

A retrospective study of Snucone implants: Clinical and radiographic results

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As osseointegration implant has become one of the important treatment methods to treat partially and fully edentulous patients, various implant systems have been developed by several manufacturers. However, there is few studies on Korean implant when compared to foreign implant. And it is true that people vaguely disbelieve Korean implant relatively. Therefore, these authors have analyzed clinical results of 5 years about 41 implants targeting the total 23 patients who had AF fixtures (Snucone, Korea) implanted in this clinic. The analytical results have found that the survival rate is 100% and the average marginal bone loss is measured -0.62 ± 0.69 mm. And the diameter and length which were most used are 4.3 mm (61%) and 8.0 mm (46.4%) respectively. It is thought that this study needs to continue to be studied for a long time to come as the one which analyzed the clinical results gotten by monitoring the condition for 5 years after implant placement. (JOURNAL OF DENTAL IMPLANT RESEARCH 2015;34(1):22-26)

Key Words: Snucone imlant, Survival rate, Retrospective studies, Dental implant

INTRODUCTION

Since implants were designed by Brånemark, forms and surface treatment of dental implants have continued to develop variously¹⁾. Since implants were first applied to fully edentulous patients, they are now applied to partially edentulous patients and treatment of single-tooth loss as the range increased. As a result, dental implant has become one of important options in restoration of tooth loss and has made a great contribution to development of dental sciences.

Dental implants include the advantages that restoration of defects is possible without the teeth preparation around tooth defects, they can endure higher occlusal loading than removable dentures, and masticatory efficiency is high. However, dental implants include the disadvantages that implant placement procedures are required, the placement can fail if bone density or bone volume is improper, and it should take so long from implant to prosthetic rehabilitation. It is true that implants are

now forming an ever-greater part of the dental and clinical areas because of their own advantages mentioned before despite these disadvantages.

Unlike the past situations that we could not help depending on foreign implants for a long time, various Korean implants of good quality have shown the clinical results which are not behind foreign implants as they have been developed in Korea. However, there are few reports about the clinical results and safety of Korean implants as the studies are more insufficient than foreign implants. Eventually, evaluation of Korean implants was not done and people got to disbelieve them vaguely.

Accordingly, the author reports the clinical results gotten by monitoring the condition over time for about 5 years targeting patients who had AF fixtures (Snucone, Korea) implanted in this clinic.

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MATERIALS AND METHODS

1. Research subjects

It was intended for 23 patients who have implants placed in this clinic from Jun. 2009 to Dec. 2009. The number of placed implants was 41. AF fixtures (Snucone, Korea) were used in all the implant procedures.(Fig. 1) Snucone's products were all used for abutment used in oral rehabilitation.

2. Research methods

Patients' gender, age, implant placement position, implant diameters and length, bone graft, periods from implant to secondary surgery, change of marginal bone around implants between the time that implants are placed and the time after 5 years, and the survival rate of implants were analyzed. The height of marginal bone around implants were measured in the panorama pictures (Vatech, Korea) taken in the days that implants were placed and 5 years after implant placement. For change of the marginal bone height around implants, each change of mesial sides and distal side was measured and the average was calculated.

RESULTS

1. Patients' gender

Among the total 23 patients, men were 13 persons (56.5%) and women were 10 persons (43.5%).(Fig. 2)

2. Patients' age

Among the total 23 patients, the person who is in 20s was one (4.3%), the persons who are in 30s were 3 (13.1%), the persons who are in 40s were 3 (13.1%), the



Fig. 1. AF fixture (Snucone, Korea).

persons who are in 50s were 7 (30.4%), the persons who are in 60s were 9 (39.1%).(Fig. 3)

3. Implant placement position

Among the total 41 implants, 18 implants (43.9%) and 23 implants (56.1%) were placed in the upper and lower jaws respectively. 3 (7.3%) were implanted in the anterior teeth of the upper jaws, 3 (7.3%) in the premolar teeth of the upper jaws, 12 (29.3%) in the molar teeth of the upper jaws, 2 (4.9%) in the anterior teeth of the lower jaws, 6 (14.6%) in premolar teeth of the lower jaws, and 15 (36.6%) in molar teeth of the lower jaws(Table 1).(Fig. 4)

4. Diameter and length

For placed implants' diameter, 9 (22.0%) of 3.8 mm, 25 (61.0%) of 4.3 mm, and 7 (17.0%) of 4.8 mm were used.

