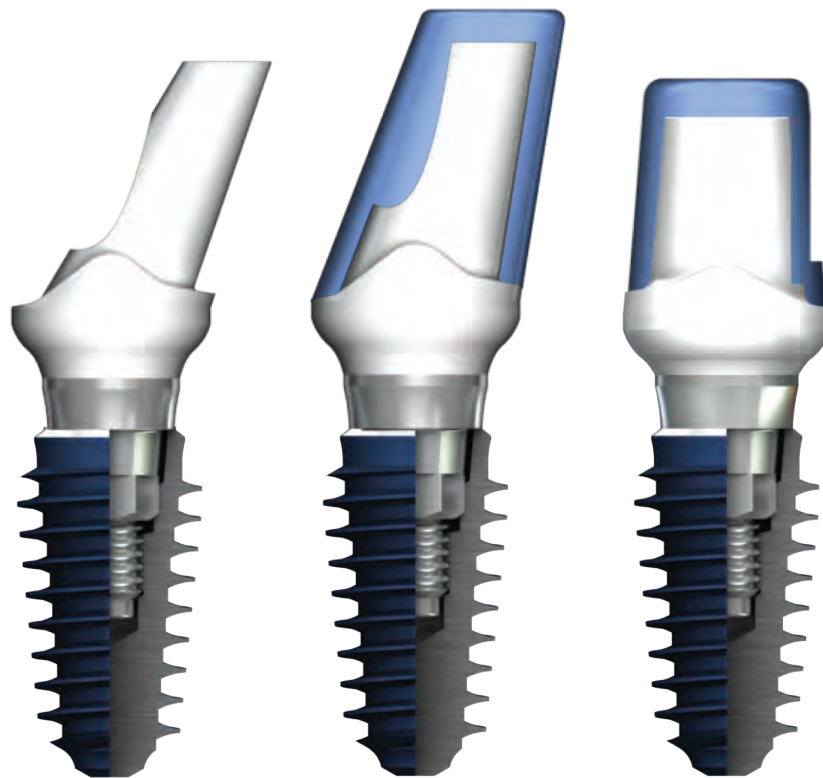


Fuse Abutment™

An Excellent Alternative for Immediate loading



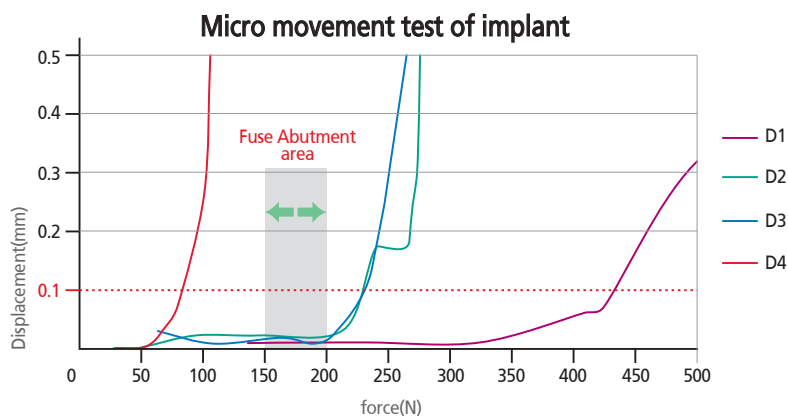
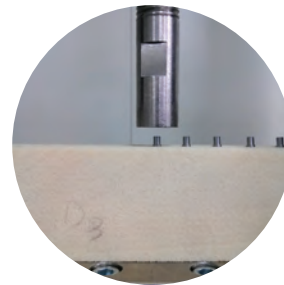
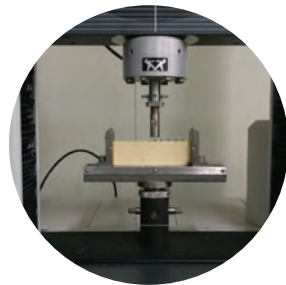
Rationale of Fuse Abutment™

➤ In 1992, Brunski JB. reported that an implant may have higher possibility of fibrous-intergration than osseointegration between bone and implant surface when movements more than 100µm occurs on the fixture during osseointegration period. (John B. Brunski, Biomechanical factors affecting the bone-dental implant interface. Clinical Materials, Vol. 10, 153-201) Therefore, the implant is needed to be protected not to move when immediate loading is carried out. However, it is not easy to manage loading on the fixture, even when we use a resin temporary with a titanium cylinder.

