

AWARENESS AND KNOWLEDGE ON ZYGOMATIC IMPLANT AMONG DENTAL PROFESSIONALS

Dhinesh Kumar Sanggaya

Saveetha Dental College,
Saveetha Institute of Medical and Technical Sciences,
Saveetha University, Chennai, India.

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ABSTRACT:

Aim: To determine the level of awareness and knowledge on zygomatic implant in severely atrophic maxilla among dental professionals.

Objective: Since a few researches exist on this material, this study was performed to evaluate the awareness and knowledge of zygomatic implant among dental professionals.

Methodology: This study was conducted among dental professionals from various universities. The study was conducted on a sample size of 100 dental professionals. A simple open ended questionnaire with 15 questions was given to the dentists from various departments to assess their awareness and knowledge on zygomatic implant. The results were recorded.

Results: The study sample consisted of 100 private practitioners. Most of the practitioners were aware about the severely atrophic maxilla (72.1%). Majority of practitioners were aware about the existence of zygomatic implant (72%) as an alternative for replacing teeth. Majority of them were not aware about the Bedrossian classification (70%) for severely atrophic maxilla.

Conclusion: The zygomatic implant is an alternative procedure to bone augmentation, maxillary sinus lift and to bone grafts in patients with posterior atrophic maxilla. The zygomatic implant technique should be regarded as a major surgical procedure and proper training is needed.

Keywords: zygomatic, implant, awareness, maxilla, atrophic,

INTRODUCTION:

Placement of dental implants in the posterior maxilla is often jeopardized by the size and extension of the sinus cavities and inadequate amounts of bone [1]. Surgical procedures were therefore developed to elevate the floor of the sinus and fill the created cavity with bone or a substitute material, in order to subsequently install dental implants [2]. Zygomatic implant differ from conventional dental implants in that they anchor into the zygomatic bone. The zygoma bone can be compared to a pyramid, offering an interesting anatomy for the insertion of implants.

Zygomatic implants are used in severely atrophic posterior maxilla and also in cases with pneumatization of the maxillary sinus, avoiding the need for bone grafts in the posterior area. Malevez et al in his study described zygomatic implants as self-tapping screws with well-defined machined surface which are available in 8 different length ranging from 30-52.5mm. Zygomatic implant has a unique angulated head which is about 45° to compensate for the angulation between the zygoma and the maxilla [3,4].

Many alternative procedures have then been investigated to treat atrophic maxilla by using composite grafts [5], Le Fort 1 osteotomy [6], iliac crest grafts [7,8] and maxillary sinus grafts [9]. Recently a new procedure called distraction osteogenesis has been done for bone augmentation. However, no publication regarding bone lengthening in the severely atrophic maxilla could be found related to this new procedure.

Hence this study aims to determine the level of awareness and knowledge about zygomatic implant in severely atrophic maxilla among dental professionals.

MATERIALS AND METHODS:

This study was conducted among dental professionals from various universities. The study was conducted on a sample size of 100 dental professionals. A simple open ended questionnaire with 15 questions was given to the dentists from various departments to assess their awareness and knowledge on zygomatic implant. The questionnaire also consisted of basic demographic details of the dentist.

Questions:

1. Are you aware of severely atrophic mandible?
a) yes b) no
2. Are you aware of severely atrophic maxilla?
a) yes b) no
3. Are you aware of Bedrossian classification for severely atrophic maxilla?
a) yes b)no
4. Are you aware of severe pneumatization of maxilla?
a) yes b) no

5. What treatment option do you prefer for severely atrophic maxilla?
 - a) removable denture
 - b) direct/indirect sinus lift
 - c) pterygoid implant
 - d) zygomatic implant
6. Are you aware of zygomatic implant?
 - a) yes
 - b) no
7. Are you aware of pterygoid implant?
 - a) yes
 - b) no
8. Are you aware of short broad implant?
 - a) yes
 - b) no
9. What can be the length of zygomatic implant?
 - a) ranges from 10-20mm
 - b) ranges from 5-10mm
 - c) ranges from 30-52mm
 - d) ranges from 60-70mm
10. How zygomatic implants are placed?
 - a) through the alveolar crest and maxillary sinus involving the zygomatic bone for anchorage
 - b) through the alveolar crest and maxillary sinus involving the pterygoid bone for anchorage
11. How many zygomatic implants do you think can be placed in severely resorbed maxilla?
 - a) 1
 - b) 2
 - c) 3
 - d) 4
12. What is the diameter of the implant that engages the maxillary alveolar process?
 - a) 4.5mm
 - b) 4mm
 - c) 4.2mm
 - d) 4.8mm
13. Do you think zygomatic implants requires grafting and sinus lift procedure?
 - a) yes
 - b) no
14. What is the insertion torque for zygomatic implant?
 - a) 45Ncm
 - b) 40Ncm
 - c) 42Ncm
 - d) 43Ncm
15. What is the most common complication associated with zygomatic implants?
 - a) sinusitis
 - b) infraorbital nerve paresthesia
 - c) orosinus fistula
 - d) perforation of the orbit

