User's Clinical Cases
Proving the value and reliability of the products
Why do dentists recommend **Dentium Implant**?

At Dentium, we are committed to the creation of a healthy, beautiful smile by providing dental professionals with high quality products, comprehensive education and training, and unrivaled customer service.
Dentium, the cosmopolitan implant exported to more than 70 countries in the world

Dentium currently has its own corporate and branch offices in U.S.A, China, Dubai, Germany, Singapore, Hong Kong and Russia. Dentium exports its implant products to more than 70 countries through local distributors. Information on the local distributors and corporate offices of Dentium can be searched on our website. (www.dentium.com)

Dentium Co., Ltd. is the leading company as an implant expert by letting its safety and efficiency be internationally proven acquiring ISO 13485, CE, FDA, and so on.
Dentium User’s Clinical Cases

Table of Contents

3 Overview

5 Fixed Denture Restoration Using an Implant in Edentulous Patient
   - Dr. Ma Xiaoni

7 Bridge Restoration for Missing Teeth in the Mandible through
   Gold Crown and Fixing of Screw Location
   - Dr. Yang Chunbo, Dr. Zhu Zhijun, Dr. Zhang Xiubin

9 Aesthetic Restoration Through an Immediate Placement in the Anterior Region
   - Dr. Wang Zhongqun

11 Implant Fixed Restoration for Missing Teeth
   - Dr. Wang Zhongqun

13 Restoration of Posterior Region Using a Regular Diameter Implant
   - Dr. Tae Hyeong Kim

15 11-Year Progress Case of an Immediate Implant Placement After an Extraction
   of Vertically Fractured Tooth due to Traumatism
   - Dr. Byung Ki Park

17 Prognosis of Full Mouth Rehabilitation
   - Dr. Sung Hwan Park

19 External Sinus Lift with Bone Graft & Simultaneous Implantation
   - Dr. Yong Ho Park

21 10 Years of Long-Term Clinical Assessment of Dentium Implant System
   - Dr. Won Bae Park

23 10 Years Follow-up Case of Dentium S.L.A. Surface Implant
   - Dr. Jong Chan Park

25 Dentium S.L.A. surface implant 10 year’s follow up case
   - Dr. Hyeon Shik Park
27 Case of Alveolar Bone Expansion by Functional Remodeling
   - Prof. Sang Wan Shin

29 Long-term Maintenance of an Implant in the Maxillary Posterior Region
   - Prof. Chang Ho Yang

31 Delayed Placement Following Bone Graft in the Mandibular Posterior Region and
   Lateral Approach Case in the Sinus of the Maxillary Posterior Region
   - Dr. Dae Hee Lee

33 Implant Restoration of the Maxillary and Mandibular Posterior Regions
   - Dr. Young Jong Lee

35 Reliable Dentium for the Dearest Father
   - Dr. Seung Min Han

37 Pay Attention to a Crestal Bone Change!
   (Platform Design and Effect of the Surface Treatment of Dentium)
   - Dr. Byung Do Ham

39 Dentium Short Implant
   - Dr. Jong Jin Seo

41 Simple and Stable Sinus Graft Using OSTEON™ II
   - Dr. Jung Hwan Shin

43 Placement Case in Narrow Mandibular Anterior Region
   - Dr. Seung Keun Lee

45 Surgery for a Mandibular 2 Implant Overdenture
   - Dr. Ha Young Kim

47 Surgery for Implant Supported Overdenture
   - Dr. Jung Yeol Lee
Patient wanted implant placement for missing teeth.

**Surgery key point**
Implant was placed through two surgeries:
The 1st stage surgery was performed to place 4 implants (#14, #24, #15 and #26) in the maxilla, and 6 implants (#33, #34, #36, #43, #44 and #46) in the mandible using the implant placement guide.
The 2nd stage surgery was performed to place 4 implants (#11, #13, #21 and #23) in the maxilla. After 4 months, 2nd phase surgery for the step-by-step fixing restoration through a customized abutment was performed.

**Considerations prior to surgery**
There were remaining teeth of #12, #13, #14, #21, #22, #23 and #27 in the maxilla, and #42 and #44 in the mandible. Among these, #12 and #22 already had a bridge restoration with abutment. Periodontal condition of a patient was not good, and all the remaining teeth had mobility of 2 - 3 degrees, which led to a conclusion that they were not worthwhile for remaining. Alveolar bone of a patient was in a good condition and gingival shape was normal. Due to unilateral mastication habit of a patient, facial asymmetry occurred.

**Advantages of restoration**
Customized abutment is an abutment designed through polishing, casting or CAD/CAM technique according to the location of implant placement and the space between missing teeth on 3D images. Using a customized abutment can satisfy patient-specific demands through a maximization of aesthetics, function and stabilization when the placement direction is not ideal.