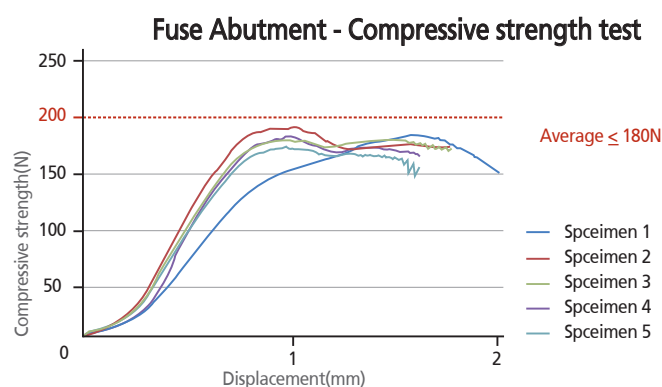
It was thought that it's partly because of the metal component of temporary cylinder, which can deliver excessive forces to the fixture. This is one of the reasons which make clinicians hesitate the immediate loading procedure. So it is necessary to develop a special temporary cylinder. It should be broken under the force which can lead fibrointegration or failure of osseointegration to protect the fixture. and it will be preferred if it is easy to make a temporary crown on this particular temporary cylinder.

We tried to measure the force causing movement of 100µm on a fixture which was placed securely into adequate density of bone without defect.

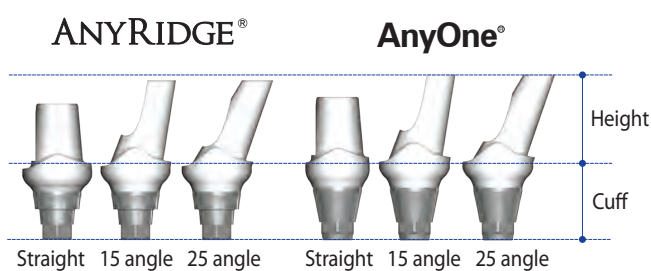
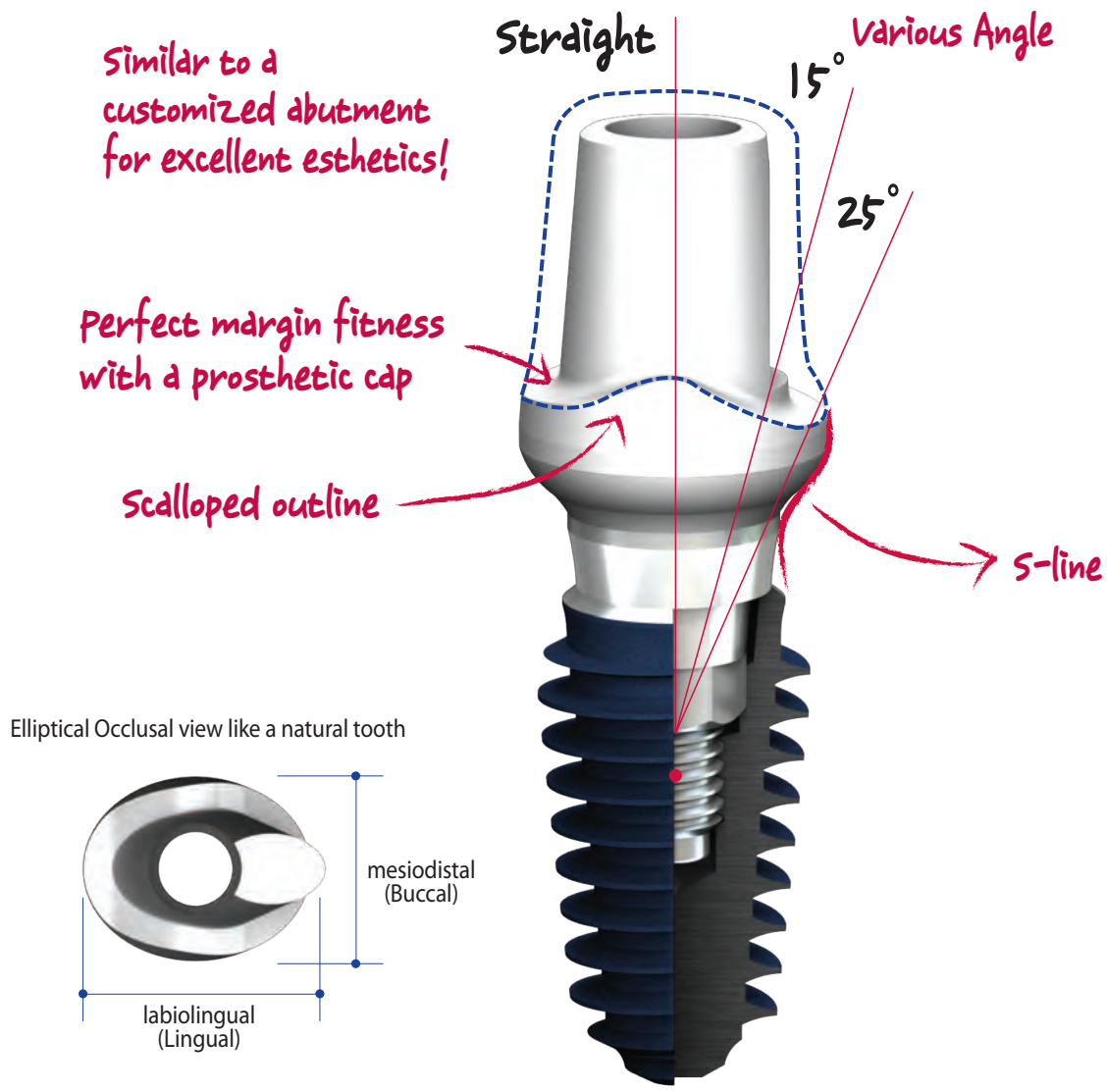
First, AnyRidge implants were placed into the internationally recognized standard bone block with more 40Ncm torque force and an abutment was connected on each implant. Instron was used to measure the force to move a fixture 100µm. The average force was 220N (22.4 kgf). Therefore, If the new temporary abutment can be fractured under this force, it may protect the fixture from movement or failure.



