will also pave the way for gaining more knowledge regarding that topic.

Outcome:

- This helps in building the confidence of the presenter as well as the moderator in putting forward their points regarding the topic.
- Helps in motivating the students to have a comprehensive knowledge of the topic.
Creates an atmosphere for a healthy debate among the students, thus sharing their knowledge with their peers.



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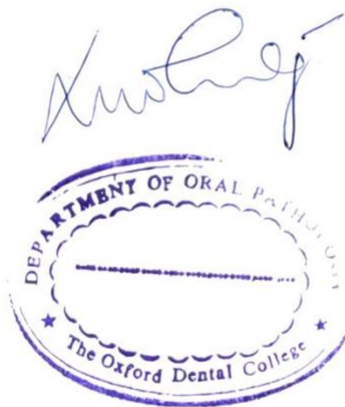
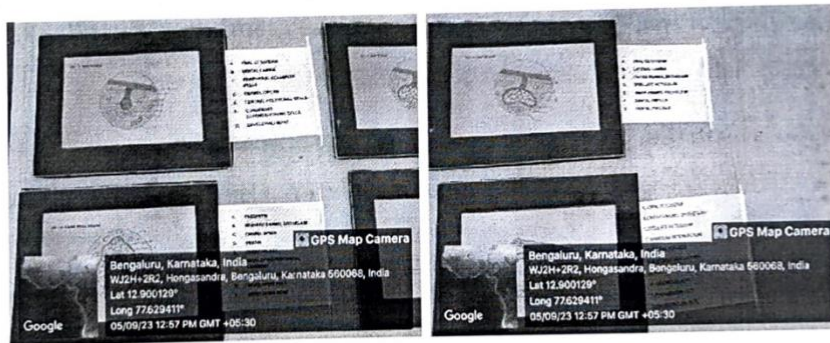
DEPARTMENT OF ORAL AND MAXILLOFACIAL PATHOLOGY 2022-2023

PROJECT 4:

Rationale: 1st BDS undergraduate students have contributed innovative ideas for teaching and learning methodology by creating unique viva cards.

Outcome: This helped students to understand the Histology, analyze, prepare and perform better in the university examinations.

These are part of syllabus which students must know set by University and able to understand, evaluate and remember according to Blooms Taxonomy.



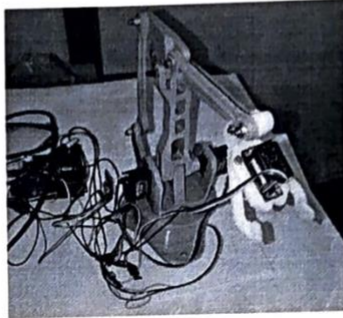


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DEPARTMENT OF PROSTHODONTICS

2022-2023

PROJECT 5: AI and Robotics in Prosthodontics; a look into the future.



Describing the versatile uses of robots and their progress within the elaborative field of prosthetic dentistry.

AI and robotics are revolutionizing many fields, including prosthodontics, which is a dental specialty that deals with the design, fabrication, and fitting of dental prostheses, such as dentures, bridges, and implants.

1. **Digital Impressions:** AI and robotics are being used to capture highly accurate digital impressions of patient's oral cavity, replacing traditional impression techniques.
2. **CAD/CAM Systems:** Used to design and fabricate dental restorations, such as crowns and bridges, with precision and accuracy.
3. **Implant Planning:** AI is being used to plan dental implant placement by analyzing digital images of the patient's jawbone and simulating the implant placement process.
4. **Robotics-Assisted Surgery:** Robotic systems can provide real-time feedback to the prosthodontist during the surgical procedure, helping to ensure accurate implant placement and reducing the risk of complications.
5. **Speech Recognition:** AI-powered speech recognition software is being used to evaluate patient's speech patterns and identify speech-related problems, such as those caused by



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dentures or other prostheses. This can help prosthodontists to design and fabricate prostheses that improve patient's speech patterns.

Outcome:

It is beneficial to the students as well as the society, as this will significantly increase the future advancements in Prosthodontics.

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DEPARTMENT OF PEDODONTICS

2022-2023

PROJECT 6:

Virtual reality (VR) is an interactive computer-generated experience using a head-mounted display, which creates an immersive experience through visual and sound effects. It is hypothesized that virtual reality distraction will decrease dental anxiety during the administration of local anaesthesia in paediatric patients. Hence the aim of this study is to evaluate the effect of distraction using virtual reality.

Rationale:

1. To reduce dental anxiety
2. To alleviate discomfort
3. To help in distraction during local anesthesia

How it helps the students and society?

For student's point of view, virtual reality headset creates an immersive experience through visual and sound effects. It is a distraction method which will decrease anxiety during local anesthesia.





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PROJECT 7:

Pain control and patient comfort during dental procedures are one of the most important topics related to behavior management in children. The usual routes of drug administration are often painful. On the other hand, electronic anesthesia delivery syringe systems have been introduced to increase patient comfort during dental injections and also precisely to control the delivery of local anesthesia. Star Pen is a dental anesthesia device with auto aspiration which enables safer treatment compared with traditional manual injection. This device adopts intelligent algorithm control with pressure feedback technology. It controls the pressure of injection speed, comfortable and painless. It is a Cordless pen type which is compact, and flexible. It also has an autoclavable cartridge holder.

Rationale:

1. To reduce painful dental anesthesia,
2. To alleviate discomfort,
3. To help in better behavior management
4. To reduce anxiety of needles

How it helps the students and society?

From student's point of view, Electronic Dental Anesthesia is Cordless Pen type which is compact. It has a subtle tune which plays during LA Delivery which helps in calming the patient. The design of the device is Very different from conventional syringe so the patient may not have Any bad past experience of the device.

