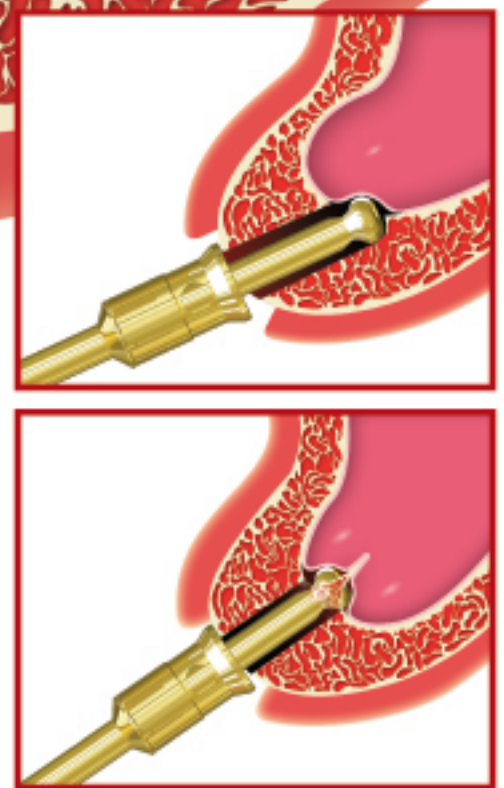


SCAKIT

Sinus Crestal Approach

User Guide





SCAKIT

Sinus Crestal Approach

Introduction



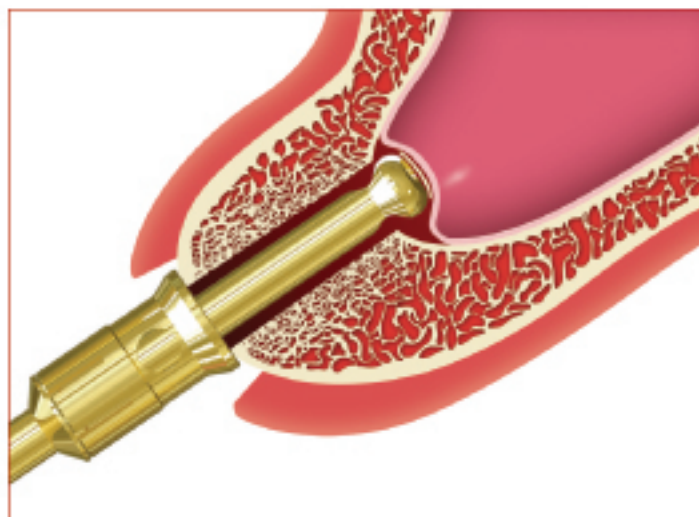
Introduction
SCA Kit Composition
SCA Kit Components
Procedure
Case Report



Introduction



Some patients have a limited crestal bone height in the posterior maxillary area. In such a case, sinus elevation surgery has been required to increase bone quantity in the posterior maxilla for the fixation of root-type implants. Crestal approach is a minimally invasive alternative to the lateral approach sinus lift. This procedure entails utilization of the SCA kit which is a drilling tool on the inferior cortical bone without tearing of the schneiderian membrane. SCA kit is the tool to elevate the maxillary sinus floor in an apical direction to create a space in that region as well as to make a perforation on the inferior cortical bone. SCA kit has a number of advantages over other commercially available sinus lifting tools. First, compared to others, the S-reamers provide fast drilling procedure typically operated at 800~1,200 rpm. Second, the operation with SCA kit is simpler and much comfortable process for patient without malleting osteotome technique. Last, SCA kit offers safe operation with special designed blade and stoppers removing the damage of sinus membrane.



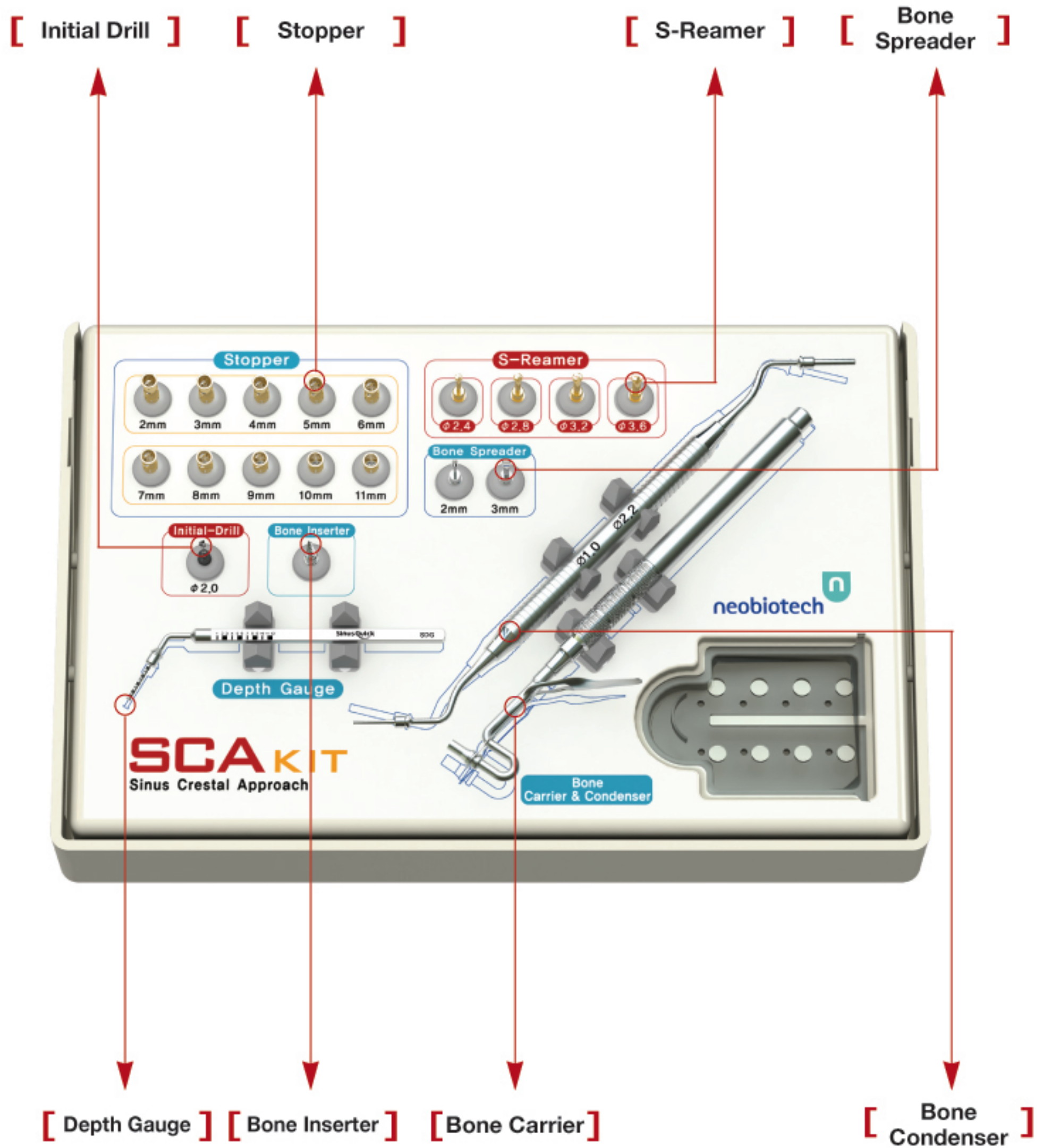
(Misaligned case)



