

OrthoMTA & Root Repair Kit™



What is OrthoMTA?

OrthoMTA is Compositionally formulated to have the physical properties, setting requirements and characteristics necessary for a clinically effective root canal filling and repair material.

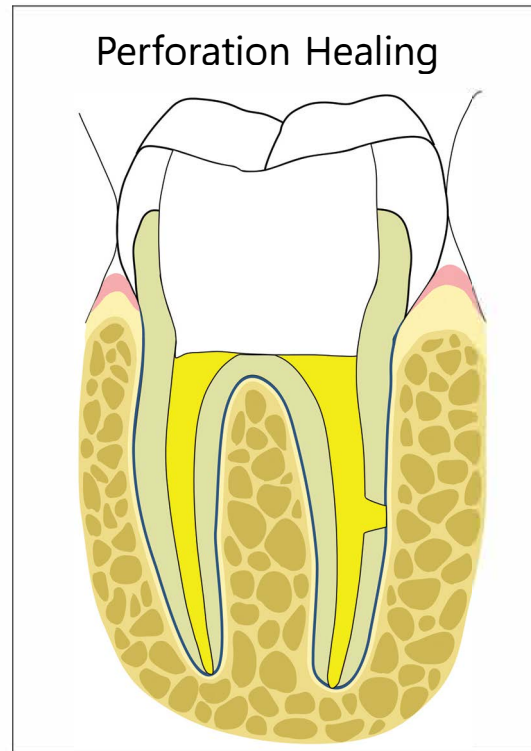
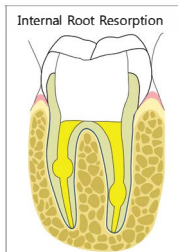
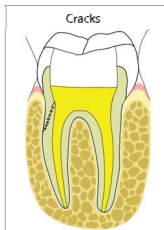
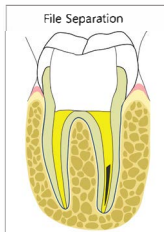
For sealing of root canal space and dentinal tubules with OrthoMTA, we highly recommend dentist of orthograde filling system instruments and method. With unique instruments and method, dentist could fill the canal easily and effectively.



Root Repair



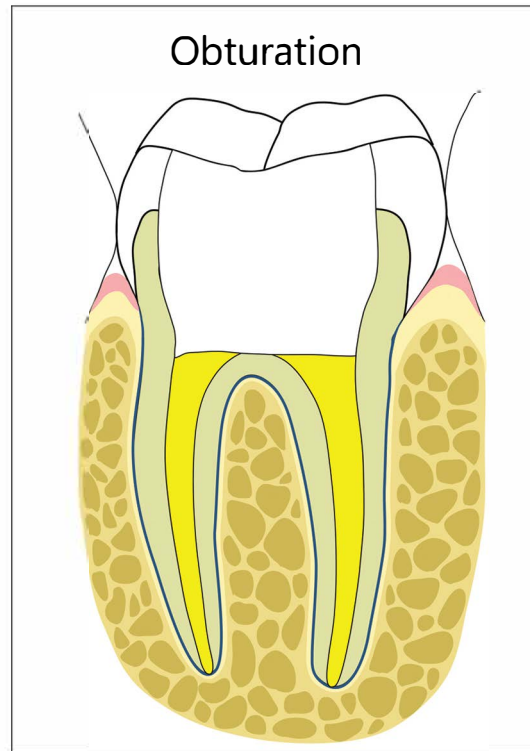
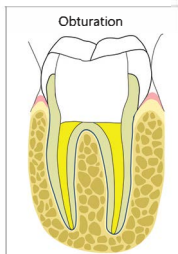
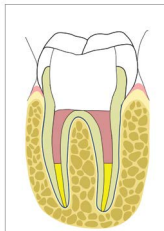
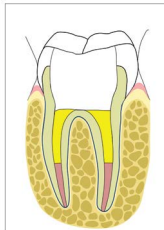
Root canal filling



