

Indirect Sinus Lift in Immediate Placement of Implant - A Case Report

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DOI: <http://dx.doi.org/10.13005/bpj/733>

(Received: July 25, 2015; accepted: September 10, 2015)

ABSTRACT

The posterior maxilla is always considered as the difficult site for the placement of implant than the mandible due to the presence of various anatomical landmarks such as maxillary sinus, these anatomical structures often make every dental implant surgeon's a challenge task in placement of endosteal implants in the chronic atrophic maxilla and difficult in osteointegration and further functional and aesthetic implant supported prosthesis. Various techniques in sinus lifting procedure enable the additional anchorage and stability in implants placed support in maxillary segments in with atrophic ridges and pneumatic sinuses.

Key words: Atrophic maxilla, sinus floor, crestal approach, osteotome, endosseous implants.

INTRODUCTION

Implant placement in compromised posterior maxilla is more demanding and essential with available bone quality and quantity for the functional chewing and speech¹⁻⁵. The presence of maxillary sinus floor above the maxillary alveolar bone after the extraction limits the implant placement and as the implant perforates the sinus lining and complicates the successful osteointegration of the implant. So various treatment and approaches are available for elevating the sinus floor and lining to achieve excess height and primary stability for the placement of root form implants. The widely performed two techniques for sinus floor elevation are lateral window approaches⁶⁻⁸ and to increase the amount of bone in the atrophic maxilla the sinus lift

procedure and subantral augmentation procedure are performed and developed at the mid 1970's⁷ crestal bone approaches⁹⁻¹⁴. The most commonly used technique for maxillary sinus floor lifting through a lateral window which was first presented by Tatum in 1977, and was first published by Boyne and James 1980¹⁴⁻¹⁶. This bone augmentation is considered as the time-consuming, invasive and expensive procedure when compared to the minimally invasive methods. Summers in 1994 introduced the a less aggressive procedure for sinus floor elevation with immediate placement of implant known as the osteotomy sinus floor elevation (OSFE)¹⁷. Crestal approach was very widely performed rather than lateral window approach followed by osteotome for elevation of the membrane and floor of the sinus and immediate placement of the implant. At the same time graft may or may not be placed

This procedure is less invasive compared to the lateral window approach, less time consuming, minimal trauma to the underlying structures and post operative complications is less and prognosis of the treatment is similar to the usual conventional technique¹⁸

MATERIALS AND METHODS

Our study was performed in between the age group of 25 to 50 years irrespective of genders having poor prognosis of maxillary posterior teeth including root stumps and that are opted for extraction. Patients with chronic sinusitis and smokers, long standing chronic nasal obstruction, pregnant patients and psychologically ill patients are excluded from the study.

A preoperative evaluation of bone height and bone width are measured clinically and with the help of intra oral radiograph.

- 1) Antibiotic prophylaxis was initiated a day before surgery
- 2) Under local anaesthesia tooth was extracted, and the surgical curettage done and socket irrigated with betadine solution.
- 3) Drill upto 1 mm away from the floor was

continued with 1.1, 2.8, 3.3 drills were used till the final preparation. Then the expansion osteotomes are used

- 4) Light tapping with a mallet carefully collapse the sinus floor into the sinus cavity elevating the Schneiderian membrane.
- 5) Elevation of the sinus membrane performed using the 3# osteotome, that was used previously to force the graft head of its tip to achieve fracture the sinus floor up fracture.
- 6) Implant of dimension of (13 x 4.2 mm) was placed. Primary stability was assessed by finger pressure the implant showed primary stability. Stability can also be increased by the threads or by placing the implant deeper.
- 7) Abutment was positioned over the implant and the occlusal height was adjusted, implant was loaded with temporary restoration.
- 8) Post operatively, patient was advised to rinse the mouth with twice a day with 0.12% of chlorhexidine solution for two weeks after surgery. Antibiotics were prescribed for next 7 days.
- 9) After a healing period of 4 months, patient was recalled, and rehabilitated with fixed prosthesis.



Fig. 1: Pre operative

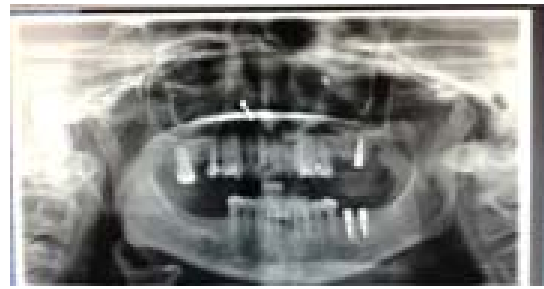


Fig 2: Post operative



Fig. 3: Pre operative



Fig. 4: Post operative

DISCUSSION

The elevation of the maxillary sinus floor was first reported by the boyne in 1960, after fifteen years later boyne and jame reported elevation of the maxillary sinus floor in largely pneumatized sinus cavities in preparation of the placement of the bladed implants. always the decreased bone height in the posterior maxilla limits the placement of the implant, so the problem can be solved by elevating the maxillary sinus and achieving excess height for the placement of implant and so the implant enters into the space occupied by the sinus floor and the ridged fixation is achieved and osteo integration takes place. these authors proposed two different techniques for the easy way to approach the sinus floor without disturbing the integrity of the sinus lining the various two methods that was currently performed are lateral window approach and crestal approach, both the approaches have their own advantages and disadvantages, either with or without placement of the grafts here in this study we practicing only the easy and the recent approach of crestal approach, because the procedure is invasive, a traumatic and less time consuming procedure, here the alveolar bone that is present in between the sinus floor root apex acts as the readymade graft and it tents the sinus floor so the enough space is created in between the floor and the prepared site so that the root form implants enters the sinus cavity behind the bone, this procedure is widely practised and there is no much complications post operatively, in direct sinus lifting surgery piezo instrument is used

to create the window, whereas in crestal approach osteotome is used to elevate the sinus floor the advantage of this procedure is avoidance of the invasive surgery and permitting treatment with a single stage, to achieve excellent primary stability in the cases of sinus floor lifting followed by immediate extraction cases use of osteotomies are more useful than using the drills, by compressing the sinus floor slightly by indirect approach with osteotomies can condense the bone laterally dense interface is created in between the sinus and the implant 19. Improving the initial bone to the implant contact 20. Commonly the complications happens if the schneiderian membrane is perforated by the instrumentation and implant and the filling material can move into the sinus cavity and can cause sinusitis 21 and 22, proper case selection and anatomical site preparation can overcome these problems.

CONCLUSION

Implant placement in in the posterior maxilla that are atrophied with less height in between the sinus floor and the alveolar ridge can be greatly extended by the indirect sinus lift procedure through the crestal osteotome approach as the procedure is very easy and invasive and the time consumption is less and the apical bone themselves acts as the bone graft and that tents the sinus lining and crestal sufficient primary stability for the implant placement with less post-operative complications. It also allows the treating the compromised posterior maxilla with reliable results.

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