(Septum case)



SCA Kit Composition





SCA Kit Components

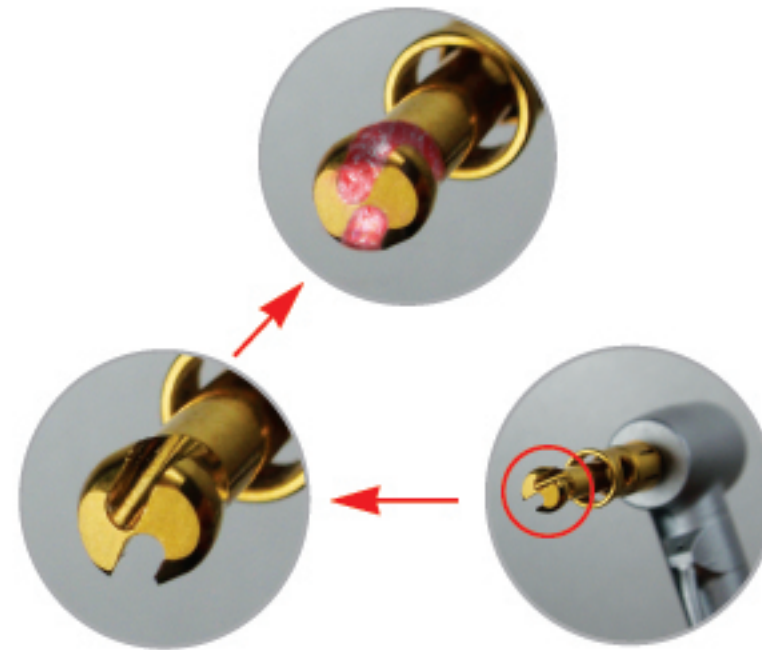
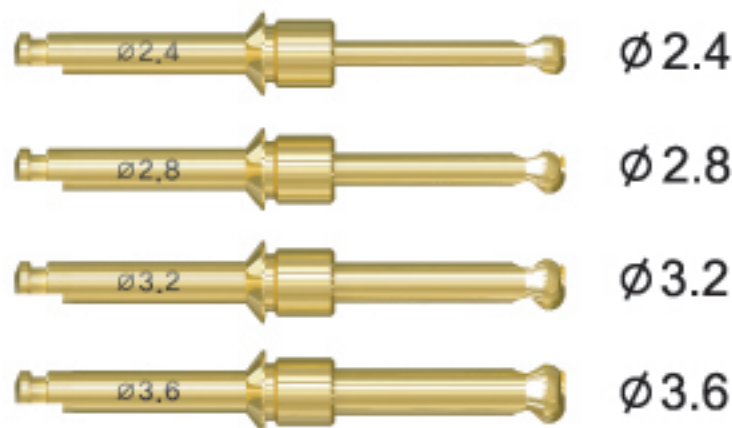
1. Initial Drill



- ▶ Drill for creating guide hole upon designating the precise point before using S-reamer.
- ▶ Use by connecting stopper in order to drill exactly to the desired length.

※ Speed : 1,200RPM

2. S-Reamer

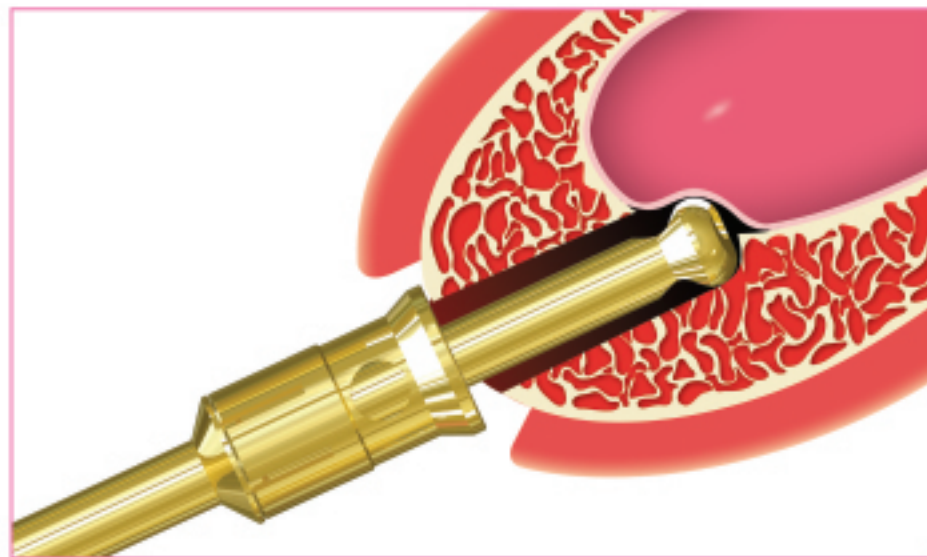


S-Reamer filled with bone chip
(Safety design & mechanism)

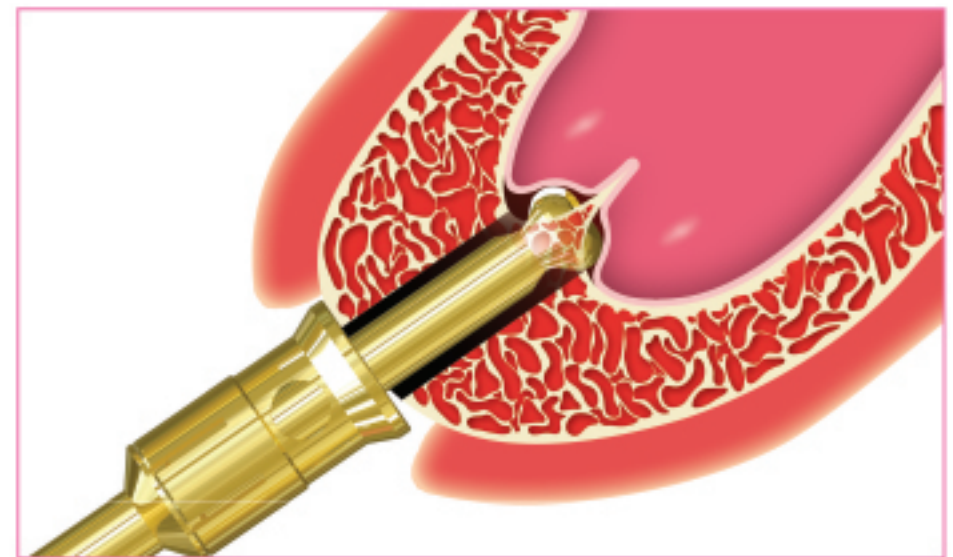
1. S-reamers are a key component of SCA kit and are used to perforate the inferior cortical bone in the posterior maxilla without sinus membrane rupture which is a primary concern during the sinus elevation procedures.
2. S-reamer's head with a special blade structure has been designed to perforate the sinus inferior cortical bone without the sinus membrane tearing therefore S-reamers can be applicable to even in the misaligned and septum cases.
3. S-reamers mounted stoppers can provide you the safe and fast drilling by drilling depth control.
4. It is very important to select the appropriate diameter to obtain an sufficient initial stability.