**Conclusion**
Implant placement combining a fixed denture restoration and reconstruction of occlusion would be the best method for a restoration for edentulous patient. It can help improving the fixing of previous denture location and stabilization, restore masticatory and aesthetic function of a patient, and reduce alveolar bone resorption.
I Clinical Case

52yrs / Male

Before surgery

After 1st placement

After 2nd placement

Customized abutment is installed

Intraoral view installed with a porcelain crown

After surgery
I Cc
Patient experienced a difficulty in eating due to mandibular tooth mobility and wanted a restoration.

I Surgery key point
1. Extraction of #31, #33, #35, #36, #43, #45 and #46
2. #34 and #43 were pending, and temporary denture was manufactured.
3. 7 Dentium SuperLine Implants were placed on #33, #35, #37, #41, #43, #45 and #47 and, crown and bridge restoration with cobalt-chrome alloy was done.

I Surgery Method
2 months after an extraction, 1st stage surgery for Dentium placement on #33, #35, #37, #41, #43, #45 and #47 was performed.
After 4 months, 2nd stage surgery for Dentium placement for #33, #35, #37, #41, #43, #45 and #47 was performed and #34 and #44 (Mobility of 2° - 3°) were extracted. Impression was made to manufacture a customized model and an abutment. Impression for #33, #35, #37, #41, #43, #45 and #47 was taken with window open method.

I Related with restoration
1. Cobalt-chrome alloy crown and bridge were manufactured. (Abutment polishing of #33, #41 and #43 + gold crown #35, #37, #45 and #47 bridge + screw tightening)
2. Gold crown + cobalt-chrome alloy bridge were tested in the oral cavity, and they were completely compatible. Teeth impression was taken with silicon rubber.
3. Manufacture of cobalt-chrome alloy crown was completed. (Abutment polishing of #33, #41 and #43 + gold crown, bridge of #35, #37, #45 and #47 + screw fixing)
4. Polishing abutment of #33, #41 and #43 were installed.
5. Gold crown of #33, #41 and #43 was bonded with a resin adhesive.
Clinical Case

51yrs / Female

1st stage surgery for Dentium placement

After 4 months, Dentium was placed and the 2nd stage surgery was performed.

Impression with window open method

Restorative materials were installed.

Restorative materials were installed.
Swelling and pain was in the anterior region for 6 years. Extraction and an immediate restoration were requested.

Diagnosis prior to surgery
- Remaining tooth root #21 and a labial side were shown. Fistula opening area, pain and tooth mobility of 2°

Clinical diagnosis
- #21 chronic inflammation of teeth roots, periapical cyst

Treatment Plans
1. Surgery
   1.1 Extraction of remaining root, complete removal of cyst and infected alveolar bone
   1.2 Implant placement, GBR bone graft, gingival block
2. Manufacture of a temporary tooth
3. Treatment of inflammation as a preventative measure
4. Permanent restoration after 5 - 6 months
Clinical Case

23yrs / Female

Treatment process: Periapical cyst, complete resorption of labial bone wall near the 1/2 area of teeth roots

Poly crown was used as a restorative material. Screw location was fixed, and it was attempted to prevent an adhesive remained in gingiva. Complications were reduced 2 years after restoration surgery.

After 2 years
I Cc
1 month ago, the last remaining tooth was extracted. A restoration of missing teeth is requested.

I Oral Examination
Gingiva was not completely healed. Periodontal color was normal but alveolar bone was not even with protruding areas. There was alveolar bone volume in the maxilla.

I Considerations prior to surgery
1. Patient’s condition of oral cavity before the placement and Temporomandibular Joint (TMJ)
2. Patient’s mental status and overall physical condition
3. Patient’s job characteristics
4. Patient’s appearance and requests regarding a pronunciation
5. Patient’s economic situation
6. Demands regarding treatment time

I Treatment Plans
1. Effect of aesthetic restoration was confirmed through manufacture of a complete denture.
2. Considering remaining status of alveolar bone both in the maxilla and the mandible, a temporary restoration using a complete denture and a placement location using a placement guide was confirmed.
3. Based on the remaining status of alveolar bone and aesthetic demand, a horizontal placement was chosen.
4. Surgery method: Flapless implant with minimal incision, non-penetrating placement
Clinical Case

Before surgery

Placement with minimally invasive incision in the maxilla

Fixed placement restoration through maxillary impression

Fixed placement restoration in the mandible

2 years after a restoration

53yrs / Male
Restoration of Posterior Region Using a Regular Diameter Implant

Dr. Tae Hyeong Kim

Cc
Molars #36, #37 loosened

Implanted parts
#36, #37

Surgery key point
Molars #36 and #37 were extracted, and the early implant placement was performed when the morphology was somewhat healed, which was 3 weeks after the extraction. Surgery was done in submerged type. After 7 weeks, the 2nd stage surgery was performed.

Prosthetic aspect
Combi abutment was tightened in 25N•cm for connection and then the provisional restoration was placed. After 1 week, re-tightening of combi abutment in 25N•cm was done to take the 2nd impression, and then the final prosthesis was completed and installed.

