Luna Clinical Report Collections





## **Fatigue Fracture Phenomena of Dental Implant Fixture Used Titanium Nitride Coated Abutment Screw**



Prof. Han-Cheol Choe, Ph.D.<sup>1</sup>, Chae-Heon Chung D.D.S., M.S.D., Ph.D.<sup>2</sup>



#### Introduction

Dental implant system: subject to failure in the screw connection part which can occur due to screw loosening or fracture. Mostly limited to 5~7 years of follow-up with only a few that

have a maximum follow-up beyond 9 years. In 15-year study, researcher found an implant fracture incidence of 3.5% with most of the fractures occurring after 5 years of clinical function.

For escape from loosening, had carried out the TiN coating on the abuttment screw, while fatigue and fitness of abuttment screw and fixture may still be not researched as an issue of coating materials.



In this study, fitness and fatigue test were performed to estimate the coating effects of abutment screw for implant system after

#### fatique test.

The purpose of this study was to investigate fatigue fracture

phenomena of dental implant fixture used titanium nitride coated abutment screw under cyclic load.



TiN coated abutment screw (Shinhung MST: TiN Screw RP/Luna), the fixture(Luna  $\varphi$ 4.0 x 11.5mm), abutment (Duo Abut.  $\varphi$ 4.5G/H2.0 H5.5 Hex) of internal hex type were prepared after repeated loosening and tightening 5 times.

The abutment surface and cross-sectional surface were observed using EDS and FE-SEM.

For fatigue characteristics of implant system with coating materials of abutment, in accordance with ISO14801:2003(E), the maximum fracture load was studied by giving the pressure load of 5 mm/min using tensile and compression tester (AG - 10kNX, Shimadzu, Japan)

After selecting the loads corresponding to 80 % and 30 % of Fig. 6. FE-SEM showing the fracture surface of fixture with non-coated abutment compressive load(711N) and setting the minimum load of each after fatigue test at 427, and 569 N: (a) overall, (b) fixture, (c) magnification of (b). load as 10 %, the cyclic loading condition was determined.

After fixing, the loading condition of sine type of cyclic loading from the minimum loadings and the maximum was applied at 30° of angle, and the load cycle was set as 15 Hz maintaining constant temperature and humanity (temperature 25 °C, humidity 40 %). And by setting the maximum number of repetition as 106 times.

Samples were cut for observation of fitness between abutment screw and fixture with non-coated and TiN coated abutment screw.





Fig. 1. Photographs of abutment screw, abutment and fixture.

(a) non-coated abutment screw, (b) TiN-coated abutment screw, (c) abutment and fixture, (d) equipment of fatigue test for dental implant, (e) schematics with regulation of IS014801:2003E; 1 loading device, 2 nominal bone level, 3 connecting part, 4 hemispherical loading member, 5 dental implant body, and 6 specimen holder



Fig. 2. FE-SEM and EDS micrographs showing the non-coated(1) and TiN-coated screw surface(2). (a) screw top (b) screw flank (c) EDS



Fig. 3. FE-SEM micrographs showing the cross-sectional fitness between fixture and non-coated(1) and TiN-coated abutment screw(2). (a) overall (b) right side (c) magnification of (b).



Fig. 4. The variation of load, displacement, and stress of non-coated(1) and TiN-coated abuttnent screw(2) and fixture during cyclic fatigue loading at 569N (a,b,c), 427N (d,e,f), 284N (g,h,i).



Fig. 5. Mean fatigue life of (a) non-coated and (b) TiN-coated abutment screw and fixture with loading value.





Fig. 7. FE-SEM showing the fracture surface of fixture with TiN-coated abutment after fatigue test at 427, and 569 N: (a) overall, (b) fixture, (c) magnification of (b). screw

## Conclusions

1. The fitness between abutment screw and fixture was improved in the case of TiN-coated abutment screw compared to non-coated abutment screw.

2. The fracture cycle drastically decreased as repeated load increased. Especially, in the case of TiN-coated abutment screw, fracture cycle increased compared to non-coated abutment screw.