※ Speed : 1,200RPM

SCA Kit Components



(Misaligned case)



(Septum case)

※ S-reamer Diameter Selection (Based on implant insertion depth in sinus)

► Regular fixture

1mm ~ 3mm insertion : ϕ 2.4mm

More than 4mm insertion : ϕ 2.8mm

► Wide fixture

1mm ~ 3mm insertion : ϕ 3.2mm

More than 4mm insertion : ϕ 3.6mm

3. Stopper



(Image 1)

1. Stoppers mounted on a S-reamer are the important tool to control the drilling depth of S-reamer while drilling.
2. Each 1mm steps make the S-reamer stop to insert maximum 1mm in sinus. To prevent the membrane rupture by physical pressure, the stopper is composed of 10 pieces, 2mm ~ 11mm.
3. The stopper can be also mounted on the bone spreader and bone condenser to prevent sinus membrane damage.



2mm Stopper

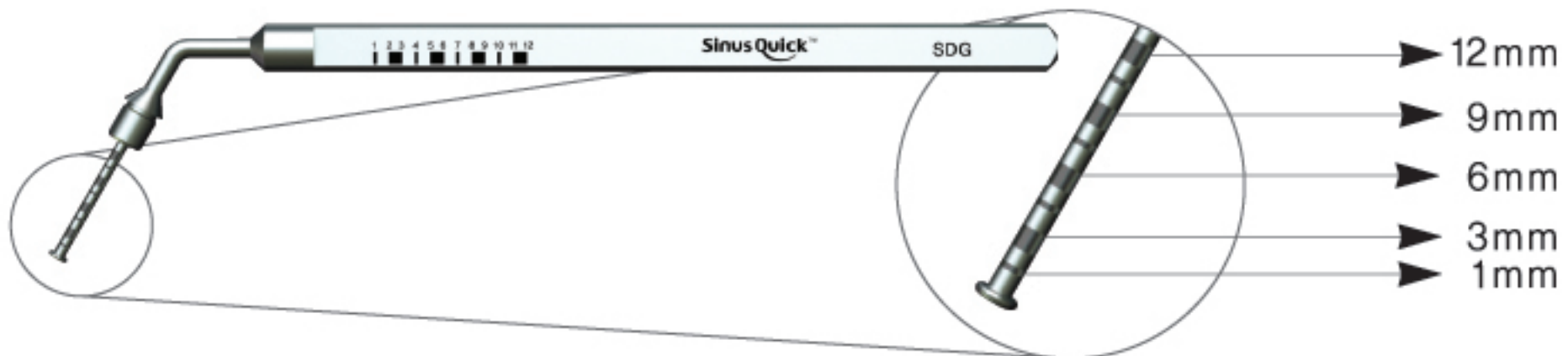
11mm Stopper

(Image 2)



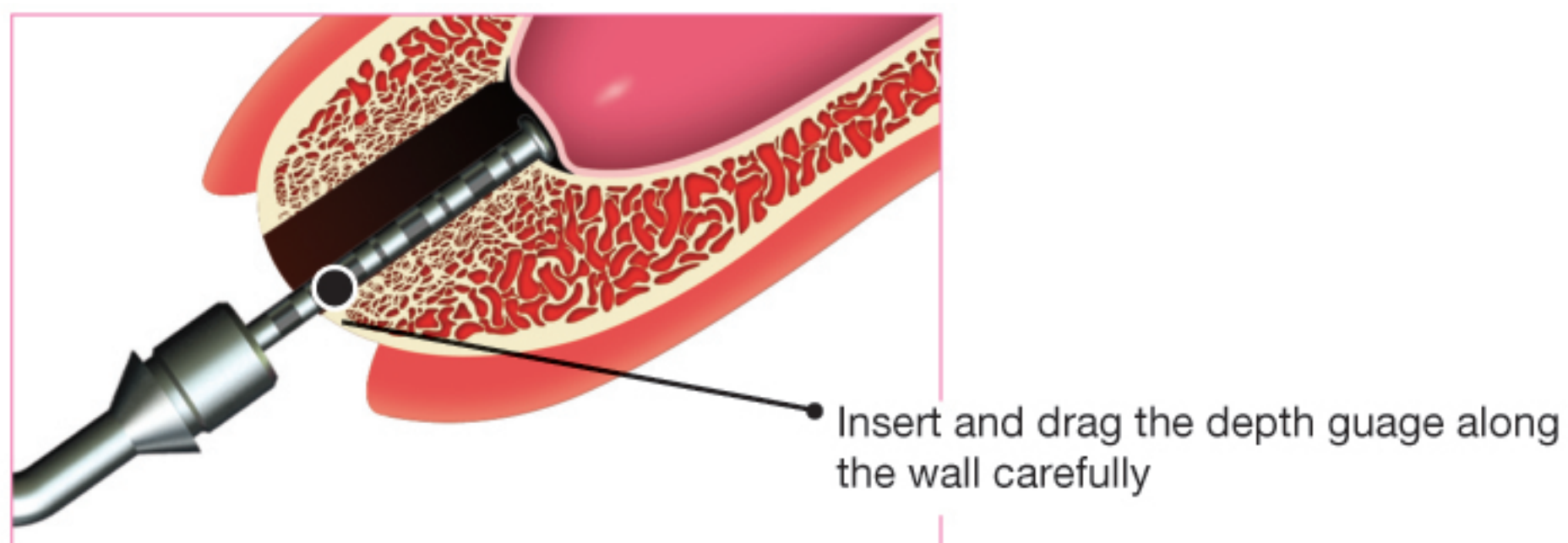
SCA Kit Components

4. Depth Gauge



This is a measuring tool of residual bone height after perforate the sinus inferior cortical wall. The extended flat edge of the depth gauge is designed for clinging to the sinus crestal floor.

Caution: Do not insert the depth gauge maximum 1mm than residual bone height.



5. Bone Carrier



Bone carrier is used to carry the bone grafting materials into osteotome site.

SCA Kit Components



6. Bone Condenser



Bone condenser is used to keep the graft materials in place on the floor of the sinus through the osteotome site and the appropriate size of stopper mounted on the bone condenser should be selected same as the residual bone height.

