

Incidence Of Usage Of Block Graft In Implant Surgery

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ABSTRACT:

AIM:

The aim of this study is to evaluate the incidence of usage of block graft in implant surgery.

INTRODUCTION:

Implant surgery have become popular with the advancement of many surgical techniques such as sinus lifting guided bone regeneration and block bone grafting. Patient information including sex, age, sites, bone grafts and the types of bone were investigated. The incidence of bone grafting was very necessary in implant surgery to augment defects and more than half of the sextant needed bone grafts for implant installation. However, frequency of bone grafting during the implant surgery was unknown. Different sites of bone grafting are carried out in implant surgery. A bone graft from the symphyseal region of the mandible are used to augment the ridge 4 months prior to the implant insertion.

MATERIALS AND METHODS:

The data was collected from the outpatient department Dias of Saveetha dental college and hospitals. The details of outpatient fulfilled all the criteria required for the study.

RESULTS AND DISCUSSION:

The data was imported to SPSS version 23 and the results were obtained using Chi-square test. In this study, it was found that the incidence of usage of bone graft in implant surgery was high with males populations under autogenous bone grafting criteria when compared with other sites of grafting.

CONCLUSION:

From this study, we conclude that most of the block graft was grafted from the Ramus of the mandible rather than the symphyseal region and was augmented in the right posterior aspect. This study also concludes that the incidence of block graft was higher in male population over female population with 45-49 years of age groups.

KEYWORDS: Block grafts, augmentation, novel method

INTRODUCTION:

A dental implant is an alternative that has aesthetically achieved high success rates and gained popularity among the patients in recent years. Tooth loss is a very common problem faced by any individual in their life due to various congenital or during the lifetime(1). Therefore, the use of dental implants came into treatment performing many roles in dentistry. Although research on these dental implant designs, materials and techniques has increased to a greater extent in the past few years and is expected to expand at its best in the future(2). (3) Still works are going on based on the use of biomaterial, implant design, surface modification and functionalization of surfaces to improve the long term outcomes of the treatment(4).

Dental Implant designs broadly fall under four major criteria that are developed and used in clinical dentistry, including a subperiosteal form, ramus form, blade form and an endosseous form(5). Endosseous types of implants are mostly used in dentistry today(6). This requires typically placing a screw- shape Inserted into either the maxilla or the mandible, that serves as a tool to replace the missing tooth in position. A wide variety of different sizes and shapes of implants have evolved over the course of time to fit into the current surgical concepts and to improve patient treatment. Even a small change in the shape, length and width of the implants can influence the success rate to a higher level(7).

A dental bone graft is a procedure performed to increase the amount of bone in a part of the jaw where bone has been lost or where additional bone support is needed(8). Bone grafting is done and surgically fused to

the existing bone in the jaw either to the maxilla or mandible site. Autografts are usually considered as the “gold standard”, as it is done on our bone and increases bone support in the jaw and promotes faster healing and new bone formation(9).

Various block grafts show different usage in implant dentistry(10). A block bone grafting is typically taken from the back of the jawbone, near the wisdom tooth. Block bone grafting is usually done in cases where there is significant bone loss towards the front of the jaw(11). Similarly a sinus lift grafting is done when a bone loss occurs near the upper molars, allowing the sinus to move down and thereby doing the bone graft to restore the upper jaw stability, while the sinuses are moved back in position (12). Socket bone graft is another such grafting that is done at the same time when a tooth is extracted in a person to avoid any bone loss.

Block grafts do have its side effects in implant dentistry which include most commonly pain and swelling(13). Minor bleeding, difficulty in chewing and speaking for the first few days can also be other normal side effects and bone graft rejection can also happen along with other side effects like blood clots, nerve damage(14). Infections can also be commonly seen so proper antibiotics medication should be carried out in a patient.

The aim of this study is to evaluate the incidence of usage of block grafts in implant dentistry. Implant surgery have become popular with the advancement of many surgical techniques such as sinus lifting guided bone regeneration and block bone grafting. Patient information including sex, age, sites, bone grafts and the types of bone were investigated. The incidence of block grafting was very necessary in implant surgery to augment defects and more than half of the sextant needed block grafts for implant installation. However, frequency of block grafting during the implant surgery was unknown. Different sites of block grafting are carried out in implant surgery. A block graft from the symphyseal and the ramus region of the mandible are used to augment the ridge 4 months prior to the implant insertion. Our team has extensive knowledge and research experience that has translate into high quality publications(15),(16),(17),(18),(19–28)(29),(30–32).(33,34). The aim of this study is to evaluate the incidence of usage of block graft in implant surgery

MATERIALS AND METHODS:

The data was collected from Saveetha Dental College and hospitals. The details of the patient collected, out of which the patient fulfilled all the inclusion and exclusion criteria were included in the study. Ethical clearance for this study was obtained from the institutional review board. The data included a varied population predominantly males. The internal validity included diagnosed cases as per criteria, chief complaint, treatment and clinical findings. The data collected was tabulated under the following parameters: age, gender, site and treatment. The data analysis was performed along SPSS software of newer version 23. The Chi Square test and Pearson correlation was done. The P value less than 0.005 considered statistically significant.