Conclusion
Function of Implantium as regular diameter has been excellent in the male patient’s posterior region, where the occlusal force is not excessive.
With a long-term use of Dentium Implant, the functions have been shown successful in many cases within the 10-year period. Therefore, it would be fair to say that Dentium Implant has become a high-end implant satisfying both dentists and patients in a great deal.

I  Clinical Case

47yrs / Female

2004. 03. 04
Pre-op

2004. 04. 08
Post-op

2004. 06. 24
Final prosthesis

2013. 08. 21
9 year’s follow up

2013. 08. 21
9 year’s follow up

2014. 01. 28
10 year’s follow up
11-Year Progress Case of an Immediate Implant Placement After an Extraction of Vertically Fractured Tooth due to Traumatism

Dr. Byung Ki Park

I Cc
Vertical fracture of crown-root due to traumatism

I Implanted parts
#14

I Surgery key point
Implant was placed immediately after an extraction due to vertical fracture. Gingival retention flap and C.T graft were performed for esthetic prosthesis. These procedures were used for the retention of gingival papilla for the manufacture of esthetic prosthesis.

I Prosthetic aspect
A 6-month or 1-year of routine check-up was conducted from the completion of prosthesis in 2003 to 2006. From 2007, the patient did not visit the clinic until Jul. 2013 for a check-up.

I Conclusion
Patient visited the clinic in Jul. 2013, which was 7 years after the last check-up on Dec. 2006. It has been 11 years since the prosthesis was first placed, and both prosthesis and alveolar bone were in good condition, which seemed reasonable to conclude that the long-term prognosis would also be satisfactory.
#14 in maxilla was fractured vertically due to traumatism, and the extraction was done using #100 file. After the extraction, the gingival retention flap was performed for a placement of esthetic implant, the esthetic implant was placed and C.T graft was done. 11 years have passed, and the alveolar bone and gingival shape have remained the same as they were at the initial placement of implant.

I Clinical Case

46yrs / Female

2003. 02. 08
Pre-op

2003. 02. 08
Immediate implantation on #14

2003. 08. 20
Final prosthesis

2013. 07. 17
10 year’s follow up
I Cc
Complained of discomfort in mastication (chronic periodontitis in the maxilla/temporary denture installed in the mandible)

I Implanted parts
#33, #34, #35, #37/ #43, #44, #45, #47/ #14, #15, #17/ #21/ #24, #26, #27

I Surgery key point
For good chewing

I Surgery aspect
1. Use of surgical stent
2. Maintaining parallelism between the implants
3. Ample irrigation during drilling

I Prosthetic aspect
1. Focusing on restoring force of mastication
2. Endodontic treatment was performed to restore natural teeth of #13 and #23, and prosthesis was installed through a connection with #21 implant.
3. Prosthesis of #14 and #15-#17, and prosthesis of #24-#26 and #27 were re-done due to partial fracture of porcelain area.

I Conclusion
Patient satisfaction was high due to a good initial fixation force. Since there are no significant complications even after more than 10 years of the treatment, it would be reasonable to expect a good prognosis in the future.

Prognosis of Full Mouth Rehabilitation
Dr. Sung Hwan Park
Patient satisfaction was high due to a good initial fixation force. Since there are no significant complications even after more than 10 years of the treatment, it would be reasonable to expect a good prognosis in the future.

Clinical Case

51yrs / Male

2003. 05. 14
Implantation on #33, #34, #35, #37/ #43, #44, #45, #47

2003. 08. 13
Final prosthesis on #35-#37/ #45-#47/ #44, #43-#33, #34

2003. 11. 14
Implantation on #14, #15, #17/ #21

2006. 04. 18
Implantation on #24, #26, #27

2006.12. 26
Final prosthesis on #24-#26, #27

2013. 09. 17
10 year’s follow up
External Sinus Lift with Bone Graft & Simultaneous Implantation

Dr. Yong Ho Park

I Surgery key point
1. Allograft bone material was chosen as a graft material.
2. In order to reduce Tx. time, simultaneous implantation was placed based on initial stability
3. Minimal drilling & self-threading were performed to obtain the initial fixation force.
4. Deep placement was conducted due to the bone resorption by the failure of a previous implant.

I Prosthetic aspect
Crown design was implemented so that prematurity was not formed and food impaction was controlled under the lateral occlusal force.

I Conclusion
After more than 10 years, it has been retained well without any bone loss. During the follow-up, an implant was placed along with an extraction of natural tooth; however, the bone condition of the initial implant was maintained in a good condition without any problems.
Use of Implantium, which was first released 10 years ago, began in an application to the failure case of the previously used foreign-made implant. It has shown 99% success rate up to now, and only the implant by Dentium is being in use now. More long-term F/U is required; however, it would be fair to expect satisfactory results based on the past experiences.