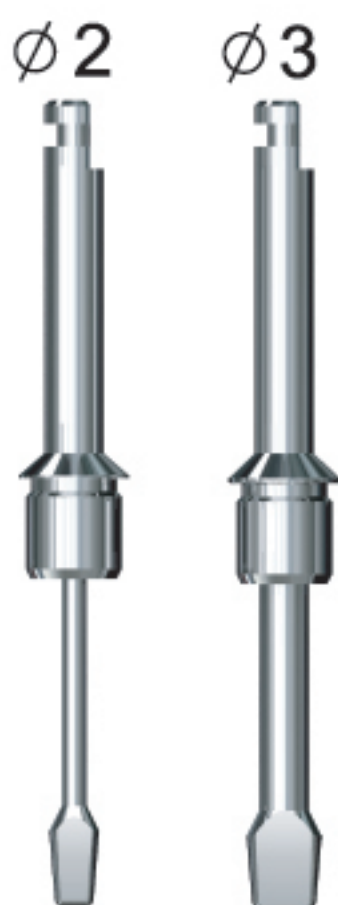
7. Bone Inserter



Bone Inserter is an instrument which is for bone graft to push the bone into sinus after inserting the bone into a hole with bone carrier.
Bone Inserter can be safely used without any damages at membrane after combination with Stopper.

※ Speed : 80RPM

8. Bone Spreader



The bone inserted in the sinus floor can be spread out to a lateral direction (left and right side) by this tool thereafter the sinus membrane at the inferior aspect of the osteotomy is naturally detached from the floor of the maxillary sinus and elevated upward to create more space in the floor of the sinus for the bone-graft material. The minimum 0.3cc amounts of (height 3mm) bone grafting material are recommended to be inserted into the space before use the bone spreader in sinus and then mount the same size stopper in length as residual bone height. Whenever insert the bone grafting material, 0.2 ~ 0.3cc, change the 1mm larger size stopper continuously.

※ Speed : 80RPM



Procedure



1. Get an accurate X-ray image of the posterior maxillary region to assess the residual bone height.
2. After checking the residual bone height, make your osteotomy starting with a point (guide) drill then choose a proper S-reamer drill in diameter and 1mm shorter than the estimated bone height. Decide the final drilling diameter based on bone density.
3. For safety, drill only 1mm more in each step using 1mm longer stopper.
4. Select S-reamer's diameter considering the fixture's diameter and insertion depth in sinus. ※ **Diameter Selection (Based on implant insertion depth in sinus)**

▶ **Regular fixture**

1mm ~ 3mm insertion : $\varnothing$ 2.4mm

More than 4mm insertion : $\varnothing$ 2.8mm

▶ **Wide fixture**

1mm ~ 3mm insertion : $\varnothing$ 3.2mm

More than 4mm insertion : $\varnothing$ 3.6mm

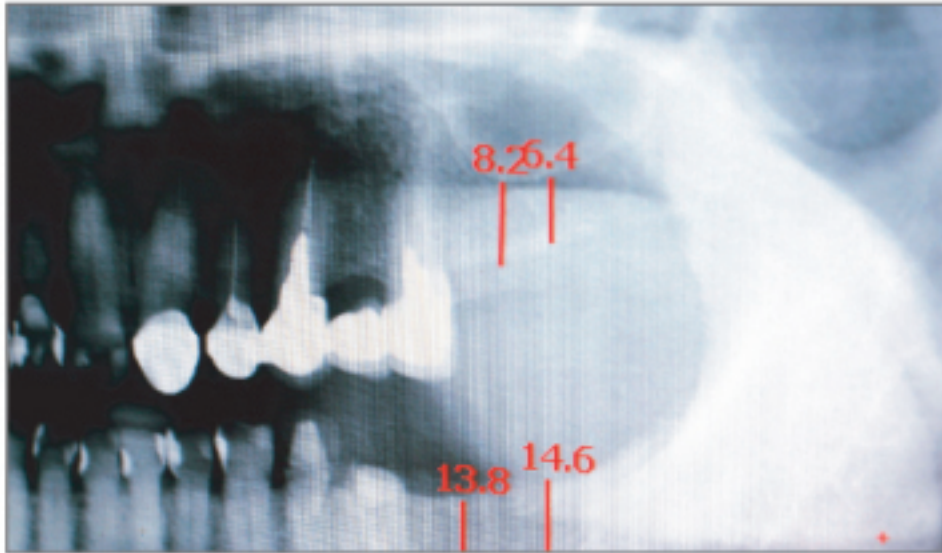
5. If the sinus inferior cortical wall does not perforate until the stopper reaches to the crestal bone, change 1mm longer size stopper and drilling continuously.
6. You can feel perforating in inferior cortical wall and then measure the residual bone height with depth gauge. When you hang on the end of depth gauge in sinus wall inside, you can check the detailed residual bone height.
(Caution: Do not insert the depth gauge maximum 1mm in sinus.)
7. When the inferior wall is perforated, close the patient's nose and then make them blow out to check the membrane status. The soft bone (such as DFDBA bone) should be inserted first. If a lot of bone insertion is required, you may use the hard bone as well as the soft bone.
8. Insert the bone with bone carrier and stopper mounted bone condenser.
9. Insert the bone volume based on membrane elevation height. if you want to elevate the membrane about 1mm, you may need 0.1cc volume of bone grafting material. However, it depends on how effectively you can transfer the graft to the osteotomy.

- [illegible]



Case Report

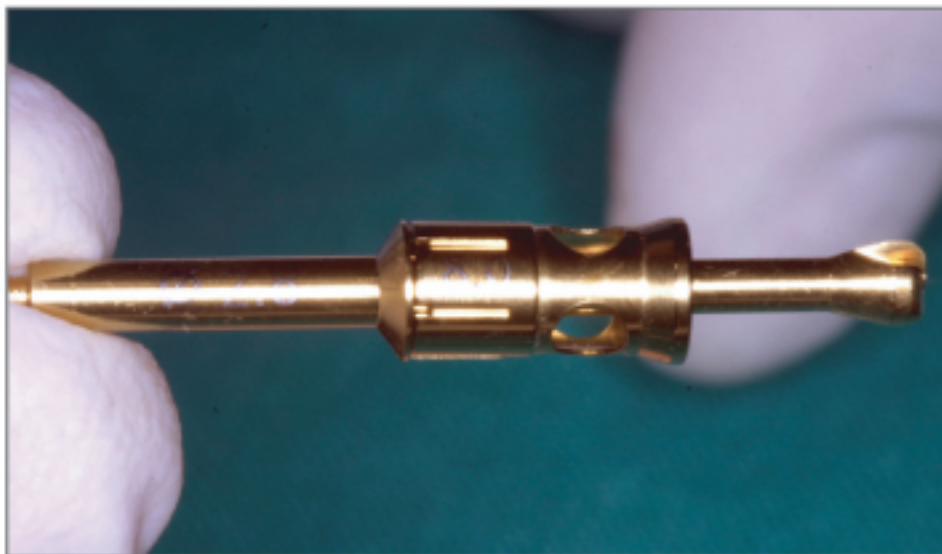
Case 1. (Crestally Bone Added Case)