From this experiment, we could developed a special temporary abutment which has lower fracture threshold of less than 200 N (20.4 kgf). It was named as Fuse Abutment. Also it has an anatomic profiles to make temporary prosthetics more esthetic.



Design concept of Fuse Abutment™



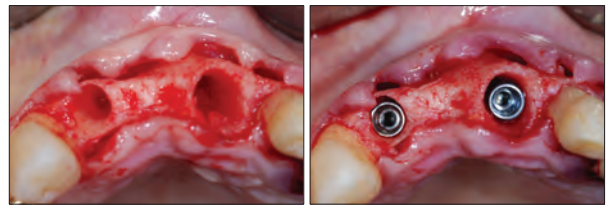
> Fuse Abutment line-up

System	Type	Diameter		Cuff (mm)	Height (mm)	Ref. C
		Labiolingual (Lingual)	Mesiodistal (Buccal)			
ANYRIDGE®	Straight	Ø5.5	Ø5.5	3	5.5	AFAP5535P
	15 angle		Ø4.5		7	AFAA5315P
	25 angle		Ø4.5		7	AFAA5325P
AnyOne®	Straight	Ø5.5	Ø5.5	3	5.5	AOFAP5535P
	15 angle		Ø4.5		7	AOFAA5315P
	25 angle		Ø4.5		7	AOFAA5325P

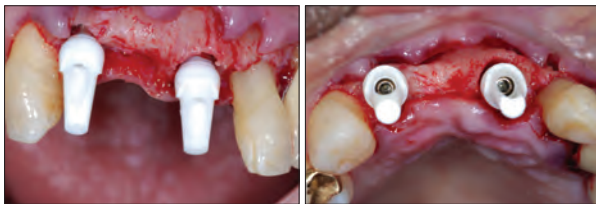
Case Report



1 Before surgery - Bridge was blocked with root fracture



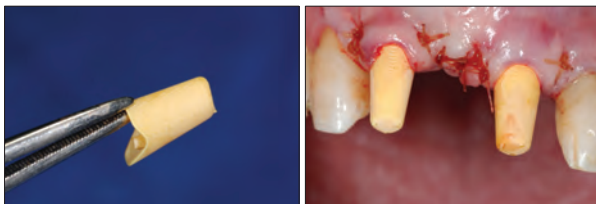
2 Fixtures were placed immediately after extraction. Fixation was excellent.



3 Two Fuse abutments (25 degree on #12, 15 degree on #21) were connected.



4 Mega-Oss Bovine and collagen membrane grafted.



5 Resin caps were positioned on the abutments, and tight suturing was made.



6 Provisional restoration was delivered.