3. The fatigue crack was propagated fast as repeated load increased, the step of striation increased from 0.5  $\mu\text{m/cycle}$  to 2.0  $\mu\text{m/cycle}$  for TiN-coated abutment screw, from 1.0  $\mu\text{m/cycle}$  to 2.0 µm/cycle for non-coated abutment screw, as repeated load increased

4. The plastic deformation region decreased, whereas, cleavage fracture region increased as repeated load increased. Especially, the plastic deformation region of TiN-coated abutment increased compared to non-coated abutment screw, whereas, cleavage fracture region decreased as repeated load increased.

conclusion, it is considered that the fatigue In characteristics and fitness between abutment screw and fixture can be improved by performing coating with TiN film on the surface of abutment screws.



# Axial displacements in external and internal implant-abutment connection

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## Introduction



## Purpose

- $\cdot\,$  To evaluate the relationship of the applied torque and the axial displacement in external and internal implant-abutment connection
  - In the prosthetic procedures (impression taking, pattern resin, final prosthesis)
- $\cdot\;\;$  To evaluate the axial displacement after cyclic loading

#### Fixture analog



#### Statistical analysis

- + 2-way ANOVA, 3-way ANOVA ( $\alpha {=}.05)$
- Repeated Measured ANOVA (α=.05)
  Scheffe test (*post hoc* comparison)

![](_page_3_Figure_16.jpeg)

#### Final prosthesis

![](_page_3_Figure_18.jpeg)

![](_page_3_Figure_19.jpeg)

#### Conclusions

- 1. After 30Ncm tightening, INT group showed significantly higher axial displacement than EXT group for all instances.
- After 30Ncm tightening, statistically significant differences were found in axial displacement of INT 1-piece impression coping.
- After 30Ncm tightening, there were significantly higher axial displacement of framework in INT group(24 µm) and EXT group (10 µm) compared to the impression coping, pattern resin and cyclic loading.
- After 250 N cyclic loading, there were statistically significant axial displacement in the INT group(6.3 µm) than EXT group(1.8 µm) within 3 cycles.

## References

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# Clinical implication and survival rate of RBM implant

![](_page_4_Picture_1.jpeg)

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![](_page_4_Picture_4.jpeg)

## Abstract

Luna implant (Shinhung Co., Seoul, Korea) is a RBM coated tapered implant reported to be stable long-term clinical outcome. Its surface is treated with the biocompatible and proven to be stable HA blasting media, to obtain the optimum RBM surface roughness. It is also designed under the universal standard which allows the application of other company's abutment to the Luna fixture and vice versa. Furthermore, the fixture is not only sterilized under gamma but also ultraviolet, achieving a more thorough sterilization. The aim of this study is to report various cases with successful result using Luna implant, an implant with advanced surface and stable structure, simplifying clinical procedure.

Clinical research was carried out on 102 implants placed in 40 patients visited Yonsei University dental hospital. Of the 102 placed implant, none failed and high stability was shown even at the poor bone quality areas and at bone graft area. No prosthetic complication such as screw loosening and prosthesis fracture occurred during the observation period. From the clinical cases of Luna implant with RBM surface, possibility of diverse and successful prosthesis may be proven.

## **Background and Aim**

The surface of RBM implant is sprayed with hydroxyapatite or tricalcium phosphate. Hydroxyapatite(Ca10 (PO4 )6 (OH)2) is similar to calcium phosphate, the composition of alveolar bone, and has excellent bioaffinity compared to other blasting materials, favorable in securing stability even with the remnants of media on the surface. While the roughness of general machined surface is Ra=0.1~0.3/m, that of RBM surface is Ra = 1.2~1.8/m, five to ten times greater that the machined. In particular, the surface of RBM plus developed by Shinhung is Ra = 1.5 /m, realizing the optimal roughness for osseointegration compared to RBM implants from other manufacturers. It also has cleaner RBM surface through more than thirty steps of cleansing and the process of precise semiconductor washing (Fig. 1).

![](_page_4_Figure_10.jpeg)

Additionally, the RBM plus surface has proved to be biologically stable through the inspection of surface morphology and foreign objects using SEM, the quantitative and qualitative analyses using XPS(X-ray photoelectron spectroscopy), the inspection of residual acid via extraction pH test, the analysis of pure wash ppm level via conductivity test, IC(lon chromatography), and the analysis on the ion concentration of extraction material using ICP(Inductively coupled plasma- atomic emission spectrometry) (Fig. 2).

![](_page_4_Figure_12.jpeg)

For the implant ultimately goes through the precise washing via UV treatment, it also carries the advantages of hydrophilic property and removal of hydrocarbon, just as observed in other UV treated implants (Fig. 3).

