Awareness On Mastoid Implants Among Dental Students

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Abstract

Introduction: The goal of modern dentistry is to provide patients with good oral health in a predictable fashion. The edentulous patient may hoot have good masticatory function or aesthetics. When wearing a removable denture the efficiency is reduced to one sixth than natural dentition. An ideal prosthesis can bring back normal muscle activity thereby improving mastication. Implant Prosthetic options just do not rely on alveolar bone. There are many other options too. One such option is the mastoid implants. Our aim is to evaluate the awareness on mastoid implants among dental students.

Materials and methods: A set of 10 questions were formulated and distributed among the undergraduate students to determine their awareness on mastoid implants. All data were collected and analysis was done. The data were entered in an Excel sheet and were imported to SPSS software by IBM.

Results: 80% of the participants were undergraduate students. Also 35% have ideas regarding mastoid implants and very few participants were trained in mastoid implants, only 3%. Almost 60% of study participants agree that mastoid implants may be highly valued in the future.

Conclusion: Within the limitations of the study it can be said that there is very little awareness about mastoid implants among the student population and conducting more educational programs and providing more hands-on training will motivate the upcoming dental professionals to be well aware of future prospects of maxillofacial prosthetic treatment.

Keywords: mastoid, innovative technology, innovative technique, eco friendly, novel synthesis

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INTRODUCTION

Dental implant restoration has been considered to be one of the most reliable methods for treating partial or full edentulism (1–3). Implant surgeries were performed in specialized clinics in the past. Today, however, it is quite popular in general dentistry. Health insurance coverage for dental implant treatment varies from country to country (4–7). Maxillofacial prosthesis is not limited to alveolar bone but also pertains to various bones like the zygomatic, pterygoid, mastoid. Of this mastoid implants are usually done for surgical procedures like mastoidectomy.

A cochlear implant (CI) is a surgically implanted device consisting of external and internal components (8–11). An external microphone and speech processor are worn behind the ear and convert sound into an electric signal. A magnet held external transmitter sends the signal via electromagnetic induction through the skin to an internal receiver–stimulator. The receiver–stimulator converts the signal into rapid electrical impulses which are distributed to multiple electrodes on an electrode array implanted within the cochlea. The electrodes electrically stimulate the spiral ganglion cells along the cochlear turns, which then travel along the auditory nerve axons to the brain for sound perception. Straight lateral wall electrode arrays and pre-curved perimodiolar electrode arrays are available in different lengths for coverage of various cochlear duct lengths (12,13). Similar cases of bone defects can be treated differently according to the surgeon’s preference. Our team has extensive knowledge and research experience that has translated into high quality publications (14–23), (24–29), (30–35). The purpose of this study is to evaluate the knowledge and awareness among students regarding mastoid implants.
Materials And Methods

This was a survey based study conducted in the month of March 2021, using the online survey platform SurveyPlanet®. This survey was taken up by 100 dental students (both undergraduates and postgraduates) of both genders studying at a private dental university in Chennai, India. The questionnaire consisted of 10 questions. The questions were framed to evaluate the knowledge and awareness of dental students about the mastoid implants when used in dentistry. The data was collected, tabulated in Microsoft Excel® and coded for analysis. The Statistical Package for the Social Sciences for Windows (Version 20.0, SPSS, Inc., Chicago, U.S.A.) was used to analyse the data obtained.

Results And Discussion

It can be seen that the majority of the participants (80%) were undergraduate students with less than 6 months of experience in implant dentistry. Also (35%) have ideas regarding mastoid implants and very few participants were trained in mastoid implants only 3%. Almost 60 percent of study participants agree that mastoid implants may be highly valued in the future.

Figure 1: Bar graph represents the awareness of participants regarding mastoid implants. The X axis represents the qualification (BDS, MDS) and Y axis represents the awareness level (Blue- No, Green- Yes). The graph shows the association between qualification and awareness. Chi square analysis was done and there was no statistically significant difference seen in awareness among participants. P value was > 0.01.
Figure 2: Bar graph represents the placement of mastoid implants individually or under assistance. X axis represents the qualification (BDS, MDS) and Y axis represents the placement of mastoid implants individually or under assistance (Blue- No, Green- Yes). The graph shows the association between qualification and placement. Chi square analysis was done and there was no statistically significant difference seen in experience among participants. P value was > 0.01.

Figure 3: Bar graph represents the participants’ idea regarding scope of mastoid implants. X axis represents the qualification (BDS, MDS) and Y axis represents the participants’ idea regarding scope of mastoid implants (Blue- High, Green- Low). The graph shows the association between qualification and idea regarding scope. Chi square analysis was done and there was statistically significant difference seen in opinion about future scope. P value was <0.01.
Maxillofacial deformities are embarrassing to patients and may negatively affect their physical and psychological health, potentially resulting in serious psychiatric, familial, and social problems. These deformities can be congenital, caused by malformation and developmental disturbances, or acquired, caused by pathologies such as necrotizing diseases and oncologic surgeries or trauma. Plastic (or autologous) surgery is generally preferred over alloplastic (or artificial) reconstruction, when appropriate. Nevertheless, several congenital and acquired defects still require prosthetic restoration.

In 1953, Ackerman defined maxillofacial prostheses as the phase of dentistry that repairs and artificially replaces parts of the face after injuries or surgical intervention. This definition excluded the use of prostheses to treat congenital craniofacial deformities in an effort to improve facial aesthetics. Maxillofacial reconstruction involves implanting artificial substitutes for intraoral and extraoral structures such as the eyes, ears, nose, maxilla, mandible, esophagus, cranial bones, and palate. Maxillofacial prostheses are primarily fabricated using acrylic resin and/or silicone, according to the facial structure of the patient. The prostheses are retained and supported by a number of structures such as osseointegrated implants, the remaining skin with or without adhesive, body cavities, and teeth.

Maxillofacial prostheses have an important impact on the patient’s quality of life and self-esteem, as they can immediately correct the defects that occur after surgical procedures. The prostheses allow individuals to reintegrate into their social and familial environments, making them happier and more confident. In order to achieve success, it is necessary to integrate different health professionals, such as doctors, nurses, psychologists, physiotherapists, speech therapists, and dentists for prosthetic rehabilitation.

Several materials, techniques, and clinical approaches have been used for maxillofacial prostheses. A thorough knowledge on classification systems for maxillofacial prostheses, different types of prostheses, their origin and evolution, current materials and techniques, future needs, and improvements for restorative modality using mastoid and extraoral implants is required for effective clinical delivery. Implant-retained auricular prosthesis are a successful treatment modality for children with microtia. They involve only minor surgical intervention of implant placement and result in an esthetically pleasing outcome. Integration of digital technologies (DT) in the prosthetic reconstruction process is a new approach toward enhancing outcomes.

### Conclusion

Within the limitations of the study it can be said that there is very little awareness about mastoid implants among the student population and conducting more CDE programs and providing more hands-on training will motivate the upcoming dental professionals to be well aware of future prospects of maxillofacial prosthetic treatment.

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### Author Contribution

All the authors contributed equally to the study

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### Conflict Of Interest

The author have no conflict of interest
REFERENCES


34. Mathew MG, Samuel SR, Soni AJ, Roopa KB. Evaluation of adhesion of Streptococcus mutans, plaque accumulation on zirconia and stainless steel