Clinical Case

59yrs / Male
Patient visited the clinic on Nov. 10, 2002 due to discomfort in mastication and wanted an implant procedure.

**Tx. Planning**
1. Both 2nd molars (hopeless teeth) in the left and right maxilla were extracted, and four Implantium (3.8 x 12mm) of Dentium were placed after 1 month. Bone graft was performed in the extraction and missing teeth area using xenogenic bone, and membrane was not used.
2. After 4 months, the 2nd stage surgery was performed, and the final prosthesis was installed after 6 months.
3. Patient visited the clinic after 2 years and 10 years and was evaluated with clinical testing and panoramic imaging. The result was shown satisfactory since the gingiva near abutment was tightly sealed, and crestal bone was stabilized with no change.

Branemark affiliated implants have been industry standards for other implants based on their long-term clinical data accumulated for over 30 years. Long-term data offer important information on the life of implant, improvement and development of the implant design, and the choice of the implant. In case of the well-known implants by famous foreign brands, it is clearly seen that lots of data are accumulated and research papers are published. This is how they become famous brands recognized by everyone. In order to obtain the long-term data, it takes arduous efforts and time for tracking. What can we say about so-called domestic implants in this matter? A few, seemingly improvised short-term data are available; however, many new products are released even before most short-term data are presented. For the selection of an implant, it is necessary to observe the survival rate and the changes in crestal bone for at least 5 years. Survival rates of the implants currently in the market are varied from 90% to 98%, and on the basis of Branemark data, Adell (1981) showed an absorption of 1 - 1.5mm for the first year and 0.1 - 0.2mm each year afterwards, which is assumed to be in the normal range.

What about Dentium implant in this view? Cases that lasted over 2 years from the 584 implants used in 166 patients were collected and the follow-up of the long-term clinical data of 10 years on those cases was performed. The average recall period was 67.04 months and 4 implants among those failed. Very high survival rate of 99.32% was shown, the frequency of bone resorption was 5.82% and the average of bone resorption rate was 0.21mm/implant, which was very low. Crestal bone resorption rate was much lower than Branemark data, and crestal bone response has been shown very stable.
Dentium implant has shown its excellence and competitiveness in terms of clinical effectiveness compared to various domestic and foreign implants. It would be considered more trustworthy with conduction of additional research.

## Clinical Case

45 Yrs / male

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002.11.10</td>
<td>Pre-op</td>
</tr>
<tr>
<td>2002.11.28</td>
<td>Post-op</td>
</tr>
<tr>
<td>2003.03.13</td>
<td></td>
</tr>
<tr>
<td>2003.05.19</td>
<td>Final prosthesis</td>
</tr>
<tr>
<td>2005.05.23</td>
<td>2 year's follow up</td>
</tr>
<tr>
<td>2013.01.17</td>
<td>10 year's follow up</td>
</tr>
</tbody>
</table>
10 Years Follow-up Case of Dentium S.L.A. Surface Implant

Dr. Jong Chan Park

I Surgery key point
Since there were few residual bones in maxilla (residual ridge height from alveolar crest was only 3 – 4mm), maxillary sinus lift was performed after a tooth extraction. After approximately 7 months, an implant was placed in a more accurate location using a pre-fabricated surgical guide.

I Surgery aspect
As seen from the picture, the early stage of Implantium had a mount, which greatly helped in determination of a placement direction. A protocol about the placement period at that time was to exert loading 6 months after the placement; however, in this case, loading by temporary crown was done at 4.7 months and the final prosthesis was installed approximately after 2 months.

I Prosthetic aspect
In order to reduce the number of placement, it was planned to use a bridge type for both maxilla and mandible. In addition, abutments with various gingival heights were used to avoid an exposure of metal collar. Following the protocol practiced at that time, the distal side of the 2nd molar, which was the most prone to the fracture, was treated with metal coverage to give a protection against fracture. 10 years have passed and there is no fracture on porcelain tooth.

I Conclusion
10-year report of Implantium treated with S.L.A. surface of Dentium was presented. Radiographs have shown that bone response is excellent and it is maintained well with no screw loosening up to the present moment. Margin of prosthesis was not as accurate as today since it was difficult for the initial impression coping to obtain a precise location within the impression material; however, it has been maintained well without cement leakage.
Placement case of 10-year fixture (9 years and 10 months have passed since the beginning of the function), of which the surface was treated with S.L.A. of Dentium, was reported. It has shown that bone to implant contact was not broken even after 10 years, and very stable bone response was shown without marginal bone loss.

