

A postscript

One month implant which becomes one`s own tooth

Lasts forever

A phrase 'one month implant' is gradually becoming the brand as a proper noun but not as a common noun.

This tendency shows that the implant has helped many people and has good reputation to become the implants as general product.

Generally, implant is a foreign matter to the body, but the one month implant has characteristic that has bio affinity power to become a part of the body to not seen as a foreign matter by the body.

In short, the implant integrate with jaw bone in one month and work as one`s own tooth.

As a person who is engaged in this study from the beginning, I truly believe that this is a miracle.

The research and development of the one month implant have begun more than 30 years ago.

At that time, dental implants have started to generalize at last.

At the same time, several problems have started become remarkable.

These problems were solved little by little, therefore along with this, support of dental implant from the nation has begun to increase.

Yet, there were problems that had not been solved.

The problems were, treatment time requires about six month from the first implant surgery to second surgery and necessity of two surgical operations.

This is a big stress from the viewpoint of patients.

For that reason, research and development have started in order to reduce the stress of treatment for patients, to be able to finish procedure with one simple surgery, and to shorten treatment time to be about one month.

I was a student at Oral-Maxillofacial Surgery, Faculty of Medicine, The University of Tokyo but returned to Tokyo Medical and Dental University to take part in the research and development for the project.

The important point is, in order to shorten the treatment time drastically, we knew that existing materials would not solve the problems.

If we used that, the treatment time would be the same, six months.

Therefore, we set our goal for the study to produce 'Bone' artificially which is the material of the body.

It meant that if we can produce material that is made from the same material as bone, it should not be a foreign matter to the body.

Thus, we have succeeded in composing HA artificially which has same ingredient of bone.

Therefore, we used titanium as a core material for implant to secure the strength and plasma sprayed to it and conducted a test on animals.

However, implants had fallen out in short time.

What was the reason for the problem?

We found out that pH was supposed to be neutrality and around at seven, but it was increased to nine.

As we investigate the case further, we found that although we sprayed pure hydroxyapatite, the hydroxyapatite included impurities.

For example, there were tricalcium phosphate, calcium oxide, and others.

These substances were dissolved in the body at early stage and increased pH to become a factor of fallen out.

We have uncovered the factor why impurities occurred and developed hydrothermal treatment technique to solve the problem.

We found out that structure of hydroxyapatite breaks by the plasma spraying at a high temperature of over 10,000°C.

Therefore, we used tricalcium phosphate which is the precursor of hydroxyapatite as spray materials, and produced pure hydroxyapatite by the hydrothermal treatment after the spray.

Moreover, this HA coating makes crystal orientation and bonding strength of bone stronger.

As a result, we have solved the fallen out problem.

That led us to develop the innovative implant which integrates with bone tissues of the body.

This is how 'one month implant' was born.

This implant uses one piece one time method which only requires one surgery.

Characteristics of one month implant are as following.

1. Integrate with bone by osseointegration and function as one's own tooth in one month.

2. Implant placement is possible even for the immediate tooth extraction if initial fixation is available.
3. Effective for many difficult cases.
4. Realized to simplify the surgery by the structure of spiral cylinder.

The survival rate of the one month implants which I have used for treatment was about 97 percent.

For example, regarding 139 people with 329 the one month implants which I treated from October 2006 to December 2008 for about two years and two months, initial survival number of implants were 322 and survival rate was 97.87 percent. I treated the other five people with seven implants, therefore actual survival rate was 100 percent.

This is the epoch-making event from the viewpoint of former implants.

I believe that we can contribute significantly to people in this world with the one month implant.

On behalf of authors.

Dr. Yoshichika Tsutsumi