RESULTS:

From the obtained result, most of the dental practitioners, 72.1% of them were aware about the severely atrophic maxilla whereas 28% of the practitioners were not aware about the atrophic maxilla. Around 72% of them were aware about the existence of zygomatic implant as an alternative for replacing teeth. While 28% of the practitioners were not aware about the zygomatic implant. Majority of the clinician were not aware of Bedrossian classification. Only 30% dental practitioners were aware about the Bedrossian classification for severely atrophic maxilla. The various treatment options for severely atrophic maxilla are zygomatic implant, pterygoid implant, direct/ indirect sinus lift and removable denture. 67.4% dental practitioners responded zygomatic implant as treatment option for severely atrophic maxilla followed by 20.9% advised removable denture, 9.5% advised pterygoid implant and 2.2% advised direct or indirect sinus lift. Around 41.9% of them stated that they were not aware of the length of zygomatic implants. While 18.6% of them responded the length ranges from 60-70mm followed by 14% to 10-20mm, 16.3% to 30-52mm and 9.2% to 5-10mm. Most of them, which are 44.2% of the dental practitioners were responded that two zygomatic implants are needed for severely resorbed maxilla while the others responded that four zygomatic implants are needed for completely edentulous and severely resorbed maxilla. Most of them responded as don't know regarding the insertion torque for zygomatic implants. While 16.3% responded that 45Ncm and 40Ncm is the insertion torque needed for zygomatic implant while 11.6% of them responded that 42Ncm is the insertion torque for zygomatic implants. 51% of them are not aware of the diameter of implant that engages the maxillary alveolar process. 24% responded that 4.2mm diameter of zygomatic implant that engages the maxillary alveolar process while 10% of them responded the diameter should be 4.5mm and 5.3mm and 5% responded it should be 4.8 mm diameter of zygomatic implant that engages the maxillary alveolar process. Most of the dental practitioners responded that sinusitis is the most common complication followed by perforation of the orbit 23.3%, infraorbital nerve paresthesia 18.6% and orosinus fistula 11.6%.

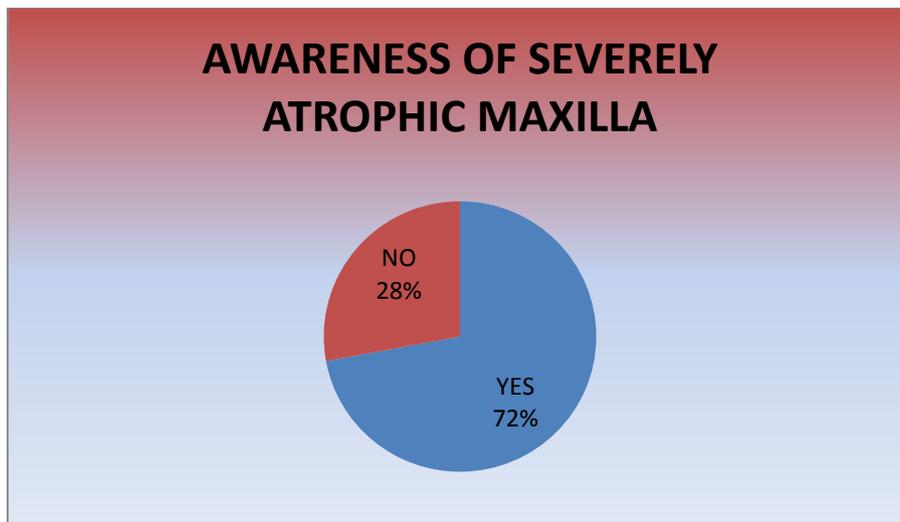


Figure 1: Describing the awareness of severely atrophic maxilla among dental practitioners.