I Clinical Case

52yrs / Female

2002. 02. 17
Pre-op

2003. 10. 09
Post-op

2004. 03. 31
Final prosthesis

2007. 08. 22
4 year's follow up

2011. 04. 14
7 year's follow up

2013. 01. 08
10 year's follow up
Dentium S.L.A. surface implant 10 year's follow up case

Dr. Hyeon Shik Park

I C.C
Patient visited the clinic due to the fracture of the right maxillary premolar and missing teeth in regions of the left and right mandibular 2nd molar

I Surgery key point
For #14, the immediate placement after an extraction was performed since it was fractured up to the root of tooth. Regions of the left and right mandibular 2nd molar were missing teeth for a long time, and the delayed placement of implant was performed.

I Surgery aspect
In the immediate placement after an extraction of the maxillary premolar, a root-form implant was easily placed in the extraction socket, the initial fixation was good, flapless surgery was performed connecting healing abutment right away. Regions of mandibular molars were missing teeth for a long time and alveolar bone was resorbed towards the lower part. However, the difference with the adjacent teeth was not severe, and the placement was done with the upper part of the implant located at 0.5mm below the crestal ridge. The initial fixation was very excellent.

I Prosthetic aspect
Maxillary premolar was connected with dual abutment and a cement-retained porcelain crown was installed. In the region of the right mandibular 2nd molar, 1-piece screw-retained gold crown using direct casting abutment was manufactured and installed. In the region of the left mandibular 2nd molar, dual abutment was connected and the cement-retained gold crown was installed. s. For approximately 11 years of period from the surgery performed on Jun. 21, 2002 up to the present time in Apr. 2013, there were no special treatments conducted except the routine check-ups for oral health and partial occlusal adjustment. There was no screw loosening or peri-implantitis observed. Bone resorption is rarely seen in radiograph.

I Conclusion
Use of a root-form implant was convenient for immediate placement of implant after an extraction, and internal connection type was useful for performing the 2nd stage surgery and connecting the parts more easily and precisely. Initial fixation was excellent and the response of adjacent alveolar bone was very stable since the self-tapping function was excellent. 11 years have passed up to now, and positive outcomes in all areas such as the long-term observation of an initial surgery, prosthetic aspect or long-term prognosis have been shown.
Initial fixation in the root-end was favorable even with adverse conditions of the implant placement location. Furthermore, in case of performing an alveolar bone graft along with the placement, the response with the grafted bone and the surrounding bone was excellent.

Clinical Case

49yrs / Male

2002. 06. 11
Pre-op

2002. 06. 21
Post-op

2002. 10. 28
#14, #37, #47 final prosthesis

2003. 12. 19
2 year’s follow up

2010. 06. 23
8 year’s follow up

2013. 04. 12
11 year’s follow up
I C.C
Patient wanted an implant placement.

I Implanted parts
#36, #44, #45, #46

I Surgery key point
#44 was an endo failed case, and immediate placement was done after an extraction. A long time has passed since the extraction for #45 and #46, and the width of alveolar bone was somewhat narrow. #36 was also an endo failed case, and the placement was done 2 months after an extraction.

I Prosthetic aspect
A 6-month or 1-year of follow-up has been conducted after connecting a prosthesis. There has been no prosthetic complication during an observation period, and periodontal morphology is in healthy condition.

I Conclusion
It is considered to be a successful case in the long term since cortical bone near marginal bone is retained well. As a result of comparison of radiographs taken immediately after an installation of prosthesis with radiographs taken 7 years after an installation of prosthesis, the marginal bone expansion was observed. Cortical bone has been maintained in good condition therefore, it would be fair to expect good outcomes in the long run.
Dentium Implant has been used for 10 years. It is a reliable and stable product for clinicians to use since there has been no change in basic surgical kit and prosthetic kit. Furthermore, the initial fixation of implant is excellent, and it is convenient since the same types of coverscrew and healing abutments can be used for most fixtures. From the long-term observation, alveolar bone loss is considered to be low compared to other implant systems.

I Clinical Case

58yrs / Female / Dentist’s Sister

2005. 02. 17
Pre-op

2005. 03. 29
Post-op

2005. 10. 24
Post-op

2005. 09. 13
Final prosthesis

2005. 11. 15
Final prosthesis

2007. 06. 18
2 year’s follow up

2013. 11. 08
8 year’s follow up

2014. 03. 27
9 year’s follow up
Long-term Maintenance of an Implant in the Maxillary Posterior Region

Prof. Chang Ho Yang

I C.C
   Chronic periodontitis, tooth mobility

I Implanted parts
   #16

I Surgery key point
   During implant placement along with bone graft, develop satisfactory bone condition and select an appropriate implant

I Prosthetic aspect
   Dispersion of occlusal force through the formation of proper occlusion

I Conclusion
   Despite the loss of adjacent natural tooth due to periodontitis, properly placed Implantium implant has maintained its function for a long period of time.
Implantium implant placed according to the principles has been maintained and functioned for about 10 years and shown long-term stability.

