

## A STUDY OF PATIENT WILLINGNESS FOR BONE AUGMENTATION ALONG WITH DENTAL IMPLANT PLACEMENT: QUESTIONNAIRE-BASED STUDY

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### ABSTRACT

The most recent and effective practice in the treatment of complete or partially edentulous patients is to use of dental implants, Surgical planning and implant long-term stability are related to both the quality and the quantity of the available bone tissue. Occasionally, alveolar ridge may not have the bone support to host a dental implant due to different reasons, including periodontal disease, post-traumatic sequelae, or a tumour resection. Changes in the alveolar ridge after extraction often compromise on achieving best possible implant stability and placement of implants in the right prosthodontic position. Such situations demand augmentation of the residual ridge to achieve successful implant placement and long-term survival. Although the available literature speaks of an overabundance of techniques and agents for ridge augmentation, there is a relative paucity of quality evidence to guide the selection of suitable techniques and material. Further taking the consent of the patient to go for repetitive surgeries becomes difficult due to which placement of dental implant is often denied. These present clinical surveys were carried out and discuss to evaluate the problems, misconceptions and views of patient towards bone augmentation surgery.

**KEYWORDS:** Ridge Augmentation, Socket Grafting, Bone Grafts, Socket preservation

Recently the use of dental implants has now become an established procedure for the treatment of partially edentulous patients. A steadily increasing number of partially edentulous patients are being rehabilitated with oral implants (Soni et. al., 2017). Extraction, periodontitis, or trauma can cause a reduction on the alveolar ridge. This could result in an insufficient alveolar bone width and height. Bone augmentation is now routinely required in these cases (Keestra et. al., 2016) Decision making in implant dentistry involves patients' preferences and values, clinicians' heuristics and biases, diagnostic and therapeutic uncertainties, as well as cost considerations (Flemmig and Beikler, 2009). The decision towards implant therapy – an elective procedure in most patient cases – depends on patients' knowledge and informed consent (Allen et. al., 1999). Patient participation and co-determination as well as realistic patient expectations have been associated with improved subjective treatment outcomes and health professionals are increasingly encouraged to involve their patients in treatment decisions (Allen et. al., 2001).

Patient's attitude towards implant therapy may be influenced by their apprehension of pain or postoperative morbidity (Say and Thomson, 2003) While fear is considered a major barrier to seeking dental implants, the need for supplementary bone grafting procedures may cause additional anxiety (Nkenke et. al., 2007 & Rustemeyer and Bremerich, 2007) This may cause patient to avoid dental implant therapy. Further change of doctors for second opinion may also confuse patient.

The above problems in the patient perspective make it very important for us to know his view and consent for additional bone augmentation surgery. Therefore, the present clinical survey was carried out to evaluate the problems, misconceptions and views of patient towards bone augmentation surgery.

### MATERIALS AND METHODS

In the present survey, all the patients for dental implant placement reporting to the OPD of Faculty of dental sciences, IMS, BHU were reviewed. Twenty one patients who want dental implant to be placed were selected. Implant placement procedure was explained to the patient. All the patients were provided with the questionnaire (Table-1).

Enough time was given to the patient to read and understand the questionnaire. All the bone augmentation procedures, their indications, advantages and disadvantages were explained to the patient in detail.

### RESULTS

The completed response to the questionnaire was collected (Table-2). Patient opting for yes was marked in the table as 1, no was marked as 2 respectively. The reason for loss of tooth was also recorded. Patient losing tooth due to periodontal reasons were marked as A, due to caries as B, due to congenital reasons as C, due to trauma as D and other reasons as O.

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After recording the responses, data was analyzed. Percentage of responses was recorded (Table-3a,b,c). Table 3a showed that most common reason for losing the tooth was periodontal followed by caries. Table 3b showed that most patient agreed for the dental implant treatment if the procedure was explained properly.

Percentage of positive responses was also collected. Table 3c clearly depicted that most patient were afraid of dental implant placement when additional bone augmentation surgery was required. In spite of that if patient were explained nicely about the positive outcome of the treatment due to additional surgery they agreed. Sinus lift procedure and autograft from mandibular symphysis region was also given positive response. Further cost did not matter to most of patient coming for dental implant procedure.