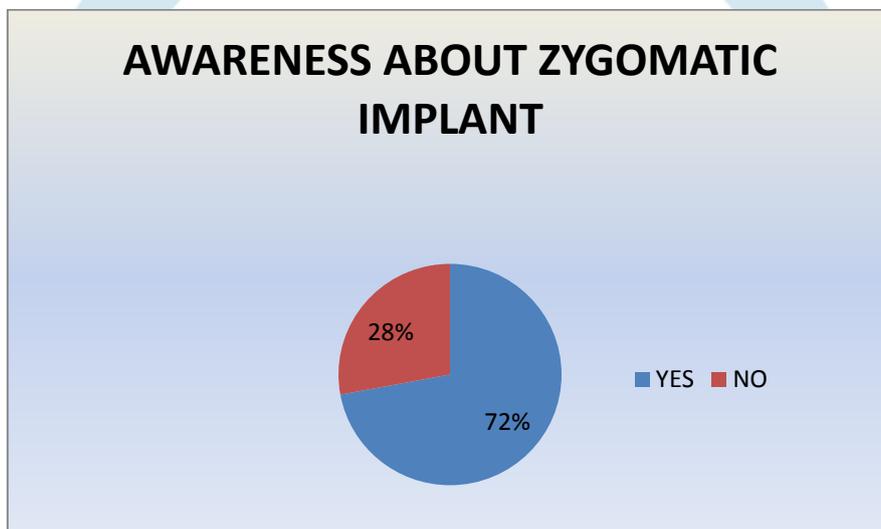


Figure 2: Describing the Awareness of zygomatic implant among dental practitioners.

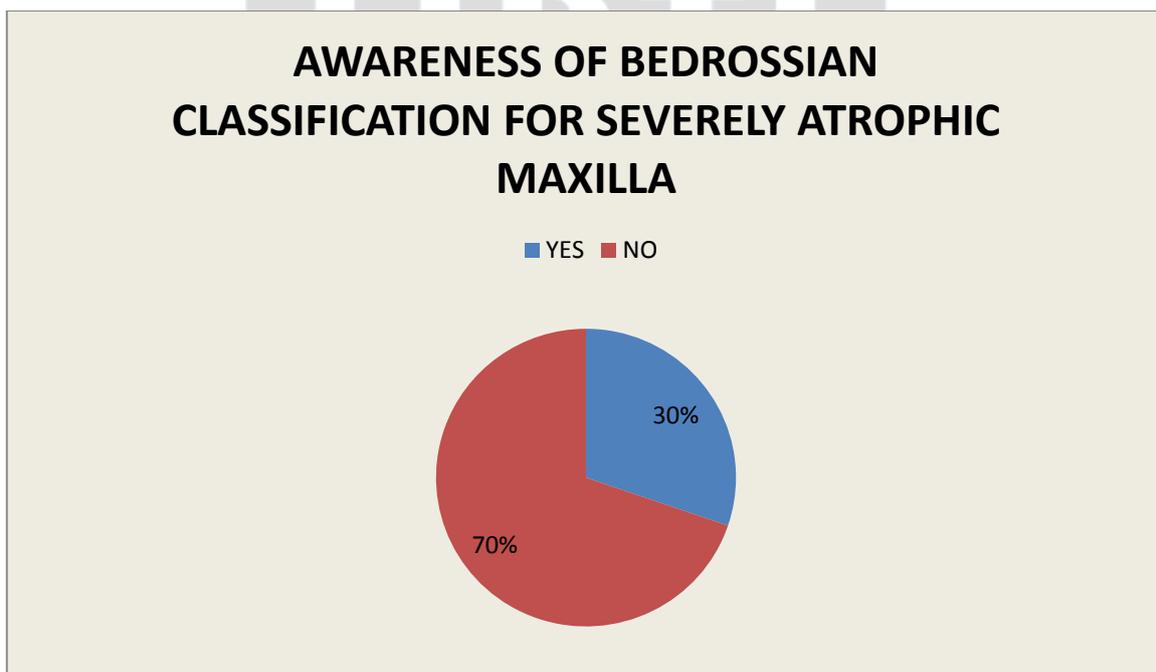


Figure 3: Shows the Awareness of Bedrossian classification for severely atrophic maxilla