## Clinical Case

45yrs / Male

2004. 04. 03  
Pre-op

2004. 08. 31  
Final prosthesis

2005. 12. 08  
1 year follow up

2008. 01. 16  
3 year’s follow up

2012. 05. 18  
8 year’s follow up

2014. 03. 15  
10 year’s follow up
C.C
Pain in the posterior region in the left mandible and the right maxilla

Surgery key point
The left mandibular molar with severe tooth mobility was extracted and the bone graft was performed. Approximately after 4 months, implant was placed. When the prosthesis was completed, the right maxillary molar was extracted, and after 2-3 months, the surgery with lateral sinus approach was planned.

Surgery aspect
Since there was no Y dimension from the drill with 4.3 diameter, the removal force when drilling close to the mandible was reduced, but it gave comfort in drilling. Residual bone was about 3mm when the implant placement was done in the right maxilla, however, the initial fixation was excellent.

Prosthetic aspect
Existing dual abutment non-hexa was used for placement without special milling. 10 years have passed and there has been no screw loosening in the posterior molars. Abutment level impression was done using non-hexa dual abutment in the right posterior region of the maxilla and the prosthesis was installed. The patient has been using it without any particular problems for 10 years.

Conclusion
Bone near the grafted area has been maintained well without infection. Marginal bone response near the implant areas of #37, #16 and #17 has remained stable.
Marginal bone response near the implant area has remained stable. 10 years have passed and there are no particular issues.

## Clinical Case

- **2002. 05. 06**
  Bone grafting after extraction on #37

- **2002. 09. 09**
  Post-op

- **2002. 11. 12**
  #37 final prosthesis / #16, #17 extraction

- **2003. 02. 05**
  Sinus elevation & Implant installation on #16, #17

- **2003. 10. 21**
  #16, #17 final prosthesis

- **2013. 01. 19**
  10 year’s follow up
C.C
Discomfort in posterior region while masticating

Implanted parts
#16, #17, #45, #47 / #36

Surgery key point
1. After #18 and #48 were extracted, #16, #17, #45 and #47 were placed. Initial fixation was not good in the maxilla but good in the mandible.
2. After an extraction of #36 and healing for 5 months, an implant was placed. (Aug. 10, 2006)

Prosthetic aspect
1. Implant occlusion is practiced in the right posterior regions of both maxilla and mandible.
2. Implant occlusion is practiced in the left mandible, and natural teeth occlusion is in the left maxilla.

Conclusion
1. Regardless of antagonistic teeth being implants or natural teeth, implants have shown a good long-term prognosis.
2. A good long-term prognosis has been shown regardless of the initial fixation.
3. Bone resorption was rarely seen, and overgrowth of bone was shown in some areas, specifically in #36.
Dentium Implant seemed to show a good long-term prognosis and an excellent bone response in all cases. Furthermore, the procedure is somewhat simple and provides a good initial stability.

I Clinical Case

72yrs / Female

- **2004. 07. 15**
  - Pre-op

- **2004. 09. 02**
  - Post-op (#16, #17, #45, #47)

- **2006. 06. 21**
  - Final prosthesis (#16, #17, #45, #47), #36 extraction

- **2006. 08. 10**
  - #36 post-op

- **2008. 02. 05**
  - #36 final prosthesis, 4 year’s follow up (#16, #17, #45, #47)

- **2014. 02. 21**
  - 10 year’s follow up (#16, #17, #45, #47), 8 year’s follow up (#36)
Patient wanted a restoration along with an extraction of tooth.

Implanted parts
Left mandibular 1st molar

Surgery key point
This was an early case of an implant to further understand the characteristics of Implantium. It had the similar internal and conical connection type as Implantium.

Surgery aspect
A severe progression of root caries led to an extraction. It was an indication of an immediate placement; however, the placement was done approximately after 3 months. The purpose was to perform the Implantium procedure exactly according to the manual since it was still early in the stage of introduction to the Implantium. At that time, implant was placed so that the implant top part was located at 0.5mm downward from the bone crest level. The 2nd surgery was performed after submerged healing for approximately 2 months.

Prosthetic aspect
The final prosthesis was completed at 3 months after the surgery. A firm connection without screw loosening between fixture and abutment was considered an advantage of Implantium; therefore, the precise connection among the prosthetic parts was the main focus. SCRP-type prosthesis was manufactured, and screw tightening was done to avoid screw loosening 2 more times in 2-week interval.

Conclusion
Although it is a single case with 10-year follow-up, excellent clinical results have been shown with stable connection of fixture-abutment, marginal bone response and gingival response.
Although it was a single case, it showed that a marginal bone response, a connection of fixture-abutment and a gingival response was excellent.

### Clinical Case

76 yrs / Male / Dentist’s Father

- **2003.06**
  - Pre-op
- **2003.06**
  - post-op
- **2003.09.02**
  - Final Prosthesis
- **2005.11.04**
  - 2 year’s follow up
- **2013.05.08**
  - 10 year’s follow up
Pay Attention to a Crestal Bone Change!
(Platform Design and Effect of the Surface Treatment of Dentium)

Dr. Byung Do Ham

I C.C
Left mandibular 1st molar was extracted on Feb. 25, 2006 and the patient visited the clinic for a therapy planning on Mar. 27, 2006.

