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The practice of Periodontics is about scientific progress and the application of art. I am fortunate and grateful to have had one of the world's renowned researchers as a mentor, Dr. Jan Egelberg. He authored, "Periodontics: The Scientific Way." However, science and human clinical studies can only provide us with a limited understanding of God's biology of oral health. Because every patient is a new canvas, the science of periodontics becomes an art form. Photography enables me to capture the science and art of treatment from which I learn continuously. It is my hope that these shared photographic experiences can further the art and science of the practice of Periodontics.



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Periodontal disease is the sixth most common disease on the planet. Periodontal disease is the number one cause of tooth loss after 30 years of age. There is a direct link between periodontal disease and systemic disease that includes; cardiovascular disease (atherosclerosis), respiratory disease (COPD), gastrointestinal disease (IBS), cognitive disease (Alzheimer's) and diabetes. According to Center of Disease Control (CDC) 42.7% of adults over 30 years of age and 80% of adults over 60 years of age have periodontal disease.

Periodontal disease is a chronic inflammatory disease caused by a dysbiotic bacterial/virus population normally found in the oral environment. Traditional treatment (scaling/root planning, osseous surgery) is effective treatment that has not changed in the last 70 years. However, the introduction of laser treatment and a better understanding of laser biology has caused a paradigm shift in the treatment of periodontal disease. Laser Assisted Regeneration (LAR) is enabling the saving of teeth that was once thought impossible.

Implants are not teeth. Implants have a limited biology compared to God given teeth. Implants are more vulnerable to periodontal disease than natural teeth. It is in the interest of overall health and quality of life that we retain our teeth. A periodontist saves teeth

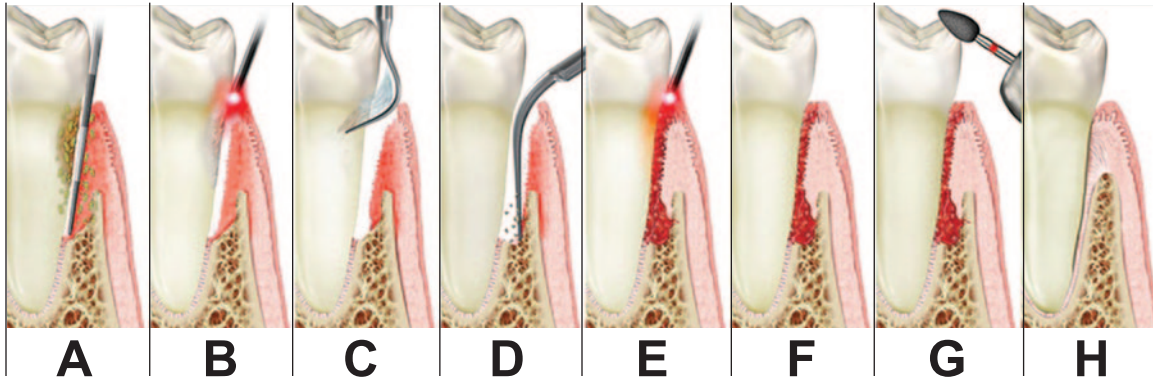


Which one has periodontal disease, generalized, Stage 3?

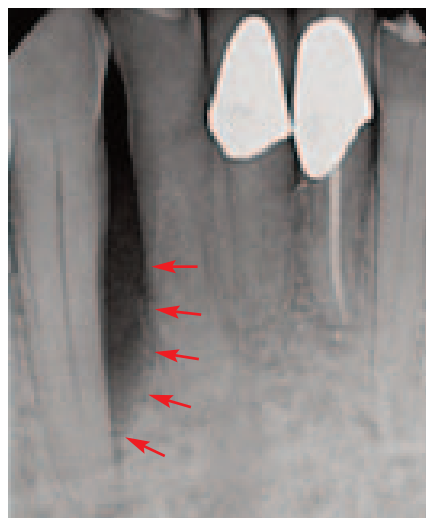
They both do!

The background of the page is a deep blue gradient. On the left side, there is a semi-circular shape that acts as a focal point for numerous light rays. These rays, in various shades of light blue and white, fan out across the page, creating a sense of depth and movement. The rays are most concentrated near the semi-circle and become more sparse as they spread out.

LASER (LANAP) LASER ASSISTED NEW ATTACHMENT PROCEDURE



- A.** Periodontal probe measures pathologic pocket depth. Pathological bacteria is free floating in the pocket, in pocket tissue and in plaque calcifications on the root surface.
- B.** A unique laser removes only infected tissue, vaporizing pocket bacteria and bacteria in the tissue, leaving healthy tissue. The laser begins the healing process with cellular regeneration stimulation.
- C.** A ultrasonic scaler and other special instruments are used to remove root surface calcified plaque.
- D.** Bone is modified at the time of surgery, releasing healing factors and stem cells from the periodontal ligament and bone.
- E.** The laser is used to establish a blood clot containing stem cells from the bone and periodontal ligament.
- F.** The tissue is gently opposed to the root surface, no sutures are needed. The resulting blood clot provides a unique environment for periodontal regeneration.
- G.** Occlusal trauma is adjusted to limit blood clot disruption and aid in periodontal regeneration.
- H.** Periodontal regeneration.