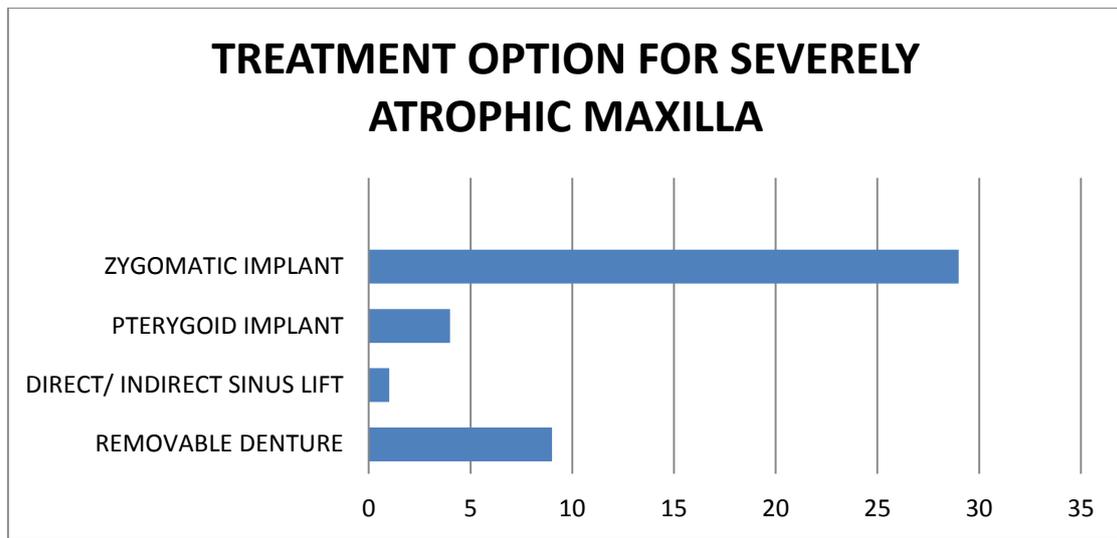


Figure 4: Shows the Treatment option for severely atrophic maxilla

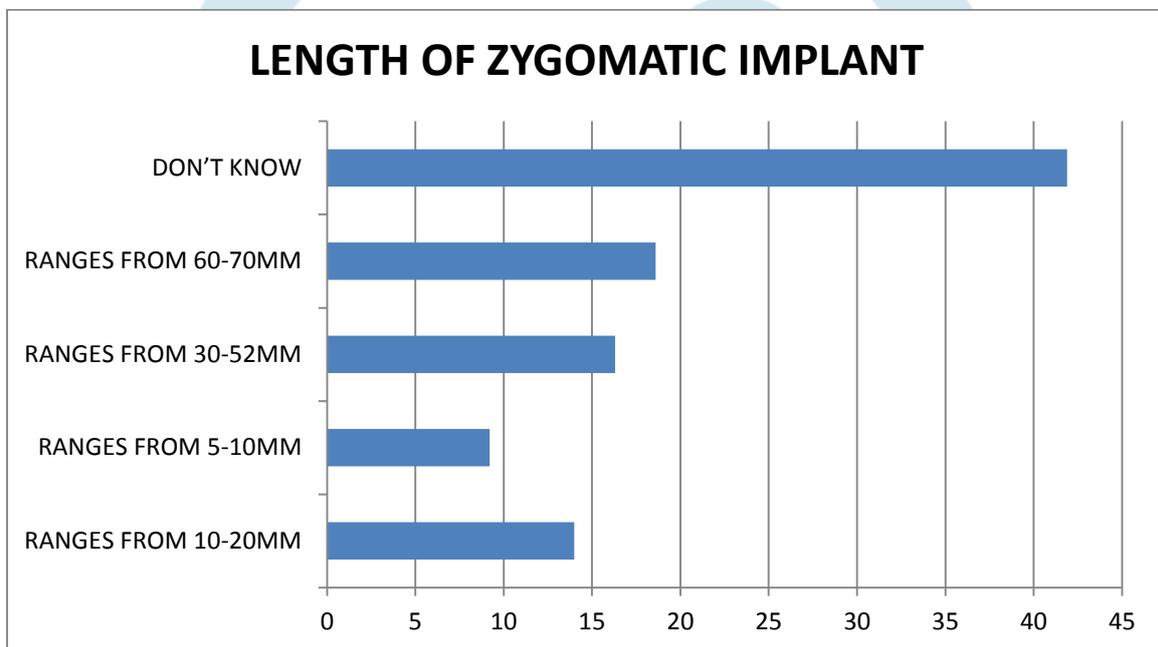


Figure 5: Represents the Awareness of length of zygomatic implant.