#### Fig. 3

![](_page_4_Picture_15.jpeg)

As aforementioned, LUNA implant presents stable osseointegration in various clinical cases. The purpose of this study is to introduce Shinhung LUNA implant with improved surface and stable structure, and to report successful prosthetic treatments of various patients using the implants.

## **Methods and Materials**

Clinical research was carried out on 102 implants placed in 40 patients visited Yonsei University dental hospital.

- 1. Research on the reason of tooth-extraction through preliminary examination 2. Implantation of Shinhung implant LUNA according to the established
- treatment plan 3. Consider the diameter, position, and length of the implant, quality and quantity
- of residual bone, the complexity of surgery due to the limitation of residual bone 4. Classify the quality and quantity of residual bone according to the Lekholm
- and Zarb classification 5. Interview every patient and take radiographs before operation, immediately
- after implantation, immediately after delivery of prosthesis, and 6 months after delivery
- 6. Record number of failed implants and calculate survival rate.

The diameter and length of LUNA Implants used are as follows.

![](_page_4_Figure_26.jpeg)

## Results

A total of 102 implants were used including forty-two implants in maxilla, sixty implants in mandible, twelve of them in anterior region, and ninety in the posterior. Any implants more than two were splinted.

![](_page_4_Figure_29.jpeg)

Marginal bone loss was measured to evaluate biologic complication through periapical radiographic views taken immediately after implantation, after the placement of prosthesis, and 6-month postoperatively. The measurement showed no significant difference in bone level. Additionally, the frequency of screw loosening and porcelain fracture was measured to evaluate prosthetic complications, showing no specific signs during the observation period.

Time	Implants (n)	Failure (n)	Lost to follow-up (n)	Interval success (%)	Cumulative success (%)
Surgery to delivery	102	0	0	100	100
Delivery to 6 month	102	0	0	100	100

## Conclusion

Within the limitation of this study, the following conclusion were drawn A total of 102 implants in 40 patients were observed and showed no failure during the observation period. From the clinical cases of Luna implant with RBM surface, the possibility of diverse and successful prosthesis may be proven. However, more samples with follow up period longer than five years are required for further reliability.

## References

- 1.Journal Article, *Name of Journal* 2.Journal Article, *Name of Journal*
- 3.Journal Article, Name of Journal
- 4. Journal Article, Name of Journal

# Early loading of dental implants in the augmented maxillary sinus area using resonance frequency analysis

![](_page_5_Picture_1.jpeg)

**Chang – Hun Han** EasyPlant Dental Clinic, Gwangju, Korea

: A Case report

![](_page_5_Picture_3.jpeg)

## Introduction

The development of new implant surfaces, design and clinical techniques has enabled a marked reduction of the initial healing period, even to the point of an immediate / early loading of implants that show high primary stability. Thus, the success of immediate / early loading implant techniques is dependent on the ability of the clinician to determine the degree of primary implant stability and changes in stability along with new bone formation and remodeling.

### PurPose

In the present case, dental implants inserted in the augmented maxillary sinus area were early loaded at 3 weeks postoperatively; prior to loading, implant stability was confirmed with resonance frequencys (RFA).

![](_page_5_Picture_8.jpeg)

Sinus Augmentation with FDBA Intraoperative Photographs

![](_page_5_Picture_10.jpeg)

![](_page_5_Picture_11.jpeg)

Postoperative Radiographs

Sinus Augmentation + 6.5

![](_page_5_Picture_14.jpeg)

![](_page_5_Picture_15.jpeg)

#24 : Luna 4.5 x 11.5mm (insertion torque 50N) #25 : Luna 5 x 11.5mm (insertion torque 50N) #26 : Luna 5 x 10mm (insertion torque 40N) Intraoperative Photographs Changes of ISQ Values in Healing Period

ISQ Value	100 90 80 70	-	+	÷	-
	50	OP	1 week	2 week	3 week
F	<b>+</b> #24	84	85	84	84
F	#25	80	83	83	83
-	#26	81	79	80	80

Sinus Augmentation + 7 months and Implant + 3 weeks

![](_page_5_Picture_20.jpeg)

Sinus Augmentation + 7 months and Implant + 3 weeks

![](_page_5_Picture_22.jpeg)

Customized Zirconia Abutment and Full Zirconia Crown Postoperative Photographs

![](_page_5_Picture_24.jpeg)

![](_page_5_Picture_25.jpeg)

Postoperative Radiographs (Implant + 6 months)

## Discussion

The development of clinical, preferably non-invasive diagnostic instruments with high sensitivity and reproducibility to detect early changes in implant stability during tissue integration of dental implants was desirable in the light of the propagation and the increasing popularity of early loading protocol.