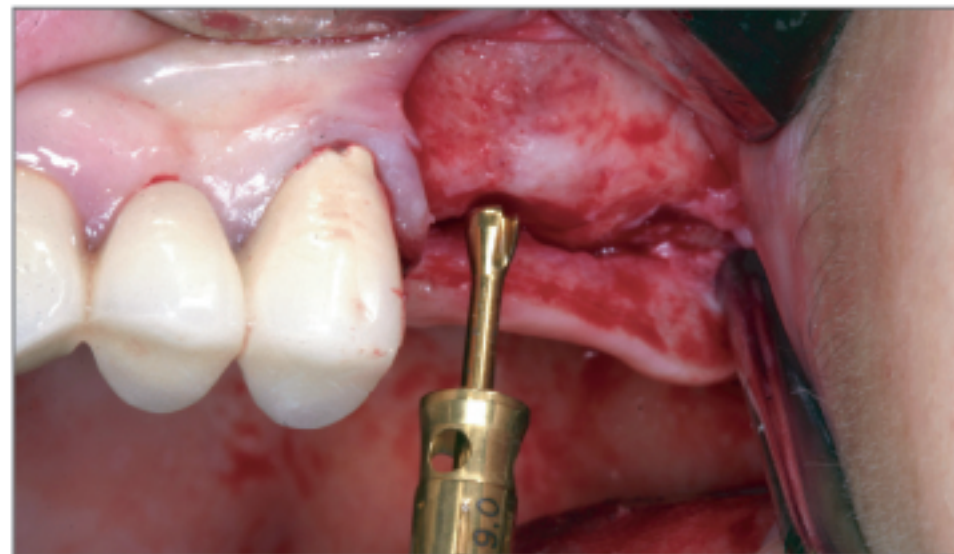
1. The residual bone heights of #26 and 27 were estimated as 8.2mm and 6.4mm respectively. It was required the membrane to lift up about 4 ~ 6mm and to place $\phi 5.0 \times 11.5$ mm in length implant (wide body).



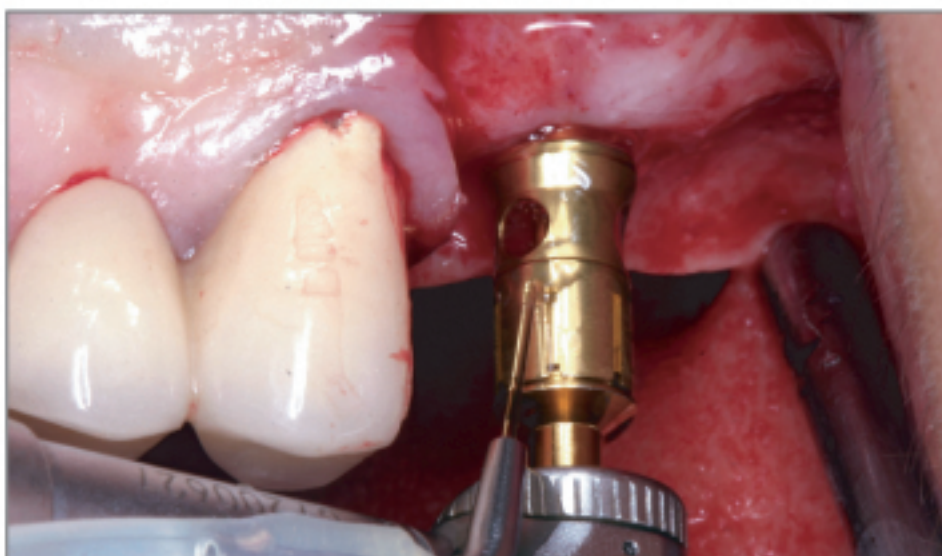
2. Drill 1mm shorter than residual bone height until 3.8mm drill in diameter.



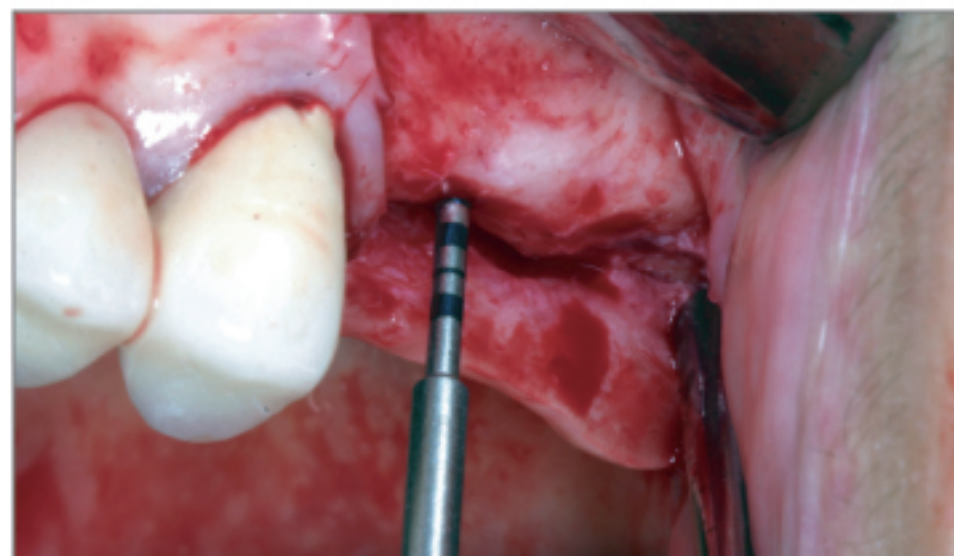
3. Mount 1mm longer stopper than the drilling length in step 2 on the $\phi 3.6$ mm S-reamer.



4. If the inferior cortical wall does not perforate until stopper reaches to crestal bone, drill again using the 1mm longer stopper mounted on S-reamer.



5. Use the drilling speed at 800 ~ 1,200 rpm with copious irrigation. Stopper provides you the safe operation.



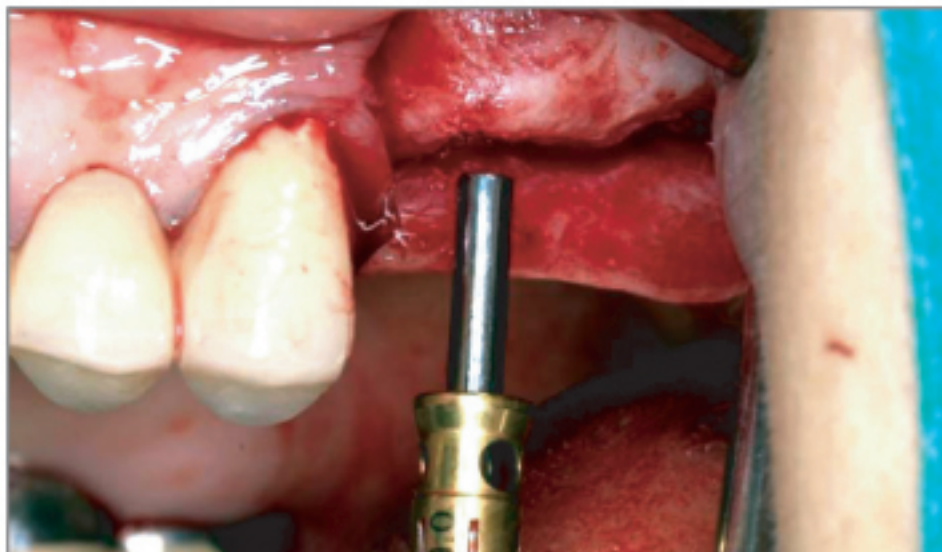
6. membrane status and residual bone height can be checked by depth gauge. Do not insert the depth gauge more than 1mm in sinus.