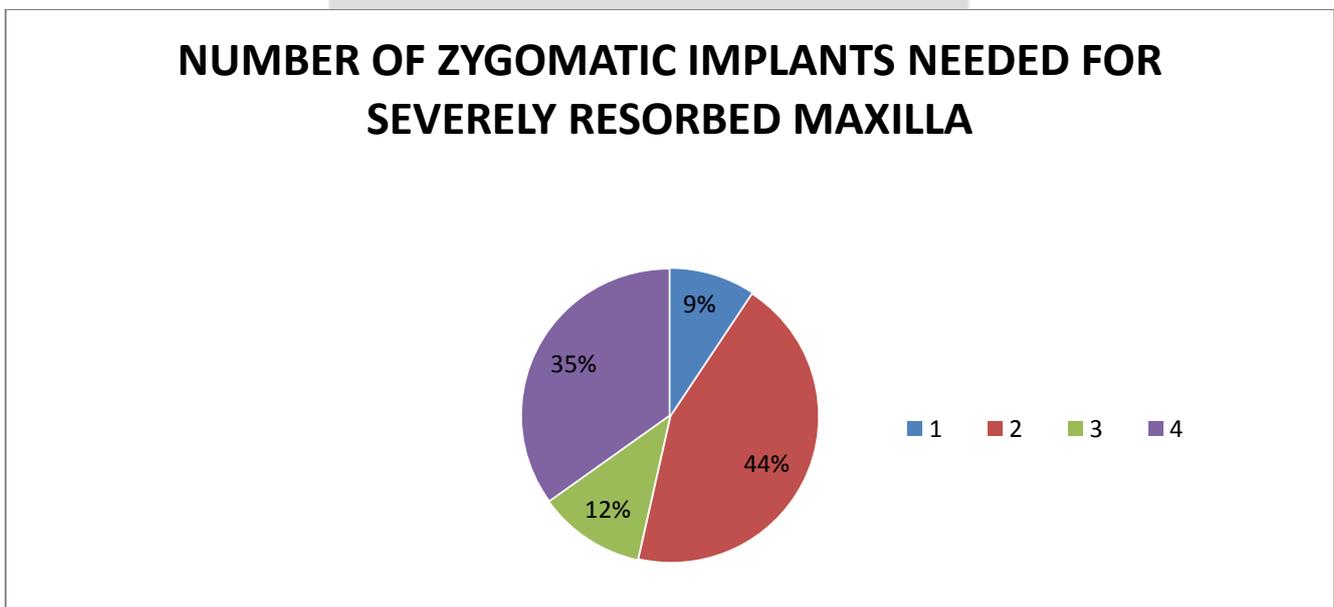


Figure 6: Describing the Awareness about number of zygomatic implants needed for severely resorbed maxilla