To safe load implant early, it would seem reasonable to first test implant stability using resonance frequency analysis (RFA), which has been shown to be reliable.

## Refereces

1. Attard NJ, Zarb GA. Immediate and early implant loading protocols: a literature review of clinical studies. J Prosthet Dent 2005;94:242–258.

 Östman PO. Immediate / early loading of dental implants: clinical documentation and presentation of a treatment concept. Periodontol 2000 2008;47:90–112.
 Sennerby L, Meredith N. Implant stability measurements using resonance frequency analysis: biological and biomechanical aspects and clinical implication. Periodontol 2000 2008;47:51–66

![](_page_6_Picture_0.jpeg)

# Luna Implant Installation with Vertically Bone Augmented Procedure

Jung Ho Yun DDS, MS Sung Gyu Byun DDS, MS, PhD<sup>1</sup> 1. Chief Director, SYCHAR Maxface Center for Maxillofacail Surgery

![](_page_6_Picture_3.jpeg)

## Introduction

Severely depressed anterior alveolar bone which has been undergone extraction due to failure of Re-RCT and apicoectomy has aesthetic deficiency when trying to restore even implant prosthesis. In that situation, large amount of hard and even soft tissue augmentation is often required. The osseointegration of implant on alveolar bone with large amount of bone augmentation is closely related to the surface properties such as surface roughness, surface topography and surface chemistry. The most widely used technique for the surface treatment is resorbable blasted media(RBM).

### Purpose

This study reports an RBM surfaced implant(Luna) restoration case installed in vertically augmented bone using autogeous bone and xenograft.

## Materials & Methods

Tooth number 32,33 was extracted due to failure of apicoectomy at 2011.4.12. First stage bone augmentation surgery was performed on 2011.9.9 using Alveolar Osteotomy & Sandwich Autogeous Bone Graft at SYCHAR Maxface Center for Maxillofacial Surgery. After 4 months, 2 implant fixtures were installed using 2 Luna fixtures 3.5x10mm(#32), 4.0x10mm(#33) and simple xenograft also was added with OCS-B 0.25cc. The site was left to heal for 4 months. Second stage surgery was performed on 2012.4.18, and final prosthesis was delivered on 2012.5.25.

![](_page_6_Picture_10.jpeg)

Fig.1 Pre-operation panoramic view(2011.4.24)

![](_page_6_Picture_12.jpeg)

Fig.2 After extraction #32,33 Fig.3 After sugmentation

![](_page_6_Picture_14.jpeg)

![](_page_6_Picture_15.jpeg)

Fig.4 Alveolar Osteotomy & Sandwich Autogeous Bone Graft w/ BioOss® and BioGide®

![](_page_6_Picture_17.jpeg)

Fig.5 Implent fixture installetion on penoramic view

![](_page_6_Picture_19.jpeg)

![](_page_6_Picture_20.jpeg)

Fig.6 Lune implent fixture installation

Fig.7 Finel implent prosthesis view

# Results

![](_page_6_Picture_25.jpeg)

Final prosthetic Grown on Intraoral and x-ray view after 4 months from delivery. Apicoactomy will be parformed on #94 tooth in the near future.

This case report demonstrates that The Titanium implant surface treated with RBM procedure showed good biological properties and the bone formation on even vertically augmented alveolar bone. The RBM implant used in this study showed a excellent survival rate regardless of bone quality and quantity, and marginal bone level with satisfactory bone volume is well maintained so far.

## Conclusions

These are restricted clinical observations and need to be completed by long-term results after implant loading. However, it is assumed that this approach can be used in general dental clinics as long as there are proper cooperation with Dept. of Oral Maxillofacial Surgery.

# Case Report Luna implant installation with GBR procedure

![](_page_7_Picture_1.jpeg)

Jong Bin-Lee, Jung Chul-Park, Jung Seok-Lee, Min Su-Kim, Ui Won-Jung, Sung Ho Choi, Kyu Sung-Cho, Jung Kiu-Chae, Chang Sung-Kim

![](_page_7_Picture_3.jpeg)

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## Introduction

After the extraction of posterior tooth, the extraction area undergoes wound healing process which generally creates an unfavorable esthetic and morphological soft-tissue complex. Especially periodontally compromised tooth causes large amount of alveolar bone resorption in which hard and soft tissue augmentation is often required. The biocompatibility of titanium is closely related to the surface properties such as surface roughness, surface topography and surface chemistry. The most widely used commercial technique for the surface treatment is resorbable blasted media(RBM). The RBM technique shows the advantages of sandblasting methods to obtain macro-roughness and micro pits.