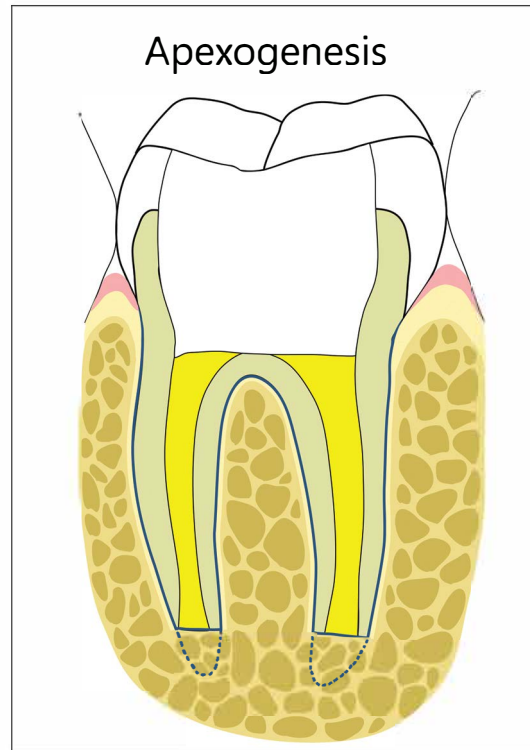
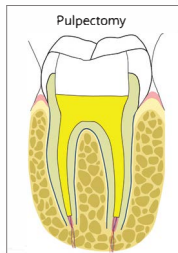
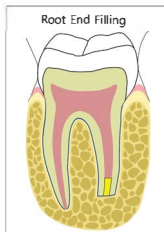
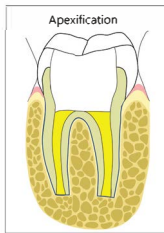
Root filling