RESULTS:

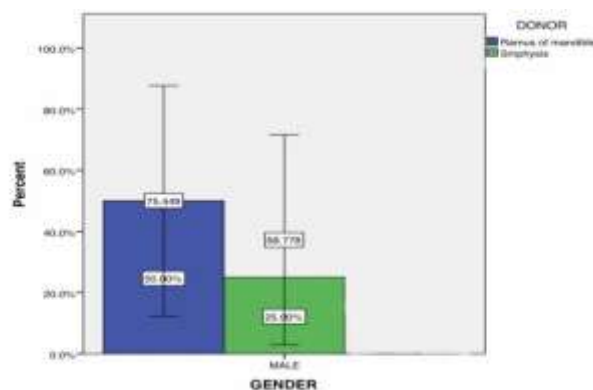


Figure 1: The above bar graph shows the correlation between gender and the donor of block grafting in implant surgery for which male population showed higher incidence in block grafting when compared with the female population. The p value for this graph showed no significant difference (p=0.062).

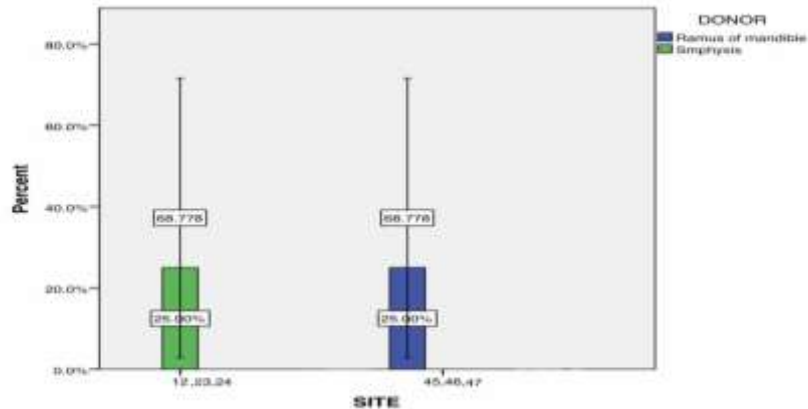


Figure 2: The above graph shows the correlation between the site for block grafting and the donor from where the bone is grafted for implant surgery ,for which both the donor had similar results. The p value for this graph showed no significant difference (p-0.263).

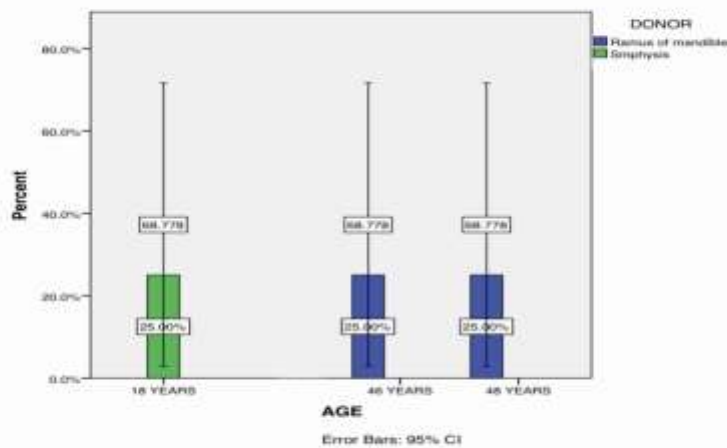


Figure 3: The above graph shows the correlation between the age for block grafting and the donor from where the block is grafted for implant surgery ,for which the age group between 45-49 years showed most of the block grafts done.The p value for this graph showed no significant difference (p-0.263).

DISCUSSION:

According to previous articles, sinus graft procedures have rapidly increased . A large percentage group of articles consist of histological studies and case reports with a low level of evidence. Many present review isolated studies showed no difference in overall implant survival rates with regard to level of evidence. Various block grafts show different usage in implant dentistry. A block bone grafting is typically harvested from the ramus or symphyseal region of the mandible and are augmented in the lingual and buccal aspect of the recipient site. (35). Block bone grafting is usually done in cases where there is significant bone loss towards the symphyseal region.. A different surgical procedure constitutes a further source of variability. According to the inception, the sinus grafting technique has relied mostly on autogenous bone as the graft material.

The incidence of Autogenous bone is considered as the gold standard for intra oral bone grafting because of its osteoinductive and osteoconductive properties (35,36). Shortcomings can include requirement for hospitalisation for an extra oral harvesting procedures or even the need for a second intra oral site and increased morbidity. Implant survival rate can be determined on the graft material used or the surface characteristics of the implant placed in these grafts. More research on better dental implant materials, design parameters, surface treatment technologies and analysis techniques is still required to improve the outcomes.

CONCLUSION:

From this study, we conclude that most of the block graft was grafted from the Ramus of the mandible rather than the symphyseal region and was augmented in the right posterior aspect. This study also concludes that the incidence of block graft was higher in male population over female population with 45-49 years of age groups. Therefore, incidence of block grafting can serve as gold standard treatment in implant dentistry.

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CONFLICT OF INTEREST : The authors have none to declare.

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