Case Report

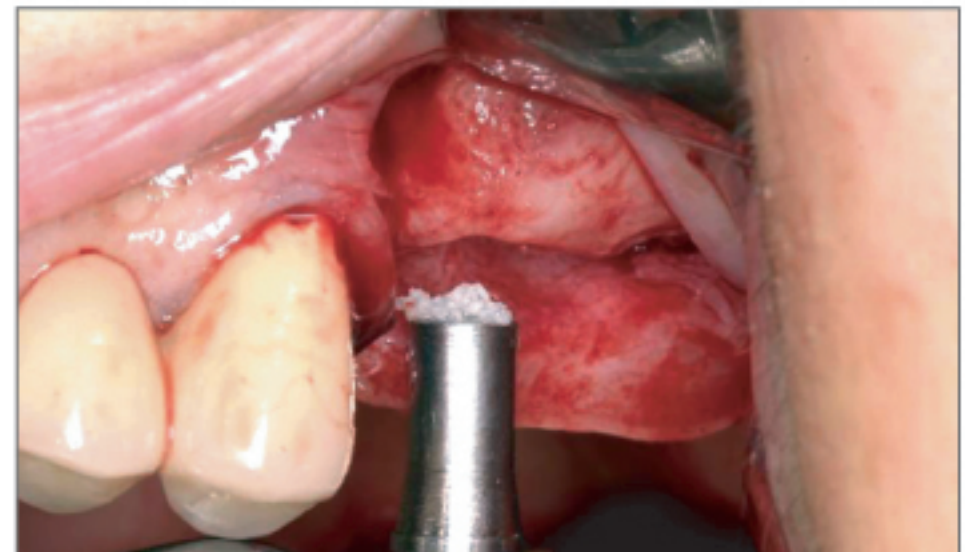


7. As the sinus membrane is lifted up about 4 to 6mm to an apical direction, the fixture specification is $\varnothing$ 5.0 in diameter x 11.5mm in length. Make sure to use the correct bone volume and lift up the appropriate membrane height as planned. (Calpore : β TCP 60% + HA 40%).

8. Insert the bone material in the bone carrier.



9. Insert the bone in the hole with the bone carrier.



10. Pack the bone in sinus with stopper mounted on bone condenser. The stopper size should be same as the residual bone height.



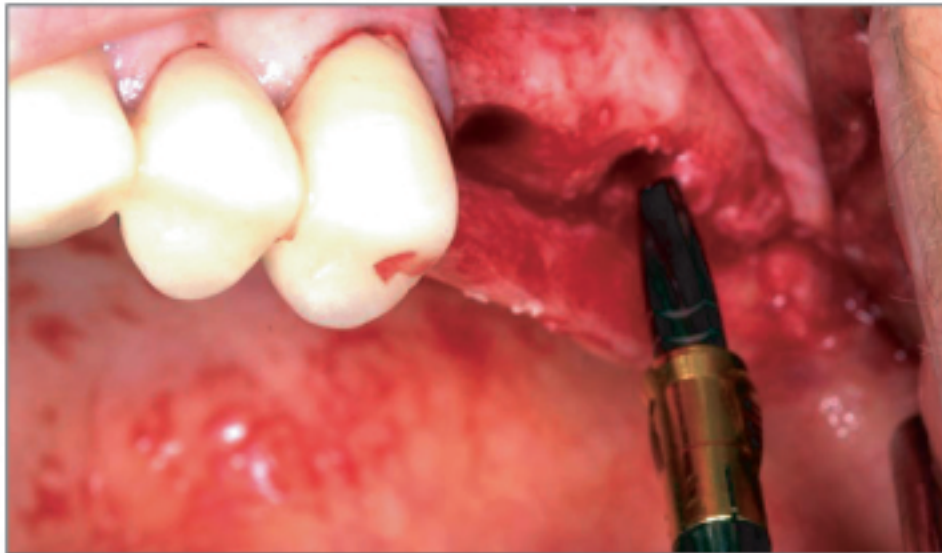
11. Recommend to use the bone spread with stopper in order to spread the inserted bone laterally at every 0.2 ~ 0.3cc bone packing.



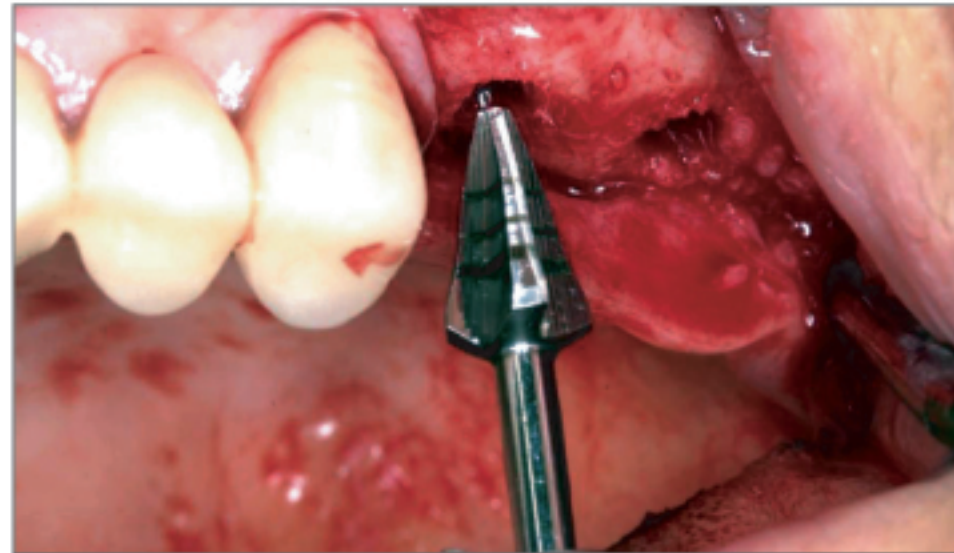
12. More than 3mm membrane elevation is required at first bone spread using. At every 0.2cc ~ 0.3cc bone insertion, required to spread the bone in sinus.