Root canal filling



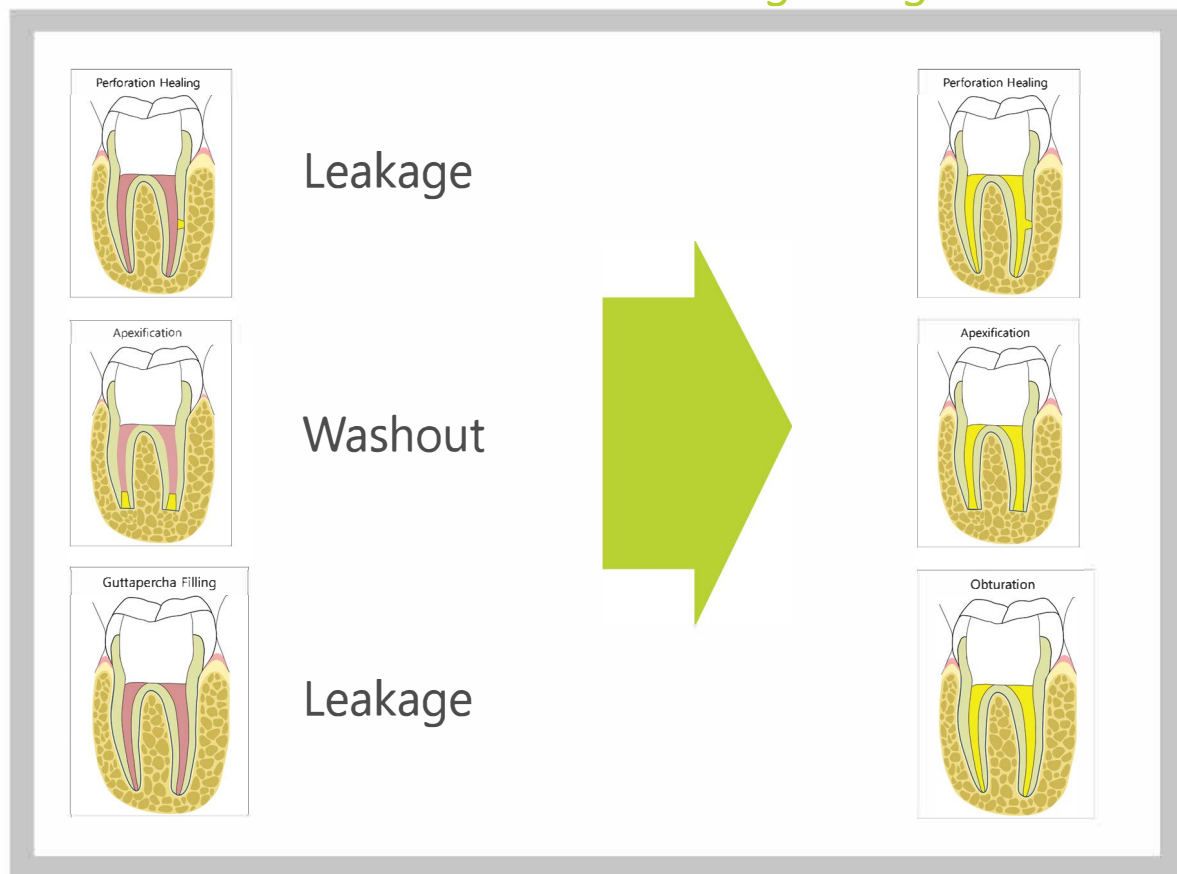
Root Regeneration





MTAs vs OrthoMTA

Rationale of OrthoMTA grafting



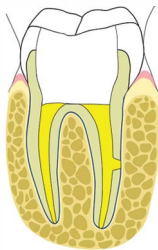
Failure of Setting of Mineral Trioxide Aggregate in the Presence of Fetal Bovine Serum and Its Prevention. J Endod 2012;38:536-540
Physical and Chemical Properties of New-generation Endodontic Materials. J Endod 2010;36:524-528



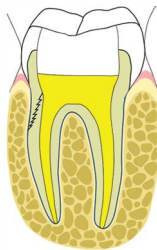
Root Repair Kit



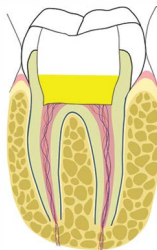
Perforation Healing



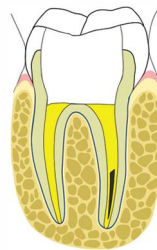
Cracks



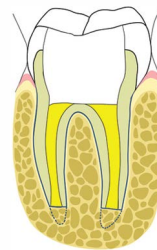
Pulpotomies



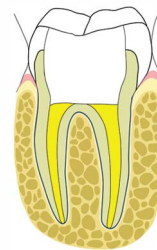
File Separation



Apexogenesis



Obturation



P PHYSICAL PROPERTIES



Property	OrthoMTA	P MTA
Specific gravity	3.106	
Surface Area(m ² /kg)	961	409
Average particle size(μm)	2.62	6.9
90% finer than(μm)	4.64	19.97
50% finer than(μm)	2.36	6.85
10% finer than(μm)	1.18	0.97
Setting time, initial	180 min	74 min
Setting time, final	360 min	210 min

Property	OrthoMTA	P MTA
Particle size(μm) 1)	2.0	6.9
Content of free CaO wt.% 2)	0.66	1.74
Total crystalline phases(%) 3)	96.9	94.3
Expansion coefficient(%) 4)	0.09	2.78
Color	White	Yellow & Gray
Heavy metal	Non detected	Cr,As,Ni,Fe,Mn

1) Mastersizer (Malvern co., ltd. Ver. 2.15)

2) KSL 5120

3) Calculated from composition measured by QX-RD (Phillips, PW1710)

4) Measured by Laser displacement sensor Micro Track 7000



PHYSICAL PROPERTIES of OrthoMTA

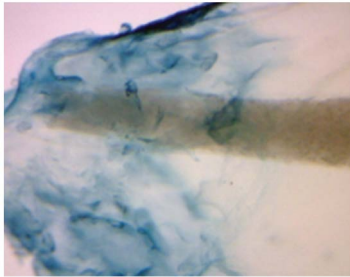
- Orthograde filling type material
- Does not have any harmful heavy metals
- Excellent sealing property
- Easily places and distributed property
- Good radio-opacity
- Good bactericidal property

Composition & Ingredient Information

Component	OrthoMTA	D MTA
$3\text{CaO} \cdot \text{SiO}_2$	76.3	66.1
$2\text{CaO} \cdot \text{SiO}_2$	11.8	6.7
$3\text{CaO} \cdot \text{Al}_2\text{O}_3$	8.0	19.9
$4\text{CaO} \cdot \text{Al}_2\text{O}_3 \cdot \text{Fe}_2\text{O}_3$	0.8	1.6
Free CaO	0.7	1.7
Total Crystalline Phase	96.9	94.3

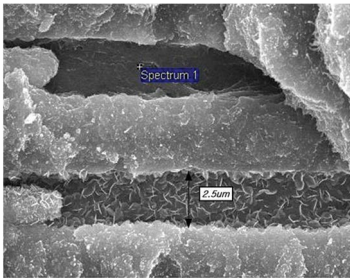
CONCEPTS

INTRA-TUBULAR Grafting



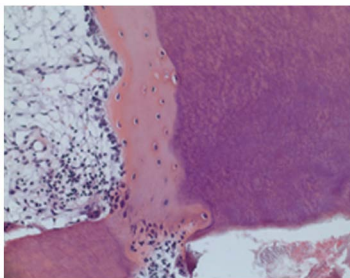
Physical sealing : Jamming effect

As an orthograde intra canal grafting material, OrthoMTA can achieve perfect sealing of root canal space. This is due to jamming effect of 2 micron particles at the apical foramen. OrthoMTA has superior sealing properties to any other materials.