I Surgery key point
Following the early placement protocol, it was decided that an implant (Implantium 4.8 X 10mm) was placed on Apr. 9, 2006, which was 6 weeks after an extraction.

I Surgery aspect
1. Despite the difficulty posed in posterior region, papillary gingival saving incision was attempted.
2. Extraction socket was not completely healed.
3. Implant was placed adjusting to the interradicular bone.
4. Placement was done a little higher than the alveolar ridge considering how much extraction socket was healed.
5. HAB 552035 (w 55mm X h 3.5mm) was connected according to the single-stage protocol.

I Prosthetic aspect
1. Provisional crown (10Ncm) was installed on Jun. 27, 2006, which was 10 weeks after the surgery.
2. Final crown was installed on Aug. 16, 2006.
3. It has been confirmed that the patient has been using it well up until the patient’s last visit on Sep. 6, 2013, which is 7 years and 5 months after the implant placement procedure.
   (No prosthesis fracture, mobility, bone resorption, screw loosening and food impaction is shown.)

I Conclusion
Implant type is not easily determined considering the extraction and the size of the mandibular 1st molar. Improvement of shape with wide & tapered design of Dentium helps clinicians greatly in this matter, and SuperLine, which introduces similar designs for various diameters, is widely used.
This is an excellent implant to use for increasing success rate in large extraction socket or slow healing area, maxillary posterior region with low bone density and the bone-grafted area.

### Clinical Case

48yrs / Female

2006. 04. 09
Pre-op

2006. 04. 09
Pre-op

2006. 04. 09
Post-op

2006. 08. 16
Final prosthesis

2006. 04. 09

2007. 11. 08
1 year follow up

2013. 09. 06
7 year's follow up
Gingiva is frequently swollen.

Surgery key point
As a diabetic patient with 6.8% of HbA1c, the patient had severe periodontitis which caused overall alveolar bone loss. Since the distance to the inferior alveolar nerve was approximately 7~8mm in the mandible, it was planned to use Short Implant. After controlling a blood glucose level, autogenous bone graft and PRF were used in implant procedure.

Prosthetic aspect
Collapsed occlusal plane is restored to the balanced occlusal plane.

Conclusion
When it is difficult to perform a surgery for being close to the inferior alveolar nerve due to the destruction of alveolar bone, using GBR or performing block bone graft can be burdensome for both patients and surgeons. In this case, Dentium Short Implant can reduce the discomfort in patients caused by many bone grafts and surgeons can avoid surgery-related risks as well. Properly used Short Implant can bring out excellent results.
Patient discomfort experienced by many bone grafts can be reduced through the use of Dentium Short Implant. Surgeons can also avoid surgery-related risks with Short Implant; therefore, properly used Short Implant can bring out excellent results.

## Clinical Case

59yrs / Female

Pre-op

#36, #37 Final prosthesis
#45-47 Post-op

Final prosthesis
C.C
Right maxillary molar is missing.

Surgery key point
Residual bone height around #16 area was somewhat short; therefore, a sinus graft through crestal approach was performed.

Surgery aspect
Zirconia cap, which was designed according to the Dentium drill stopper, was used to manufacture a stent. After membrane was elevated using hatch reamer, sinus graft was performed using OSTEON™ II.

Prosthetic aspect
After an impression was taken using transfer coping, full zirconia crown (PC-zir) was used to manufacture prosthesis.

Conclusion
Case was completed with an excellent initial fixation force of SuperLine and grafting technique using OSTEON™ II.
OSTEON™ has been in use for sinus graft. The newly released OSTEON™ II is better than OSTEON™ in terms of wettability, which can provide more advantages in manipulation. Based on the stable results from sinus graft, it is expected to be in use more often in GBR near bone defect areas.

I Clinical Case

42yrs / Male

Pre-op

Post-op

Healing

Final prosthesis

3 month’s follow up
C.C
Bridge with 4 incisors in mandible was planned for restoration. There was buccal bone loss in ponic site, which was to be fixed.

Surgery key point
Locate SlimLine at the pre-determined position through a diagnostic wax-up.

Surgery aspect
Fixture was placed somewhat divergent so that the optimal parallelism could be maintained between tapered posts. OSTEON™ Collagen, a synthetic bone graft materials with low resorption, was grafted in order to compensate the bone loss in ponic site and increase bone volume. A resorbable collagen membrane with long resorption period was used. In order to minimize changes in MGJ, vertical cut of flap was avoided as much as possible.

Prosthetic aspect
Since a post was removed from oral cavity without using analog, it was difficult to manufacture a stone model. With an existing manufacturing method, a model could be easily damaged; therefore, zirconia frame was manufactured with CAD/CAM technique using 3D scanner. Porcelain exclusively used for zirconia was utilized for veneering and 4-unit bridge of cement-retained type was completed.