## **Purpose**

This study reports an RBM surfaced implant(Luna) restoration case installed in vertically and horizontally augmented bone using xenograft with resorbable collagen membrane.

## Materials & Methods

Tooth number 46 was extracted due to severe periodontitis at 2011.8.25. First stage implant surgery was performed on 2012.1.16 using Luna 5.0x11.5mm and guided bone regeneration was concomitantly followed with OCS-H 0.25cc and resorbable collagen membrane(Biogide<sup>®</sup>). Membrane was fixed with suture after bone graft. The site was left to heal for 4.5 months and healing was uneventful. Second stage surgery was performed on 2012.4.19, and final prosthesis was delivered on 2012.6.18.

![](_page_7_Picture_11.jpeg)

Fig.1 Pre-operation penoramic view

![](_page_7_Picture_13.jpeg)

Fig.2 Implent fixture installation on penoremic view

## **Clinical Cases**

![](_page_7_Picture_16.jpeg)

Fig.3 Pre-extraction of #46

![](_page_7_Picture_18.jpeg)

Fig.5 Lune fixture installation

![](_page_7_Picture_20.jpeg)

Fig.7 OCS-H application

![](_page_7_Picture_22.jpeg)

![](_page_7_Picture_23.jpeg)

Fig.6 Bucco-distal defect on #46

![](_page_7_Picture_26.jpeg)

Fig.8 BioGide® application

![](_page_7_Picture_28.jpeg)

Fig.9 Bone formation after 4.5months Fig.10 Healing abutment installation

## **Results**

This case report demonstrates that staged approach was successfully performed in regenerated hard tissue around implants. The Tiimplant surface treated with RBM procedure showed good biological properties and the bone formation around implant fixture was excellent. The RBM implant used in this study showed a excellent survival rate regardless of bone quality and quantity, and marginal bone level with satisfactory bone volume is well maintained so far.

![](_page_7_Picture_32.jpeg)

Rg.11 Lune fixture installation on peri-epical x-ray view Rg.12 Healing abutment installation on peri-epical x-ray view Rg.13 Rnal prosthetic crown on peri-epical x-ray view

# Conclusions

These are strictly clinical observations and need to be completed by long-term results after implant loading and by histological sectioning to analyze the type of regenerated tissue. However, it is assumed that this approach can be used in general dental clinics.

![](_page_8_Picture_0.jpeg)

# Our surgical experiences of internal submerged tapered RBM surfaced Luna<sup>®</sup> implant

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Department of Oral and Maxillofacial Surgery, Department of Prosthodontics<sup>1</sup> Seoul National University Dental Hospital, Seoul, <u>KOREA</u>

![](_page_8_Picture_4.jpeg)

The rehabilitation of partially and/or totally edentulous patients with dental implants has become a routine treatment in the last decades with reliable long-term results. Various kinds of implants have been developed, and after production of Mg coated oxidized dental implant system in Shinhung Co., additional implant development was also required to reflect the desire and trends of many clinicians and dental market.

The internal submerged tapered dental implant system with resorbable blast media (RBM) surface, named Luna<sup>®</sup>, was developed under these market's reflections in 2011. The surface of this implant was made with calcium phosphate mixtures with RBM, and has the optimal conditions of the surface roughness with long-term safety. We tried to apply this new implant system in the various clinical situations during last year. Total 47 Luna<sup>®</sup> implants were installed to the fifteen patients, five men and ten women, aged 39 to 86 years (mean 61.7), who were partially edentulous in the maxilla, mandible and one of them had orbit defect. All surgical procedures were performed by one experienced surgeon and well trained surgical team in Secul National University Dental Hospital.

Luna® has many specific positive bony preservational characteristics, such as tapered body which show higher torque value than that of cylinder type, and high initial stability from the effects to compress the surrounding bone at the time of implant placement, and sharp threads with power cutting edges minimizing bone resistance by penetration power, and open threads decreasing bone necrosis, and self-tapping at the time of implant placement, and 11 degree tapered connection to increase the ability against banding forces. Internal hex structures with frictional tapered connections between implant and abutment, there are minimal rotation with strong stability.