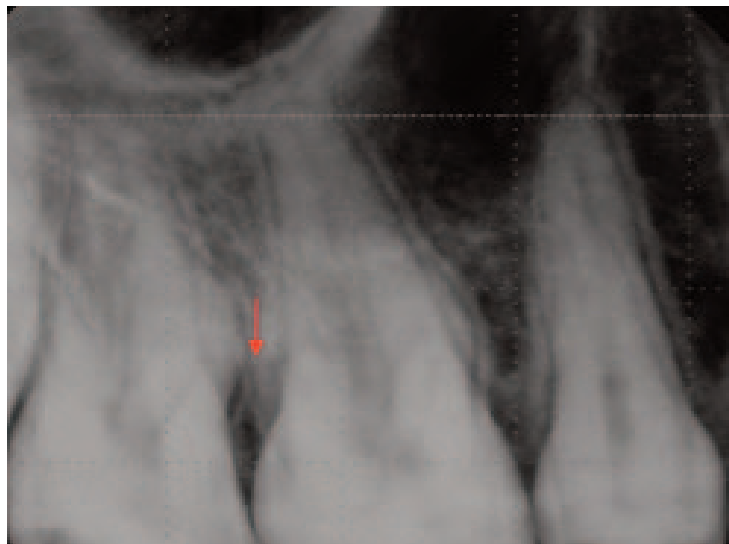
Bone loss.



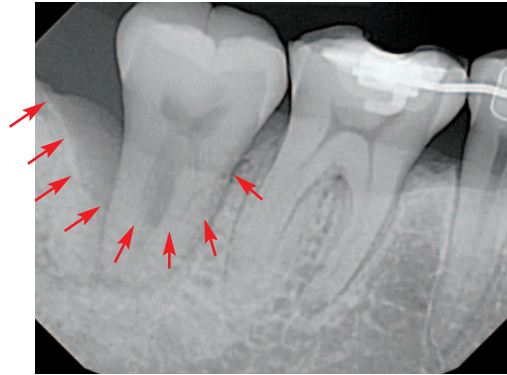
Periodontal regeneration,
1 year.



Extensive circumferential bone loss distal root of maxillary 1st molar.



Periodontal regeneration, 1 year.



Extensive bone loss distal and into furcation.



Molars splinted for stability during healing.



Periodontal regeneration, 1 year.



↓

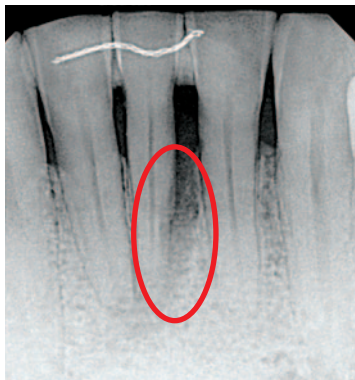
222	222		339	222	222
27	26	25	24	23	22
222	222		222	222	222
	I		II	0+	
			2/5		
			B		
			M		
	SC		AFSC		

9mm probing pocket depth #24.

↓

222	222		223	222	222
27	26	25	24	23	22
222	222		222	222	222
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	1/2		2/3		
	SC		SCEN		

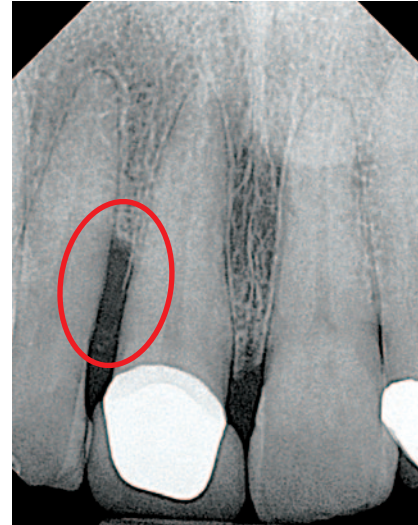
3mm probing pocket depth, 1 year.



Vertical bone loss #24.



Periodontal Regeneration,
1 year.



Periodontal regeneration, 1 year.

Final result, 2mm probing pocket depth with minimal interproximal recession. Traditional treatment, scaling/root planing, flap surgery, bone grafting would produce greater interproximal recession!



Bone loss distal #10.



Periodontal Regeneration, 1 year.



No recession with treatment.