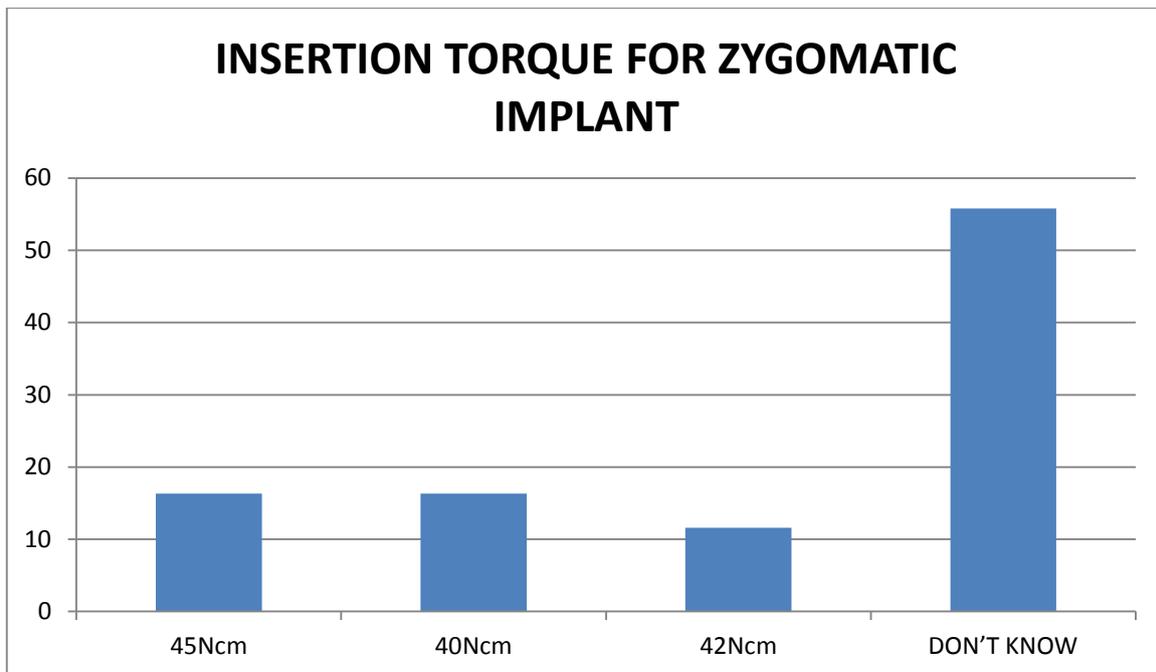


Figure 7: Represents the Awareness about insertion torque for zygomatic implant

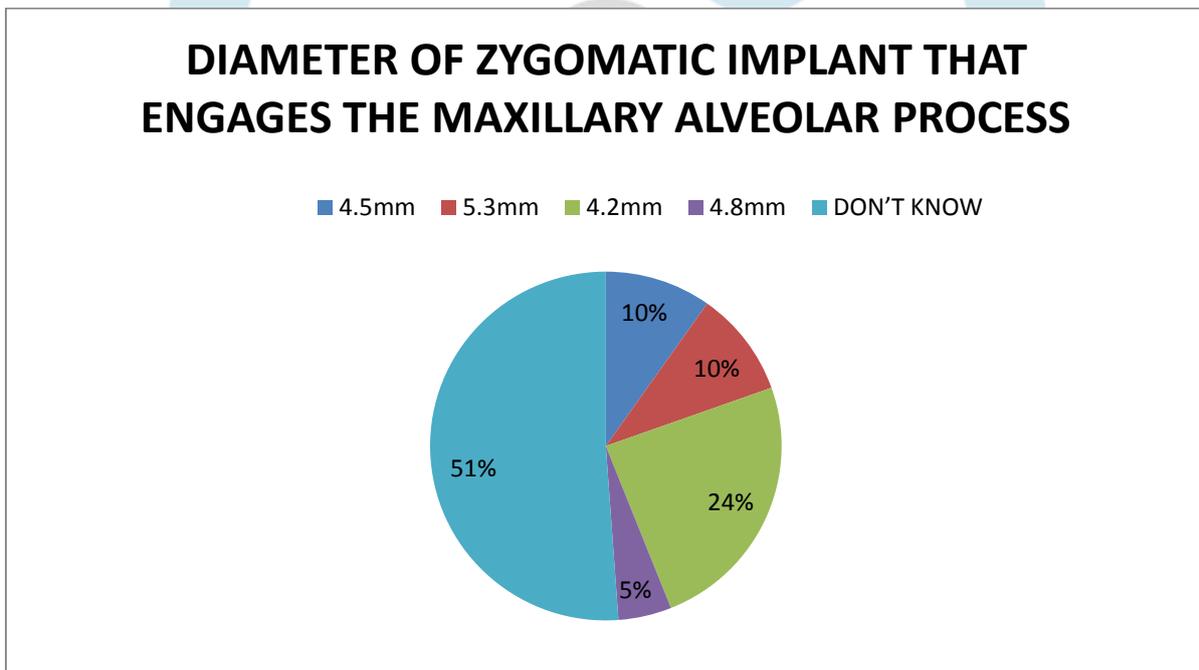


Figure 8: Shows the Awareness about the diameter of the implant that engages the maxillary alveolar process