During the short one year period, Luna® had good results, with all implants were achieved successful osseointegrations and were prosthetically loaded. \*This research was supported by Basic Science Research Program through the National Research Foundation of Korea(NRF) funded by the Ministry of Education, Science and Technology(2012-008544).

#### Background

If patient has deficient alveolar bone for implant placement, bone graft is necessary and these additional procedures can be problematic in terms of cost-effectiveness. However, Nowadays, due to the development of the implant surface and design effects, short implant or narrow implant can be used in several cases without bone grafts. Narrow diameter implants (<3.75mm) may be of benefit if thin buccal-lingual dimension exists, or if

teeth of small cervical diameter are being replaced. In the past, most of Implants manufactured in a foreign country with good

design and surface effects were used. Due to highly rising price, demand of implant made from domestic increased, and so following internal submerged tapered implant (Luna®) will be introduced.

![](_page_8_Figure_13.jpeg)

#### Patients

All surgical procedures were performed by one experienced oral and maxilofacial surgeon in Seoul National University Dental Hospital. Patient's medical history, age, sex, smoking, loading, and arch position recorded. A total of 47 implants were placed in the reconstructed areas.

Period : 2012. 9. 30 ~ 2012. 9. 7. Number of patients : 15 (Male – 5 / Female – 10) Age of patients : 39 to 86 years old (mean : 61.7)

1. Implant fixture location

Rt. Mx. Posterior	Ant. Mx.	Lt. Mx. posterior	Others (Orbit Lateral
4	8	6	wa <b>l</b> l)
Rt. Mn. posterior	Ant Mn.	Lt. Mn. posterior	
10	2	14	8

#### 2. Implant diameter & length

D	3.5 (mm)	4.0 (mm)	4.5 (mm)
	14	22	11
L	7 (mm)	8.5 (mm)	10 (mm)
	14	20	13

#### 3. Radiographs & Clinical photos

Documentation for all clinical cases included: intraoral photographs of the clinical situation, panoramic and periapical radiograph. And All implants are placed with recording the insertional torque force as

measured by a torque-indicating ratchet wrench (TWD0, Shinhung). After a further waiting period of 3 to 4 months, patients were rehabilitated with implant prostheses.

#### 1) Maxillary anterior part

![](_page_8_Picture_25.jpeg)

2) Maxillary posterior part

![](_page_8_Picture_27.jpeg)

3) Mandibular anterior part

![](_page_8_Picture_29.jpeg)

For Overdenture

Edentulous 4) Mandibular posterior part

![](_page_8_Picture_31.jpeg)

5) Extraoral implant (Rehabilitation of orbit defect)

![](_page_8_Picture_33.jpeg)

## Conclusion

The criteria for implant success reported at mobility, pain, radiolucency and peri-implant bone loss. And We obtained ISQ values at baseline and at prosthesis insertion for implants. None of the implants was removed due to untreatable infection, mobility, or fracture, thus leading to an overall implant survival rate of 100%. And there was no discernible crestal bone loss.

#### Discussion

For the latest implant design and surface, there were some problems. leakage at the implant-abutment junction (IAJ) is a major contributing factor for peri-implant inflammatory reactions. And in the processing surfaces, the resorption of the HA coating could produce instability of the implant due to voids between implant and bone. And in the aspect of self tapping, if the extent of the bone drilling by cutting flute is not enough in implant placement, excessive pressure is applied to the adjacent bone. So in order to minimize bone resistance, new design is being developed.

In the recent, SLA surface has seen increased roughness and surface area by transforming with using compressed air injection of Al2O3 and etching with Hydrochloric acid (HCI), Sulfuric acid (H2SO4). As the duration of bone healing was shorten and the high success rate was shown in long-term clinical studies, SLA surface implant is spotlighted.

clinical studies, SLA surface implant is spotlighted. Thus, The latest implants are being developed to overcome various limitations. And in order to the future development of implants, implant users will be more interested in the clinical documentation.