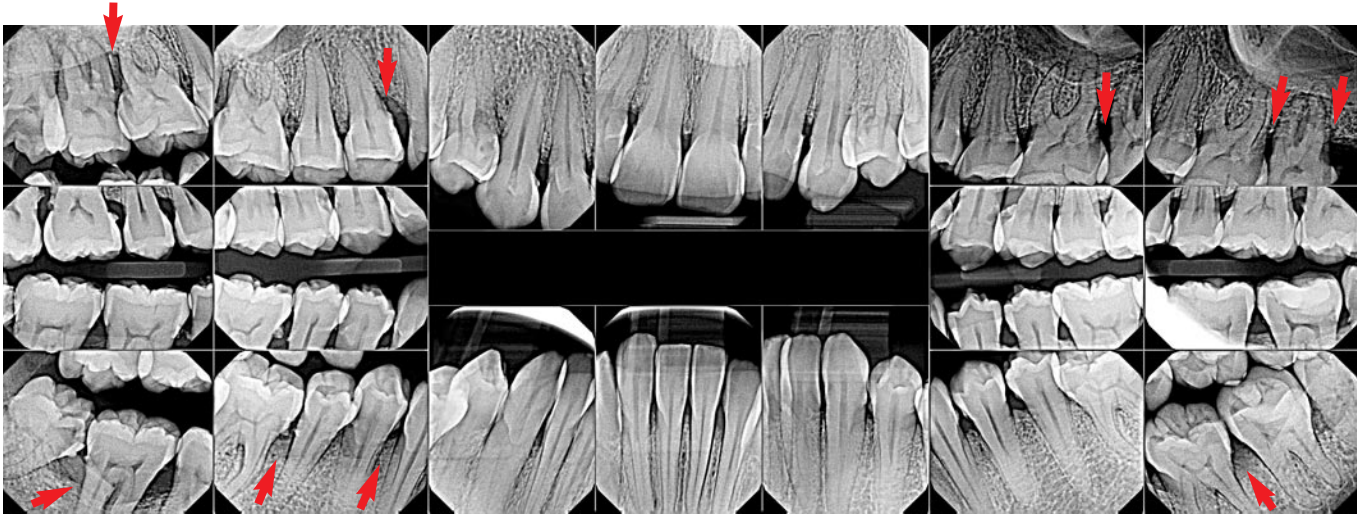
Periodontitis, generalized, stage 3, grade B.



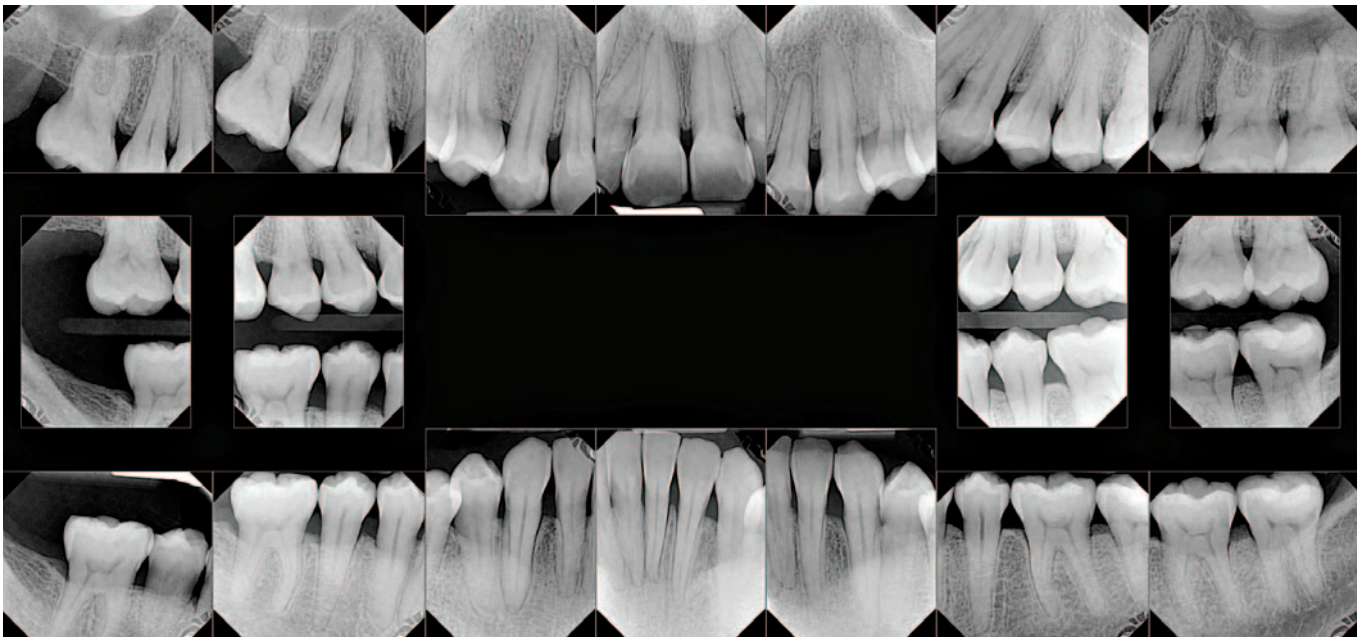
LANAP followed with orthodontic treatment.