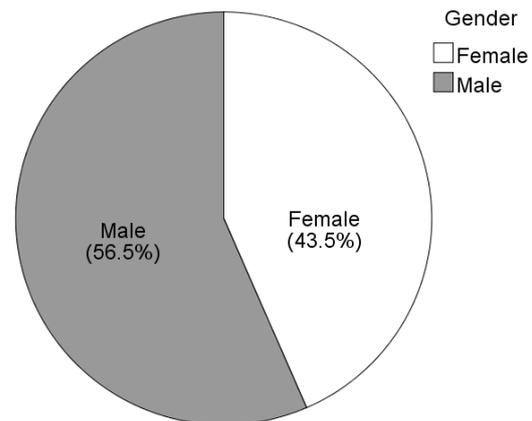


Fig. 2. Gender distribution.

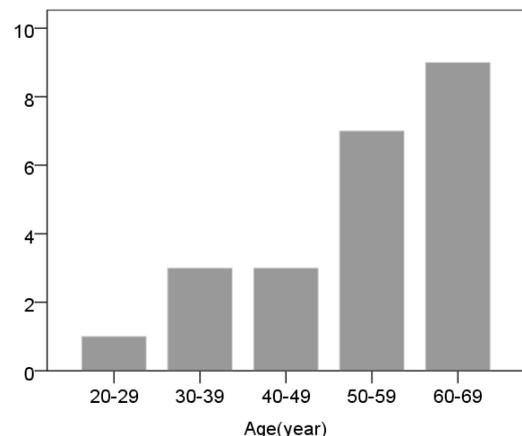


Fig. 3. Age distribution.

Table 1. Implant placement position

Position	Fixtures	Position	Fixtures
12	1	33	1
14	1	34	1
15	2	35	4
16	5	36	5
17	3	37	3
21	1	43	1
22	1	44	1
26	3	46	5
27	1	47	2
Total	18	Total	23

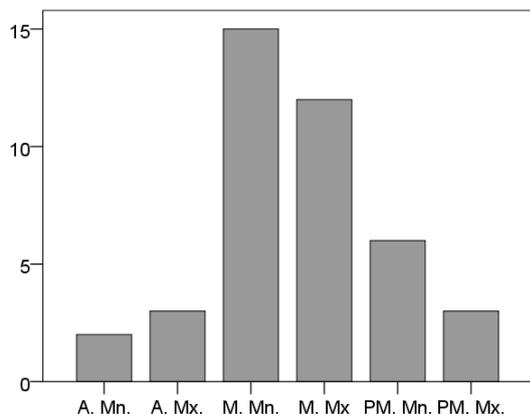


Fig. 4. Implant placement position (A: anterior, PM: premolar, M: molar, Mx: maxilla, Mn: mandible).

And for their length, 9 (46.4%) of 3.8 mm, 16 (39.0%) of 10.0 mm, and 6 (14.6%) of 12.0 mm were used (Table 2). (Fig. 5, 6)

5. Bone graft

Among the total 41 implants, the cases that bone graft is done are 13 (31.7%), the cases that maxillary sinus floor elevation is done are 4 (9.75%), and the cases that alveolar bone graft is done are 9 (21.95%).(Fig. 7)

6. Periods from implant placement to secondary surgery

For the periods from implant placement to secondary surgery, the average period is 4.8 months and the shortest period is 3 months, and the longest period is 8.5 months.

7. Change of marginal bone around implants

Change of marginal bone in panorama pictures of the

Table 2. Diameter and length

Diameter (mm)×Length (mm)	Fixtures
3.8×8.0	2
3.8×10.0	3
3.8×12.0	4
4.3×8.0	10
4.3×10.0	13
4.3×12.0	2
4.8×8.0	7
Total	41

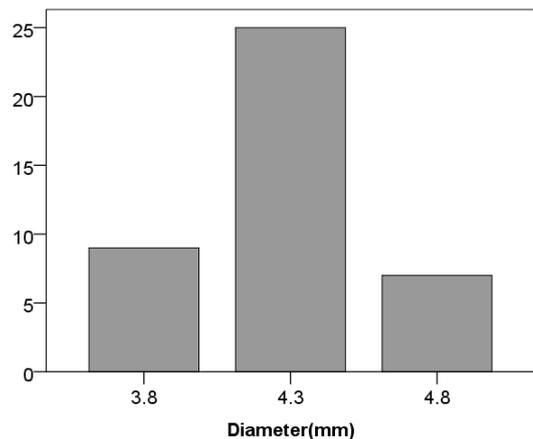


Fig. 5. Diameter.