Conclusion
In an area with insufficient space, a firm SlimLine fix type with a small diameter was used for restoration. Clinicians need to understand before an application of OSTEON™ Collagen that it is easy to handle during surgery and the resorption is slow.
The use of OSTEON™ Collagen is to increase bone volume and is preferred since it prevents the loss of graft materials and handling can be quickly completed. A resorbable collagen membrane is also used with an advantage of slow resorption. However, it is not still resorbed even after 5 months, which causes a difficulty in the formation of partial thickness flap when muco-gingival surgery is necessary. It is considered as a “double-edged sword” in this view.

## Clinical Case

67yrs / Female

Pre-op

SlimLine
Bone defect
OSTEON™ Collagen

Collagen Membrane
Post-op
4 month’s after

Final prosthesis
C.C
Patient wanted a prosthesis therapy.

Surgery key point
Although the parallel placement of all implants was not easy considering the shape of residual alveolar bone in the maxilla, it was attempted to place implants parallel in desired locations using surgical stent and CT in order to minimize complications of prosthesis.

Prosthetic aspect
Since the dental clinic the patient previously visited was shut down, he visited our clinic for a prosthesis manufacture of maxilla and mandible. At the first examination, a provisional bridge of #13 and #23 was installed in the maxilla, and provisional implants of #37, #45, and #47 were placed in the mandible. #35 region only had GBR. Endodontic treatment was completed for #32, #33, #34, #43 and #44 in the mandible and a provisional bridge was installed. Since it was expected that a prognosis of maxillary residual bone (#13, #23) would be unsatisfactory, a temporary denture was manufactured after an extraction. A fixed prosthesis restoration in the mandible was completed based on the occlusal plane set up in the maxilla. Since residual alveolar bone was in a good condition, an implant fixed prosthesis restoration was recommended for the maxilla. The patient wanted to have an implant denture due to a financial reason, which led to a procedure of overdenture. After connecting healing abutment, denture manufacture was implemented according to the general rules. Magnet assay was connected using acrylic resin through a direct method in oral cavity after completion of a maxillary complete denture.

Conclusion
Use of the traditional bar attachment in maxillary overdenture has many advantages; however, a magnet attachment, which is less affected by path, can be a good alternative considering an insufficient clearance or maintenance of a prosthesis. There were problems of abrasion and corrosion related with magnet attachment in the past. Most of these problems are considered to have been overcome with technical advances, however, it has a very serious weakness, which is an easy separation by lateral force. 4 implants placement in the maxilla and use of dome type magnet attachment can help obtaining satisfactory maintenance and support along with a stabilized denture use. In order to have more reliable results, a long-term clinical research would be necessary.
Patient could smell the metal for the first 1-2 weeks after an installation of prosthesis. Check-up would be necessary to see if there was any initial cauterization caused by saliva. Other than that, it was satisfactory.

I  Clinical Case

56yrs / Male

Pre-op  After 10 days #33, #43  After 6 months #33, #43

SimpleLine II implantation  3 month’s after Ball abutment connection

6 month’s follow up
C.C
Patient wanted to participate in the clinical test of implant overdenture.

Surgery key point
Due to the Type I bone tissue, implant was placed with insertion torque (35Ncm) after full depth final drilling and tapping. Since irregular alveolar crest was present due to many depressions in torus, the implant was placed with the placement length matched with the highest point of the torus.

Prosthetic aspect
Denture was in a satisfactory condition and had a good goodness-of-fit. Therefore, female was attached to the denture using a direct method without any additional relining procedures.

Conclusion
Function of overdenture has been shown satisfactory without any particular issues. Condition of bone loss near implant or periodontal condition is very successful, which leads to the high satisfaction of the patient.
A mini ball attachment of Dentium has a small ball in the male part. This makes a patient feel less burden when applied into the oral cavity, and the function is as much stable as general attachments. In addition, prosthetic size is equalized in attachments of all products, which can help clinicians feel less confused and easy to select regardless of the fixture types.

### Clinical Case

53yrs / Male

- **Pre-op**
- **10 day’s after #33, #43**
- **After 2 months ball abutment connection #33, #43**
- **SimpleLine II implantation**
- **2 month’s after ball abutment connection**
- **6 month’s follow up**
- **1 year follow up**
Why Dentium?

Dentium, Dentist’s most favored Implant
The top enterprise in implant preference selected by “Dentphoto”, the representative community of dentists of KOREA.

Possession of long-term clinical cases more than 10 years
Dentium implant possesses long-term clinical cases more than 10 years, and presents the faith to the clients with the best product ranked with world prominent product. And Dentium implant still endeavors after the best product with a steadfast heart in more than 10 years.
OVER A DECADE OF COMMITMENT TO THE BEST PRODUCTS FOR DENTISTS AND PATIENTS