Chemical sealing : C-S-H & Hap

This is due to its hydrophilic properties under moist conditions. Short tags of C-S-H obturate the opening of the dentinal tubules. As a result, the entombing effect can be induced. Long tags of hydroxyapatite fill the space of it and achieve fossilization of bacterium.

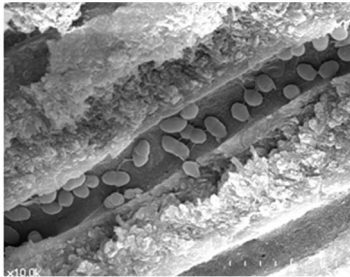


Biological sealing : New cementum

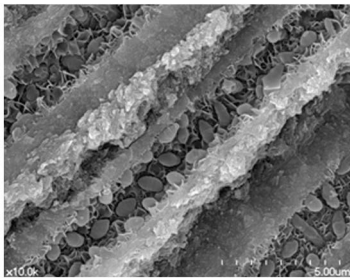
New cementum is regenerated at the apex of root after orthograde intra canal graft. Because OrthoMTA is bioactive material, damaged periodontium is regenerated. Biological sealing can be induced by OrthoMTA.

Entombment & Fossilization

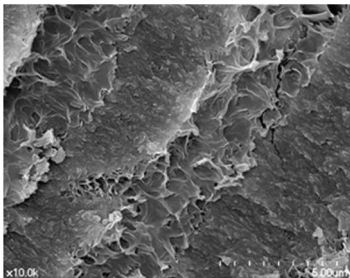
of bacterium in dentinal tubules



Experimental group (2weeks) shows the initial stage of fossilization of *E.faecalis* with hydroxyapatite in the infected dentinal tubules.

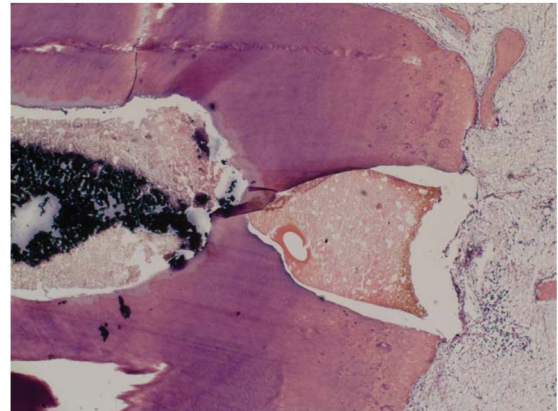
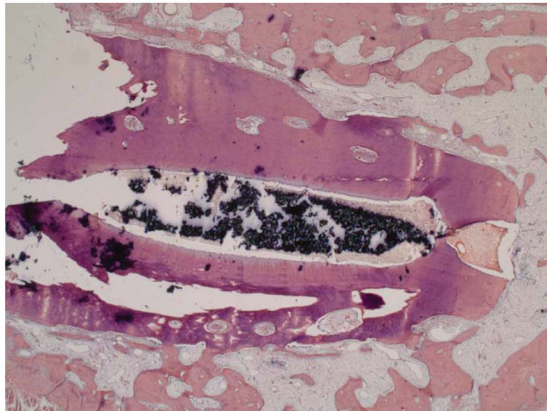
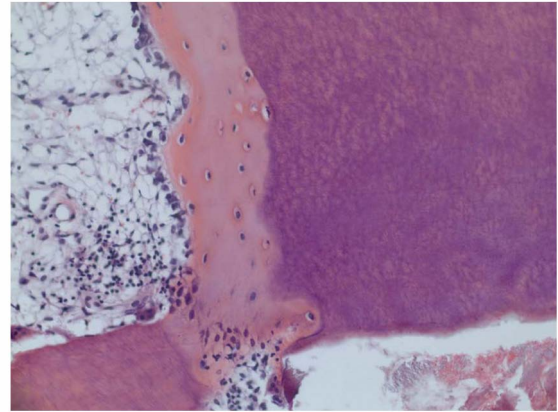
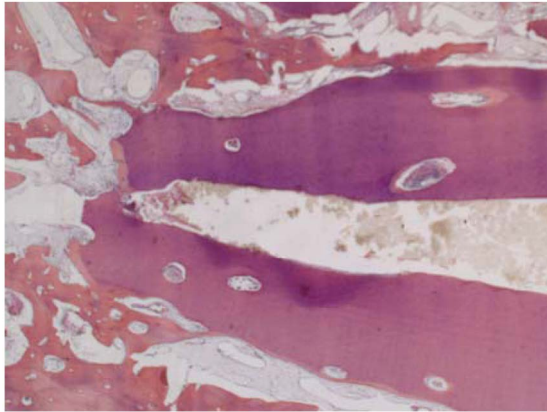


