

Unique features of AQB Implants – A new generation of dental implant

AQB Implant		Titanium Implant	
1	<p>A living implant (Neo-bioactive AQB implant)</p> <p>Novel bone is generated from the implant surface in 1 - 2 weeks [Refer to detailed description (PowerPoint) attached]</p>		<p>A foreign implant (Non-bioactive titanium implant)</p> <p>Titanium does not act to stimulate bone growth</p>
2	<p>Incorporated into the jawbone as part of the structural component</p> <p>Novel bone is also generated from the jawbone to bond biologically and chemically - becoming integrated as a part of the jaw.</p>		<p>Titanium itself cannot bond with the bone biologically [Refer to *Materials Transactions, Vol.43, No.10 (2002) p2494 - 2501]</p>
3	<p>Quick recovery</p> <p>Patients are able to start chewing after 1 - 2 months of surgery.</p>		<p>Slower recovery</p> <p>A patient must wait 5 - 6 months till they can chew.</p>
4	<p>Applicable to a wider patient profiles</p> <p>With the special characteristic of AQB implant - generation of novel bone - it can be applied to a wider variety of jaw profiles.</p> <p>AQB implant can be applied to those patients profiles who would usually require application of bone filling agents:</p> <ul style="list-style-type: none"> ➤ low bone density, including diabetes patients (though special care should be taken with more severe cases) ➤ narrow alveolar crest <p>Additionally, in case of implanting to the mandibule, a short implant (6mm long with 5 mm diameter; 6/ 8 mm fixture length) can be applied as an option.</p>		<p>Limited range of patient profile</p> <p>Titanium cannot induce generation of new bone therefore limits the number of cases that it can be applied to by itself.</p>
5	<p>One time surgery</p> <p>Patient stress and treatment expense is significantly reduced. (Expense by roughly a half)</p>		<p>Multiple surgeries</p> <p>Two-piece type is the conventional type in use today. This requires surgery at least twice.</p>

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6	<p>Simple impression taking Same as for natural teeth</p>	<p>Complicated impression taking Taking impression especially for the maxilla is troublesome.</p>
7	<p>Reducing the number of potential errors - Simple surgical procedures and short operation time ➤ Surgery can be completed in 7 minutes. 100% success rate is possible by complying fully with the manual.</p>	<p>Complex surgical procedures increasing the number of potential errors</p>
8	<p>Significant reduction in the number of failed cases - Compared to two piece type: Our one-piece type requires no connecting screw. This eliminates the common limitations encountered with the two-piece type such as: ➤ Screw loosening ➤ Implant body fracture from applied pressure – Because of novel bone generation Implant body loosening out of the socket is uncommon since it is integrated rapidly into the jawbone.</p>	<p>Faced with the dilemma of two-piece type implant The structural design of two-piece type predisposes to the typical problems of: ➤ Screw loosening ➤ Implant body fracture from applied pressure – Because it is non-bioactive There is higher probability of the implant body loosening out of the socket due to lack of implant integration into the bone.</p>
9	<p>AQB has developed with the aim to provide its users with added value AQB implant is unique in that it stimulates novel bone generation from the implant body itself, thus achieving to become one's own tooth.</p>	<p>Titanium implant remains a foreign object in the oral cavity predisposing the patients to potential hazards.</p>

***Thus, amorphous structures are formed at the interface between the titanium and the bone, that is, there is no direct contact between titanium and bone.’ (p2495)**

Bio-Functionalization of Titanium Surfaces for Dental Implants

Yoshinari *et al.* Materials Transactions, Vol.43, No.10 (2002) p2494 – 2501

How to achieve 100% success with AQB implant

Primarily

- ① Avoid incorporating the surgical procedures used for titanium implant
High success rate can be achieved by conform to the AQB manual
- ② Increase patients' trust
Implant treatment can now be applied to those who were not suitable in the past.
By meeting the needs of the patients, it can boost patients' trust in your practice.
- ③ Avoid excessive expansion of the occlusal surface area of the crown.
- ④ The recrystallized hydroxyapatite (HA) coating should be fully submerged into the jawbone for the success of implant treatment. Otherwise it can cause treatment failure due to infection.

Important points to follow during surgery

Implant failure can be avoided by full compliance to the following points:

- ① Avoid thermal injury of the bone
It is crucial to limit the heat generated to prevent necrosis of the bone
Follow the steps below:
 - a) Drill under sufficient amount of saline solution
 - b) Drill intermittently
 - c) Limit the drill revolution to 400 – 800 rpm
 - d) Only use drills and reamers with sharpened blades
 - e) Apply suitable drilling pressure
- ② Suitable Initial stability
The insertion pressure should not be too tight or too loose
- ③ Complete insertion of the recrystallized HA coating
By fully submerging the recrystallized HA coating, the risk of infection can be minimized.
- ④ Suture the mucoperiosteal flap tightly
Intercept and minimize the potential route of infection.
- ⑤ Secure a minimum clearance of 3 mm between the occluding teeth
 - To avoid premature contact
 - To avoid it being subjected to lateral pressure

Types and indications of AQB

AQB types can be chosen for all areas of the mouth (regardless of whether it is for the maxilla, mandibular, anterior or molars) by following the steps below:

(1P, standard one piece type; TP, T-type; 2P, 2 piece type)

Sufficient amount of bone, both in terms of quality and quantity	1P TP is also applicable
Insufficient amount of bone, both in terms of quality and quantity	TP
For a case that lacks multiple teeth (partially or fully edentulous)	2P 1P, TP are also applicable
For overdenture cases	2P

Basic rules that apply when placing prosthetics

- ① In principle, one crown should be placed per implant body
- ② Placement of prosthesis for cases of multiple implants should also be done separately.
The adjacent crowns can be connected with composite resin once the occlusion has been established.
In cases where three or more implants are placed adjacent to each other, coupling of the crowns is possible.
In case of placement of 3 implants, one connected crown and one single crown can be placed.
- ③ Crown design should apply what is stated in the basic rules.