Case Report



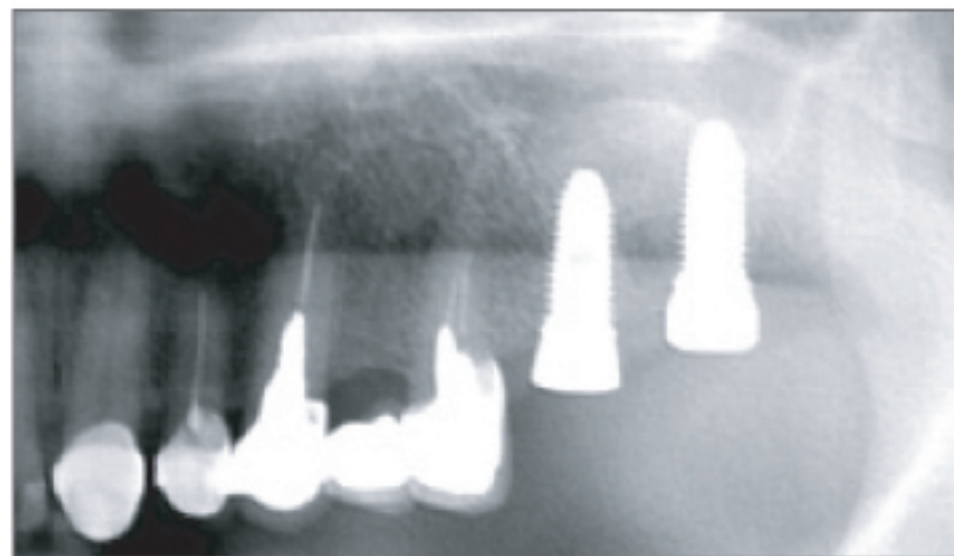
13. After finishing the bone insertion up to expected membrane elevation height, start the final drilling.



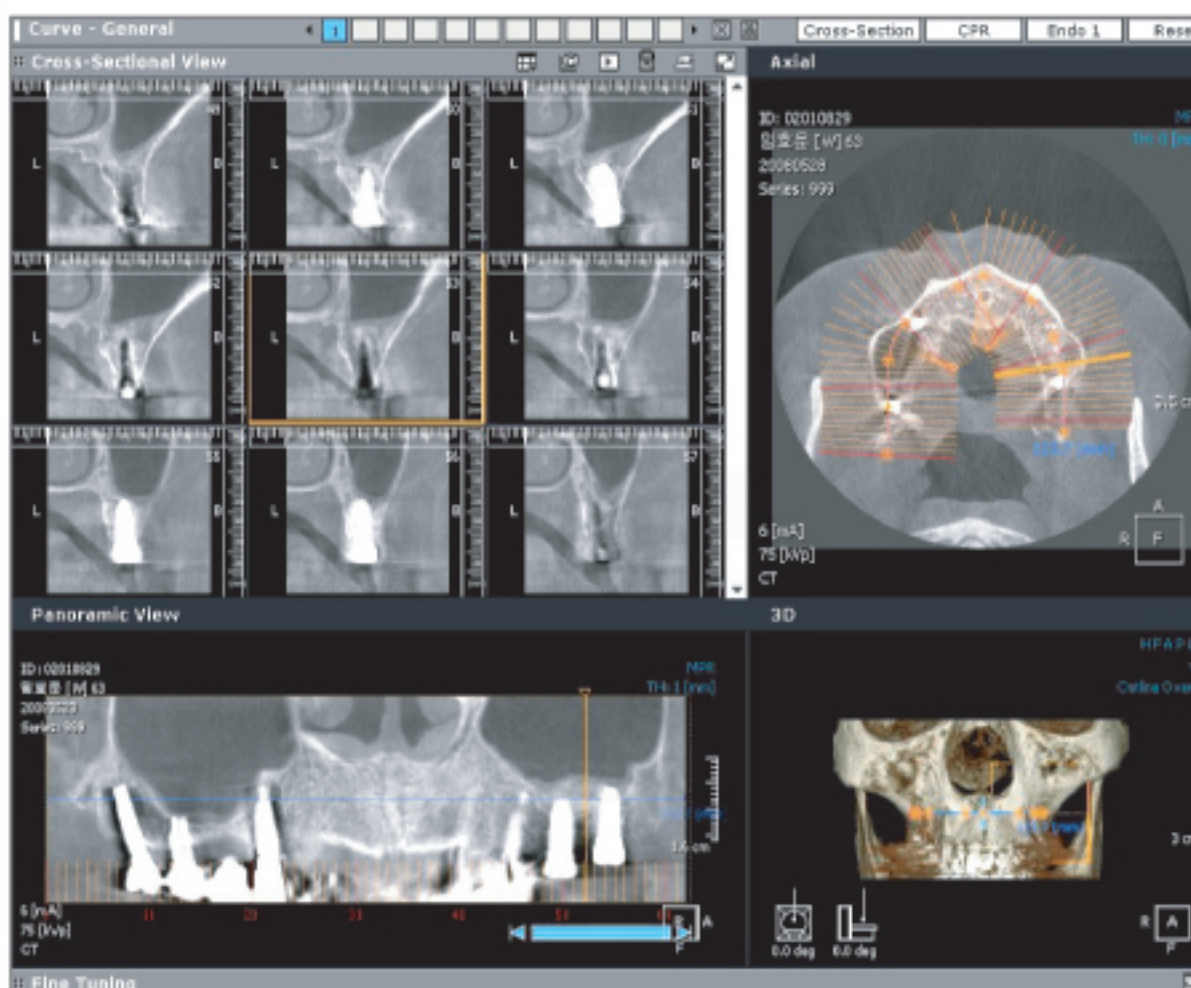
14. If the crest cortical bone density is the D2 level, the counter sink is needed.



15. Place a $\varnothing 5.0 \times 11.5\text{mm}$ SinusQuick Implant to obtain the initial fixation and self-compaction on D4 bone.



16. You can check the inserted bone status around fixtures through X-ray image.

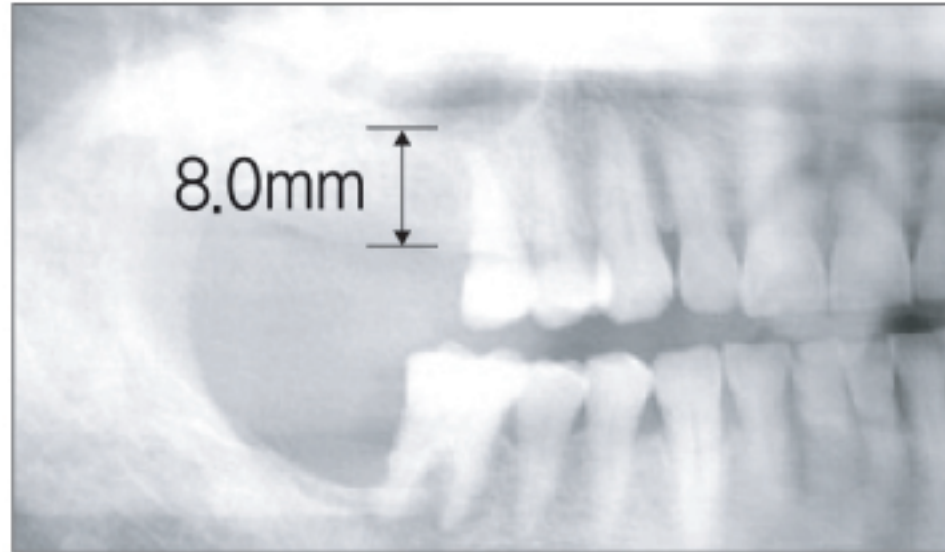


17. Using the crestal approach to sinus, the inserted bone is well-positioned around fixtures obtained from the CT image.