## Regeneration of Anterior Esthetics Ridge augmentation & Luna Implant

![](_page_9_Picture_1.jpeg)

## Sun Young Kim (Representative Doctor) Dr. Jia A Jung Dr. Dae Won Lim, Hyo Suck Kim (Head of Dental Technician)

![](_page_9_Picture_3.jpeg)

Pt. 최00(30세,M)

Diagnosis

Tx. plan

#11,21,22 teeth loss alveolar bone loss

: ridge augmentaion 을 통해 ridge height & width 회복 후 implant prosthesis

After 6 month 3-dimensional implant

occluso-gingival
bucco-lingual
mesio-distal

placement

CC. 타치과에서 임플란트를 아격고 앞니를 뽑았는데, 뼈 가 없어서 어렵다고 했어요. PDH : 2011. 02. 25 #11, 21, 22 ext. PMH : nonspecific

Suplant Dental Hospital

![](_page_9_Picture_5.jpeg)

2011. 12. 23

![](_page_9_Picture_7.jpeg)

2012. 5. 21

![](_page_9_Picture_9.jpeg)

2012. 6. 29

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![](_page_9_Picture_12.jpeg)

![](_page_9_Picture_13.jpeg)

![](_page_9_Picture_14.jpeg)

![](_page_9_Picture_15.jpeg)

![](_page_9_Picture_16.jpeg)

![](_page_9_Picture_17.jpeg)

![](_page_9_Picture_18.jpeg)

![](_page_9_Picture_19.jpeg)

![](_page_9_Picture_20.jpeg)

![](_page_9_Picture_21.jpeg)

![](_page_9_Picture_22.jpeg)

![](_page_9_Picture_23.jpeg)

## After 4 month

- 2nd surgery
- provisionalizatio
- final restoration

![](_page_9_Picture_28.jpeg)

![](_page_9_Picture_29.jpeg)

![](_page_9_Picture_30.jpeg)

![](_page_9_Picture_31.jpeg)

![](_page_9_Picture_32.jpeg)

# Case Report **Immediate Placement of Dental Implants** into Infected Sites

![](_page_10_Picture_1.jpeg)

Chang – Hun Han

![](_page_10_Picture_3.jpeg)

## Introdutin

Immediate Implant placement has several advantages, such a reduction in the number of surgical treatments and reduction of the time between tooth extraction and the placement of the definitive prosthesis. Immediate implant placement into infected sites has been considered a relative contraindication. However, high implant survival rates have been reported recently even when implants were placed immediately in infected extraction sockets.

## Purpose

The clinical trials were to evaluate the success of implants placed in fresh extraction sockets which showed clinical signs of periodontal disease.

# **Clinical Cases**

#### Case 1 (57/M)

- #47: Immediate Implant placement (Luna S&E 4.5x10mm) GBR with ramal bone and resorbable membrane
- #45: Immediate Implant placement (Luna S&E 4x10mm)

![](_page_10_Picture_13.jpeg)

![](_page_10_Picture_14.jpeg)

![](_page_10_Picture_15.jpeg)

![](_page_10_Picture_16.jpeg)

![](_page_10_Picture_17.jpeg)

#47: Immediate Implant placement (Luna S&E 5.0x10mm) GBR with ramal bone and resorbable membrane

![](_page_10_Picture_19.jpeg)

![](_page_10_Picture_20.jpeg)

![](_page_10_Picture_21.jpeg)

![](_page_10_Picture_22.jpeg)

![](_page_10_Picture_23.jpeg)

# Case 3 (74/F)

#16 : Immediate Implant placement (Luna S&E 5.0x10mm) GBR with FDBA and rotated split palatal flap

![](_page_10_Picture_26.jpeg)

![](_page_10_Picture_27.jpeg)

![](_page_10_Picture_28.jpeg)

![](_page_10_Picture_29.jpeg)

![](_page_10_Picture_30.jpeg)

![](_page_10_Picture_31.jpeg)

![](_page_10_Picture_32.jpeg)

![](_page_10_Picture_33.jpeg)

## Results

The healing was uneventful for all implants. Those implants are presenting satisfactory functional and esthetic conditions, suggesting that immediate implant placement into infected sites combined with or without guided bone regeneration may lead to predictable results.

#### Discussion

Successful immediate implantation in debrided infected sockets depends on the complete removal of all contaminated tissue and the controlled regeneration of the alveolar defect. With this proposed clinical approach, experienced clinicians may consider immediate implants as a viable treatment option in patients presenting with dentoalveolar infections.

## References

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3. Meltzer AM. Immediate implant placement and restoration in infected sites. Int J Periodontics Restorative Dent. 2012 Oct;32(5):e169-73.

THE DREAM OF IMPLANT

![](_page_11_Picture_1.jpeg)