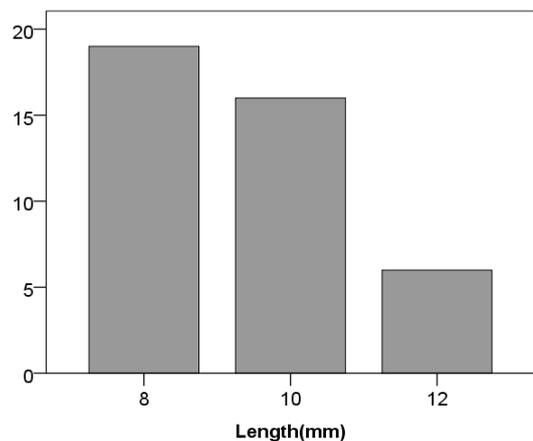


Fig. 6. Length.

implant date and panorama pictures when patients visited the clinic was analyzed to monitor the condition over time. For the period to monitor the condition over time, the shortest period is 4 years and 9 months and the longest period is 5 years and 11 months. For the height of marginal bone, the length from the fixture platforms to alveolar

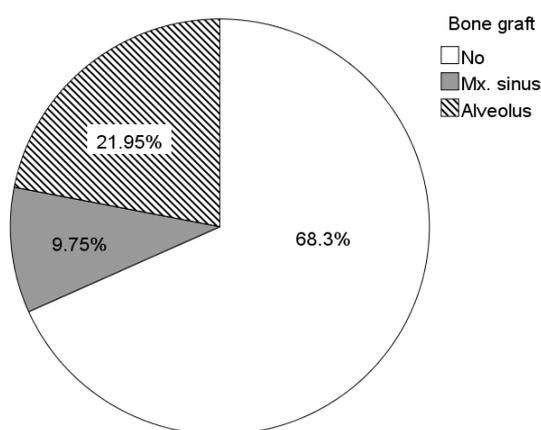


Fig. 7. Bone graft.

crest was measured in each mesial side and distal side. Change of marginal bone in mesial and distal sides was calculated based on the measurement values. The average loss of marginal bone around implants during the period to monitor the condition over time was -0.62 ± 0.69 mm.

8. The survival rate of implants

The total 41 implants were placed and there were no any cases that implants were removed due to occurrence of mobility, loss, or fracture.

DISCUSSION

Since implants were introduced to dental science, they became one of the important treatment methods which restore teeth loss as the results of the long-term studies and successful clinical application. Several research results have found that implants' differences in surface treatment and design have an effect on the clinical results and various manufacturers' implant systems have now been used. For AF fixtures (Snucone, Korea), design of tooth root forms and internal connection methods are applied as the product that surface treatment is done by the SLA method. SLA surface treatment is one of the most widely used implant treatment methods and is known to is favorable for improvement of implant biocompatibility and formation of bone around implants²⁾. As there was no any implants which failed in the total 41 implants analyzed in this study, the 100% success rate was shown. R. Lazzara et al. reported that the success rate of 93.8% in

the upper jaws and 97.0% in the lower jaws in the study of 1,969 3I implants for the last 5 years³⁾. Jan L. Wennstrom et al. reported that the success rate of 97.7% in the study of 45 Astra implants (Astra tech, Sweden) for 5 years⁴⁾. Bilge GokcenRohlig et al. reported that the success rate of 91.0% in the upper jaws and 97.8% in the lower jaws in the study of 146 ITI implants for 5 years⁵⁾.

The average loss of marginal bone analyzed through the radiographic examination in this study was -0.62 ± 0.69 mm for 5 years. Per Astrand et al. conducted the comparative study on marginal bone loss of Astra (Astra Tech, Sweden) and Brånemark implants (Nobel Biocare, Sweden) for 5 years⁶⁾. For the marginal bone loss, Astra implants showed -1.74 ± 0.45 mm and -1.06 ± 0.19 mm in the upper and lower jaws and Brånemark implants (Nobel Biocare, Sweden) did -1.98 ± 0.21 mm and -1.38 ± 0.17 mm in them.

The fixture diameter and length which are most used in implant are 4.3 mm (61%) and 8.0 mm (46.4%) respectively. For th most implanted parts, the molar teeth in the upper jaws are 12 (29.3%) and the molar teeth in the lower jaws are 15 (36.6%).

It is thought that this study needs to continue to be studied for a long time to come as the one which analyzed the clinical results gotten by monitoring the condition for 5 years after implant placement.

CONCLUSION

The author draws the following conclusion by analyzing the clinical results of about 5 years about 41 implants targeting the total 23 patients who have AF fixtures (Snucone, Korea) in this clinic.

1. Implant's survival rate was 100%.
2. The average marginal bone loss was not higher than that of other reports as it is -0.62 ± 0.69 mm.
3. The diameter and length most used in implants were 4.3 mm (61%) and 8.0 mm (46.4%) respectively.

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