Experimental group (4weeks) shows the fossilization of *E.faecalis* in the infected dentinal tubules. Which is time dependent.



Experimental group (8weeks) shows complete obstruction of the infected dentinal tubules by the newly formed hydroxyapatite and inter canaliculi space begin to be filled with initial form of it.

NEW CEMENTUM FORMATION



Orthograde grafting system



1 OrthoMTA

As a root canal filling material

Orthograde Root Canal Filling

OrthoMTA is an innovative orthograde root canal grafting material that is unaffected by moisture or blood contamination

- World 1st orthograde bioceramic filling and repair material
- Perfect sealing and biocompatibility
- No heavy metal (No Cr6+, As, Ni, Fe)
- No expansion (0.09%)



0.2g x 50 vials / pack

2 MIXER

As a mixer



- World 1st cordless centrifuge
- Making voids free
- Exact control of W/P
- Save time & material
- Battery Operated



3 CARRIER

As a carrier

OrthoMTA is easy to handle with the OrthoMTA Carrier.

- For orthograde or retrograde MTA carrying and filling
- Luer Lock syringe system
- Using with disposable and bendable needle tip
- Easy to handle, durable & autoclavable
- Medical grade stainless steel body and NiTi Plunger



4 COMPACTER

As a compacter



- World 1st compacter for bioceramic material
- Wonderful flexibility : no damage to canal wall
- Autoclave
- Save time & material



.02 taper #25
21mm or 25mm
3ea/pack

5 PLUGGER

As a plugger

- Plugging or back-filling of hydrated MTA granule
- Specialized end tip's size for OrthoMTA plugging
- Stainless steel



6 ACCESSORY



Needle Tip

- Bendable with bender for posterior tooth
- Luer Lock connection with Carrier
- Medical grade stainless steel with plastic hub



Plunger

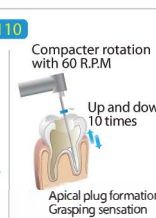
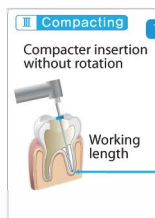
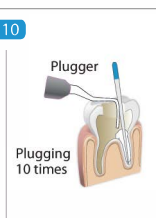
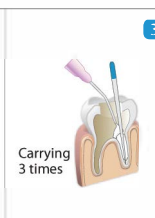
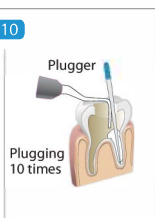
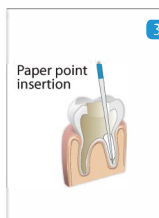
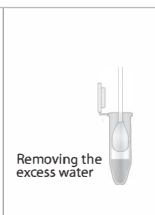
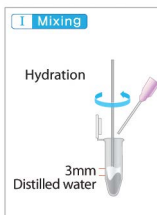
- Pushing stick connecting with Carrier
- Disconnecting and changing in case of breakage
- Robust and durable
- Ni-Ti