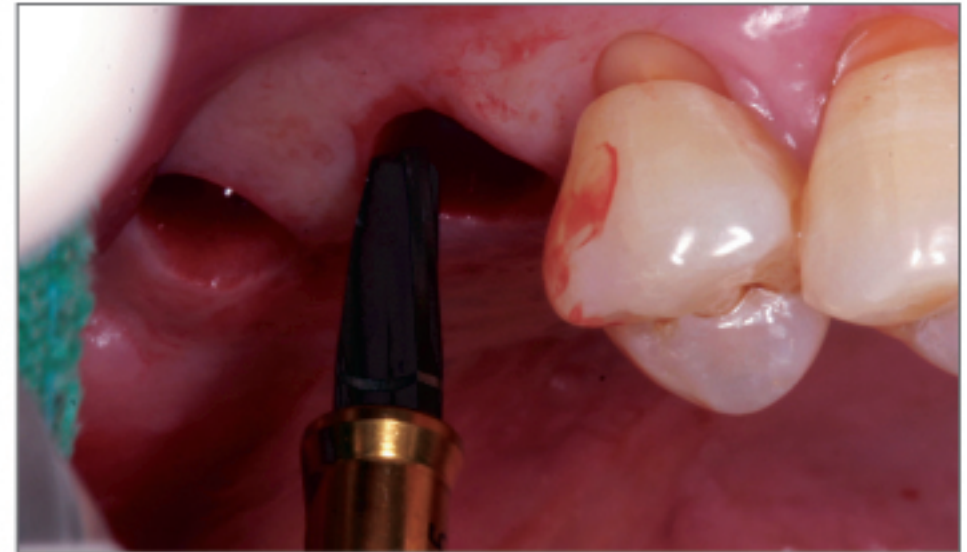
Case Report



Case 2. (Misreading on X-ray image)



1. According to X-ray image, the residual bone height was 8.0mm on #16 and 17, the $\varnothing 5.0$ in diameter x 10mm in length fixture will be placed.



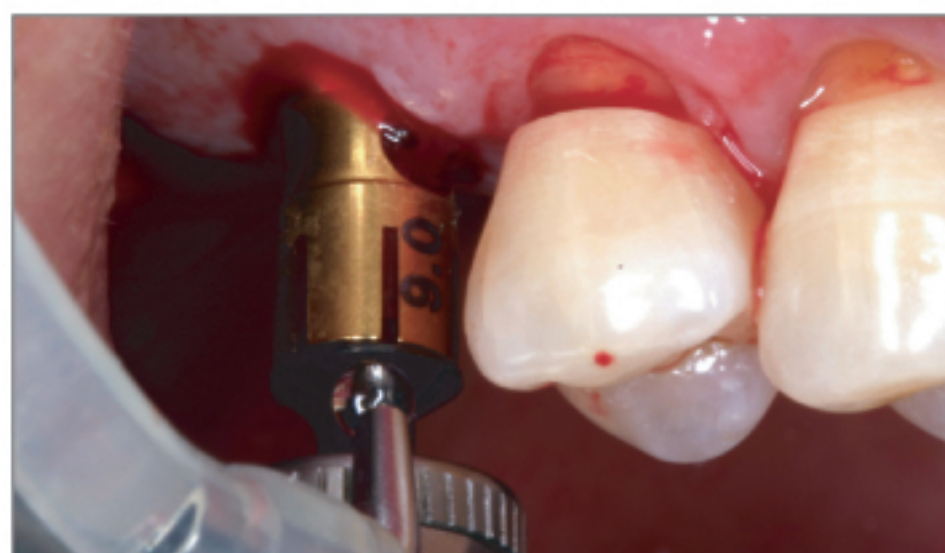
2. Drill 1mm shorter than residual bone height. (Flapless surgery case)



3. For the $\varnothing 5\text{mm}$ wide body fixture, it is recommended to expand the hole by up to $\varnothing 3.8\text{mm}$ drill for D3 bone density.



4. As the residual bone height was 8.0mm, the 8.0mm stopper was required to mount on S-reamer. Considered the fixture diameter $\varnothing 5.0 \times 10\text{mm}$ and selected $\varnothing 3.2\text{mm}$ S-reamer to make a hole with 8.0mm stopper.



5. The inferior cortical bone was not perforated with 8.0mm, 9.0mm and 10.0mm stoppers. This means that the residual bone height is more than 10.0mm and it seems to be misread through the X-ray image.



6. The inferior cortical bone was perforated with 11.0mm stopper. Even in case of the misreading of X-ray image, the stoppers provide you the safe surgery if you use the sinus approach step by step.



Case Report



7. For implant placement, perform the final drilling. To obtain ideal initial fixation, use the 1.5mm longer length fixture as the residual bone height is 11mm. ($\varnothing$ 5.0 x 11.5mm.)



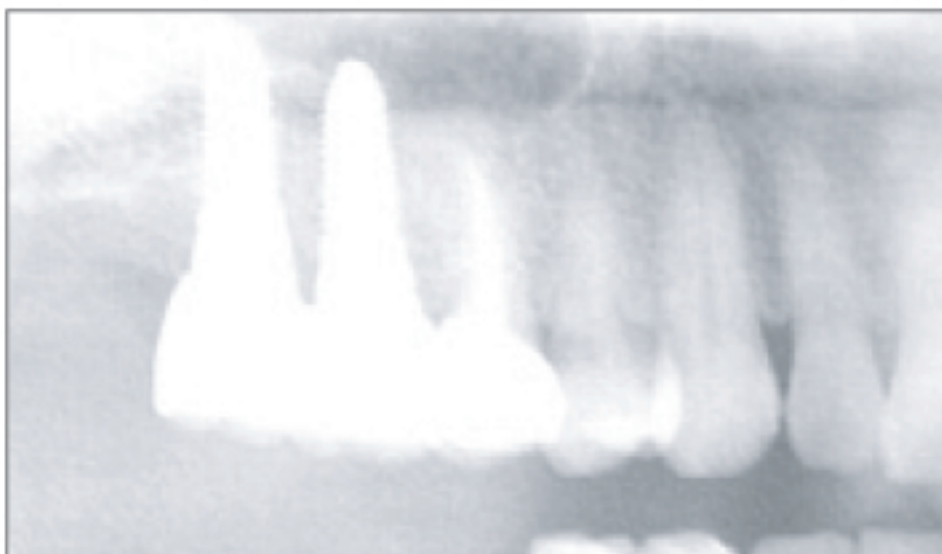
8. The fixture was placed without bone grafting.



9. Even the bone density was D3, D4, SinusQuick fixture was obtained the idea initial fixation with 40Ncm torque.



10. After obtaining the ideal fixation, connect a healing abutment on fixture.



11. With wide implant and ideal initial fixation, anytime loading can be performed.



12. The prosthetic was completed 2 weeks later. This demonstration shows that the misreading of X-ray can be covered by 1mm difference of 12pcs stoppers with S-reamers.

