

Outcomes of Implants Placed in Grafted Maxillary Sinuses: A Retrospective study

Neshatafarin Manouchehri, Alejandro Baez Alieh Shafagh, Theofilous Koutouzis, Saynur Vardar, Department Periodontics, College of Dental Medicine, Nova Southeastern University, Fort Lauderdale, Florida.



BACKGROUND & INTRODUCTION

This retrospective study evaluates and compares the clinical outcomes of implants placed after sinus augmentation procedures performed using two techniques—lateral wall and crestal approaches—at Nova Southeastern University's Post Graduate Periodontology Clinic. The study specifically focuses on surgical complications, implant success rates, and the factors influencing the long-term implant success.



METHOD & MATERIALS

A review of patient records from 2012 to 2022 was conducted. All procedures were performed by residents at the Periodontics Program. Data collected included age, gender, smoking status, ASA classification, and the incidence of surgical complications. The study utilized both parametric and non-parametric statistical analyses to evaluate the data, including Fisher's exact test and multiple regression analysis, to compare complication rates and implant outcomes between the two surgical techniques. Biological complications and implant survival rates were and compared between the two techniques.

Inclusion criteria

- ❖ 131 patients.
- ❖ 194 Implants

- Ages of 37 to 90 years old
- At least 1 year follow up after sinus augmentation procedure
- Had lateral wall sinus augmentation or crestal augmentation.

Exclusion criteria

- Lack of follow up appointments

Biological Complications

- Implant loss
- Treated mucogingival defects
- Peri implant mucositis
- Peri-implantitis

Clinical Parameters

- Age
- Gender
- Smoking status at the time of treatment
- ASA classification
- Penicillin allergy
- Periodontal diagnosis at the time of treatment
- Number and type of surgical complications

RESULT



- No significant differences were observed in demographic variables such as age, gender, and smoking status ($p < 0.05$)
- The lateral wall approach demonstrated a significantly higher rate of complications (36.4%) compared to the crestal approach (8.2%) ($p < 0.001$).
- Schneiderian membrane perforation was the most common complication, occurring in 29.1% of the lateral wall cases and 14.5% of crestal cases ($p < 0.001$).
- Implant survival rates remained similar between the groups, with success rates of 83.88% for the lateral wall approach and 86.37% for the crestal approach ($p = 0.645$).

Overall Sinus Complication Frequencies

			Sinus Complications		Total
			No	Yes	
SINUS GROUP	Lateral	Count	35	20	55
		% within Lateral	63.6%	36.4%*	100.0%
	Crestal	Count	101	9	110
		% within Crestal	91.8%	8.2%*	100.0%
Total		Count	136	29	165
		% of Total	82.4%	17.6%	100.0%

Implant Survival

		Survive	Explant	Total
SINUS	Lateral	52	10	62
	Crestal	114	18	132
Total		166	28	194

- Chi-square test (p-value of < 0.05 considered statistically significant)



DISCUSSION

- **Higher Complication Rate with Lateral Wall Approach:** More Schneiderian membrane perforations.
- **Similar Implant Success & Survival Rates:** Despite complications, long-term outcomes were comparable.
- **Patient Factors Not Significant:** Age, gender, smoking, and ASA classification did not impact outcomes.
- **Evidence-Based Decision Making:** Lateral wall technique poses more challenges but does not compromise implant longevity.



CONCLUSION

- Higher incidence of surgical complications associated with the lateral wall sinus lift technique
- long-term implant survival was not significantly affected when compared to the crestal approach.
- Both sinus augmentation techniques are viable options for implant placement in grafted sinuses,
- The choice of technique should be based on individual clinical and anatomical considerations.
- The lateral wall approach, while more prone to immediate surgical complications, does not compromise implant survival in the long term.



REFERENCES