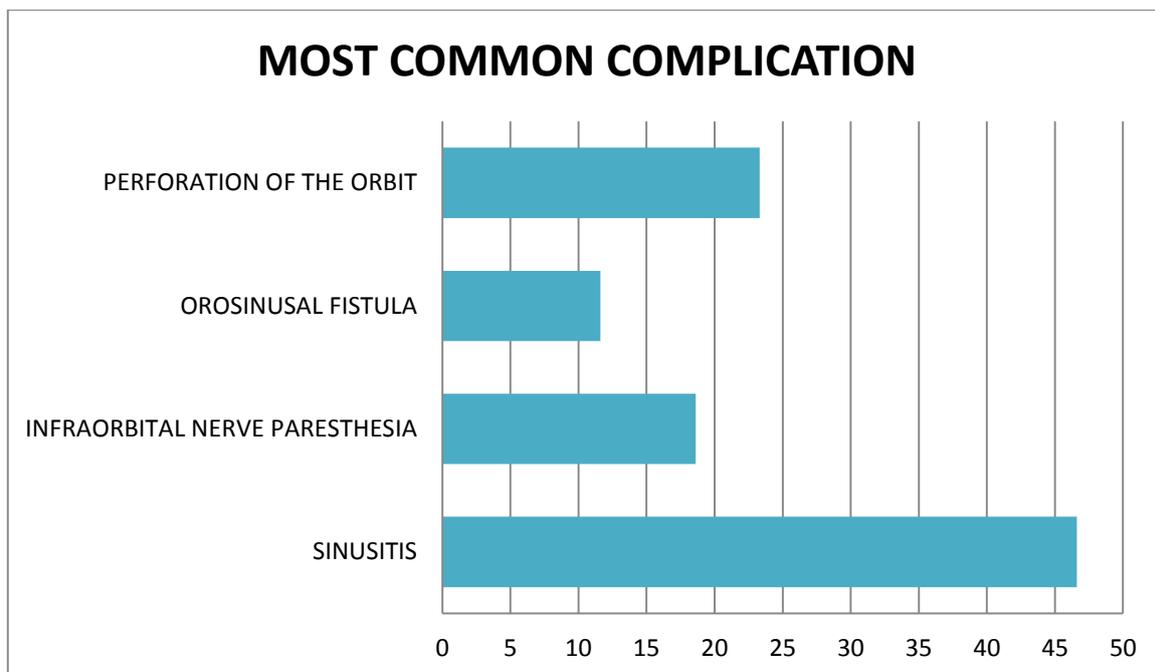


Figure 9: Shows the Awareness about the most common complications

DISCUSSION:

This survey was an effort to access the awareness of zygomatic implants among dental professionals. The outcome of this study provides a valuable and encouraging insight into the awareness of zygomatic implants. It also stresses about the need to improve their knowledge, awareness regarding zygomatic implants.

Zygomatic implants provide an alternative to conventional implants, which may require bone grafting in the atrophic posterior maxilla. They have shown high success rates, comparing favourably to conventional implants^[10]. Protocols utilising an extra sinus or extra maxillary implant position have shown similar success rates to the original intra sinus protocol^[11, 12]. In our study, majority of the dental practitioners were aware about the surgical techniques for placing zygomatic implants.

Parel et al made a retrospective study of 65 zygomatic implants placed in 27 patients. After a 6 year old follow up, no implants were lost. A series of 22 patients was presented by Bedrossian et al in which 44 zygomatic implants and 80 premaxillary implants were located. After 34 months follow up there was 100% success for the zygomatic and 91.25% for the conventional implants.

In a retrospective study conducted by Malavez et al, they evaluated the survival index of 103 zygomatic implants inserted in 55 maxilla after a 6-48 month follow up of prosthetic load, no zygomatic was considered fibrously encapsulated and functionality was satisfactory. Hirsch et al in a multicentre study of 124 zygomatic Implants, found a survival rate of 97.9% at one year of follow up, 80% of patients were satisfied with the treatment and the condition of the periimplant mucosa was normal in 60% of the locations; when plaque was present the palatal surface was the most affected.

Currently, there are no clear criteria to describe possible complications derived from the path of zygomatic implants. In this study, majority of the dental professionals responded that sinusitis is the most common complication associated with zygomatic implants. Bektor et al^[13] studied 16 patients over an average period of 46 months. Out of 31 zygomatic implants placed, 3 were failed due to recurrent sinusitis and poor oral hygiene.

CONCLUSION:

The zygomatic implant is an alternative procedure to bone augmentation, maxillary sinus lift and to bone grafts in patients with posterior atrophic maxilla. The zygomatic implant technique should be regarded as a major surgical procedure and proper training is needed. Hence, dental professionals need more awareness and knowledge on zygomatic implants.

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