**Table 1: Questionnaire**

Q.1	What was the cause of loss of that tooth?
Q.2	Would you like to go for Dental implant placement or other alternatives?
Q.3	Would you like to go for dental implant placement if additional bone augmentation surgery can improve the outcome?
Q.4	Is fear and anxiety the major reason for avoiding implant placement surgery?
Q.5	Would you like to go for dental implant placement if it cannot be done without bone augmentation?
Q.6	Would you prefer synthetic bone graft over autogenous bone graft to avoid bone graft surgery?
Q.7	Would you prefer intraoral bone harvesting from the chin (mandibular symphysis)?
Q.8	Would you prefer intraoral bone harvesting from the posterior mandible (retromolar region)?
Q.9	Would you accept to undergo bone harvesting from the hip (iliac crest)?
Q.10	Would accept to undergo sinus lift process for placement of dental implant in upper posterior region?
Q.11	Would you accept additional costs for bone augmentation procedure?

**Table 2: Showing the response of the questions**

1.	B	IMPLANT	1	1	2	1	2	1	2	2	1
2.	B	IMPLANT	1	1	1	2	1	1	2	1	1
3.	A	IMPLANT	1	1	2	1	1	1	1	2	1
4.	A	IMPLANT	1	1	1	2	1	2	1	2	1
5.	A	IMPLANT	1	1	2	1	2	2	1	2	1
6.	D	IMPLANT	1	2	2	2	1	2	1	1	1
7.	A	IMPLANT	1	2	2	2	2	1	1	1	2
8.	A	IMPLANT	2	1	2	1	1	2	1	1	1
9.	A	IMPLANT	2	1	2	1	1	2	1	1	1
10.	D	IMPLANT	2	1	2	1	1	2	2	2	1
11.	B	OTHERS	2	1	2	2	1	1	1	1	1
12.	C	IMPLANT	1	1	2	2	1	1	1	1	1
13.	B	IMPLANT	1	1	2	1	2	1	1	1	1
14.	A	IMPLANT	2	2	2	1	2	1	1	1	1
15.	A	IMPLANT	1	1	2	2	1	2	2	1	1
16.	C	IMPLANT	1	1	1	1	1	1	2	1	2
17.	O	IMPLANT	1	1	2	2	1	1	2	1	2
18.	A	IMPLANT	1	2	1	2	1	1	2	1	1
19.	B	IMPLANT	1	1	1	2	1	2	2	1	2
20.	B	IMPLANT	1	1	1	2	1	1	2	1	2

1=YES; 2=NO, A=PERIODONTAL, B=CARIES C=CONGENITAL, D=TRAUMA, O=OTHERS

**Table 3a: Cause of loss of tooth**

A	45%
B	30%
C	10%
D	10%
E	5%

**Table 3b: Willingness to go for dental implant treatment**

Implant	95%
Others	5%

**Table 3c: Percentage of positive responses**

Would you like to go if additional bone augmentation surgery can improve the outcome	75%
Is fear and anxiety the major reason for avoiding implant placement surgery	80%
Would you like proceed if it cannot be done without bone augmentation?	30%
Would you prefer synthetic bone graft over autogenous bone graft to avoid bone graft surgery	45%
Would you prefer intraoral bone harvesting from the chin (mandibular symphysis)	75%
Would you prefer intraoral bone harvesting from the posterior mandible (retromolar region)	60%
Would you accept to undergo bone harvesting from the hip (iliac crest)	55%
Would accept to undergo sinus lift process for placement of dental implant in upper posterior region	75%
Would you accept additional costs for bone augmentation procedure?	75%

## DISCUSSION

The present questionnaire-based survey yielded treatment predictability as one of the major concern of patients seeking for dental implant therapy. Although most patient feared from dental implant placement procedure with additional bone augmentation surgeries but if educated properly it was observed patient were keen for dental implant placement. The present study also revealed most of the tooth loss was due to periodontal reasons. Therefore maintaining hygiene and increasing the awareness can drastically decrease the need of dental implant placement. Avoidance of removable dentures was also rated high priority, while interviewees considered time and cost efficiency as well as avoidance of bone grafting less important. It seems necessary to gain insights into patient preferences and expectation. It will give a greater

satisfaction to the patient if we proceed according to patient need, expectation and acceptance of dental implant therapy.

## CONCLUSION

Percentage of positive responses clearly indicated that fear can be a major reason in avoiding dental implant placement procedure requiring additional bone augmentation procedures. Most of the patients agreed for dental implant placement procedure if explained about the positive outcome of the procedure. Additionally cost didn't matter to majority of the patient who came for dental implant treatment.

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