Orthograde grafting Method



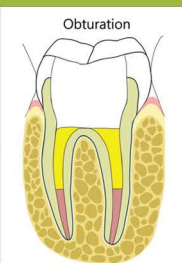
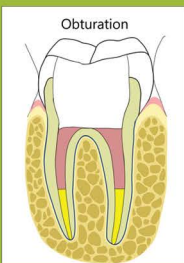
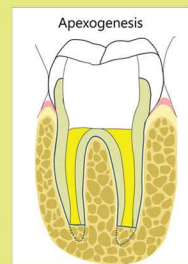
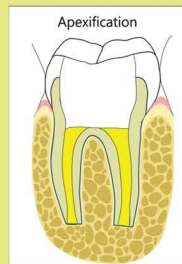
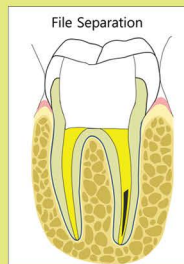
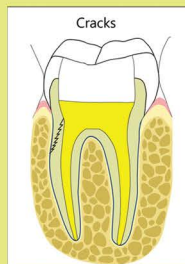
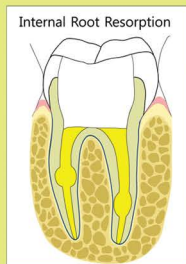
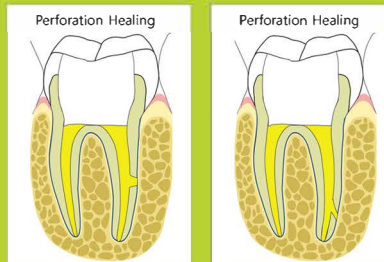
OrthoMTA[®] MTA (Mineral Trioxide Aggregate)
Root Canal orthograde filling & Repair Material



BioMTA (Yongsan-dong), 41, Techno8-ro, Yuseong-gu, Daejeon, Korea
+82-2-885-3923 www.biomta.com



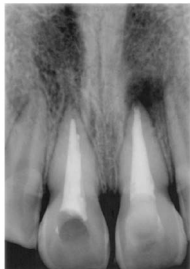
INDICATION



Root canal obturation



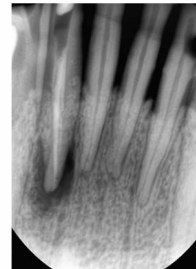
2010.8 pre OP



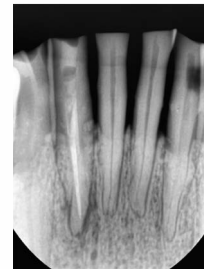
2010.9



2010.11

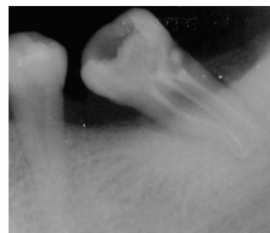


2010.5



2010.11

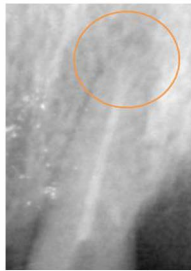
Curved root canal



Y shape canal



Pt.673



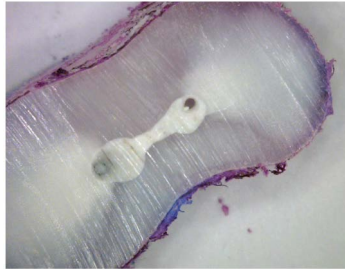
Pt.4087



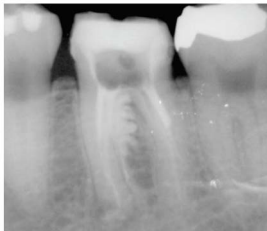
C shape canal



Isthmus



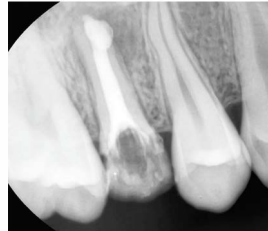
Perforation



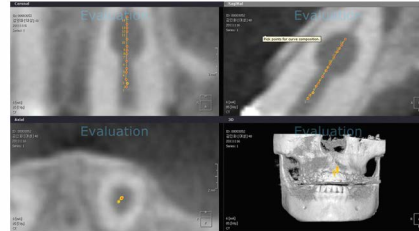
Root resorption



2010.09



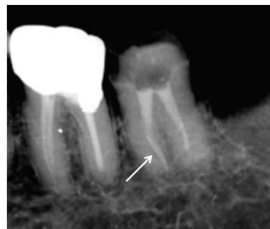
2010.10



Crack tooth syndrome



File separation



File separation & biofilling : 2yrs F/U



File separation & biofilling : 5yrs F/U



Multiple separation & Biofilling



Replantation



2004.09
-2005.01. Apicoectomy & replantation after MTA filling



2009.10





RESEARCH & DEVELOPMENT

BioMTA

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San 4-2 Bongchun dong, Gwanak-gu, Seoul 151-919, Korea
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