3 years post treatment.



Pre-treatment radiograph, extensive bone loss.



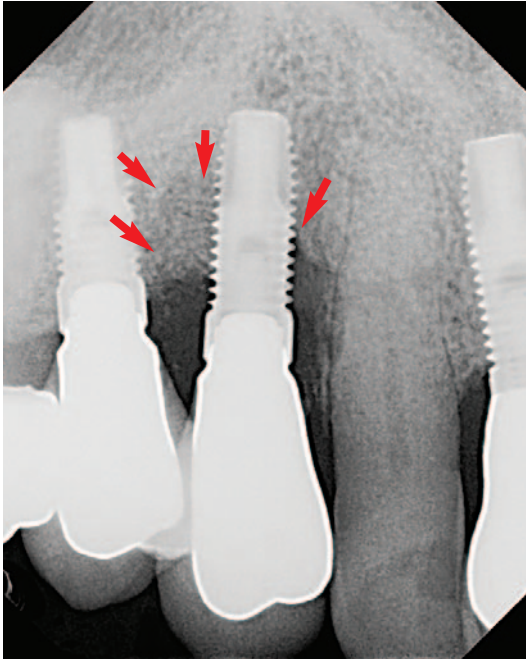
Periodontal regeneration, one year post-treatment.

1	2	846 746	435 434	537 438	734 535	436 545	644 534	324 435	535 545	537 746	734 534	436 544	736 447	979 760	16
		2 6											2 2 6	222 6	
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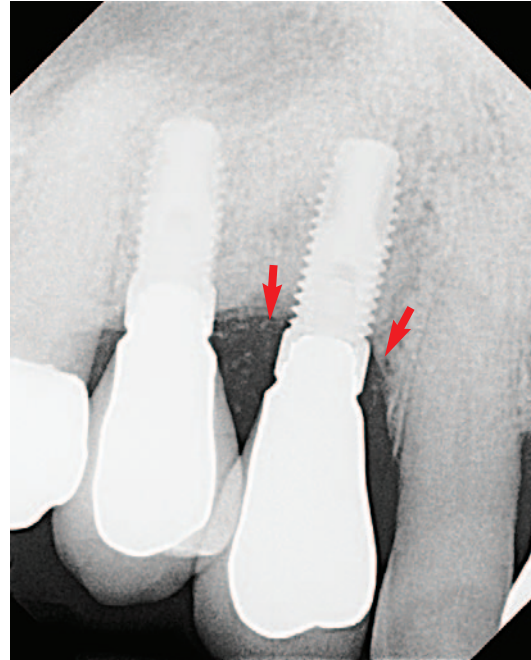
Pre-treatment pocket probing depths.

1	2	333 223	222 222	222 222	222 222	222 222	222 222	222 222	222 222	222 222	222 222	222 222	223 222	322 222	16
		2/ 2					0+ 0+	0+ 0+		1/ 1/			2 1 2 2		
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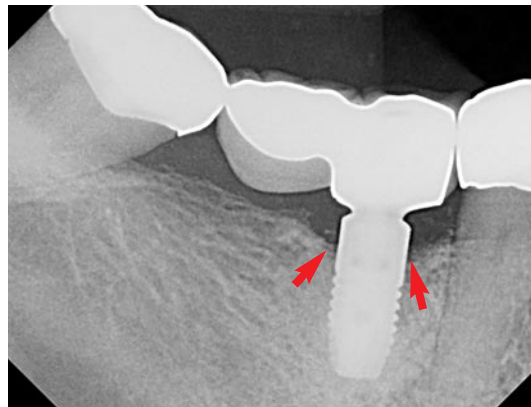
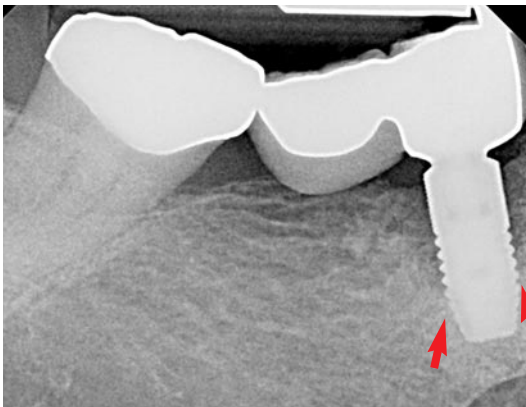
Periodontal regeneration, one year post-treatment.

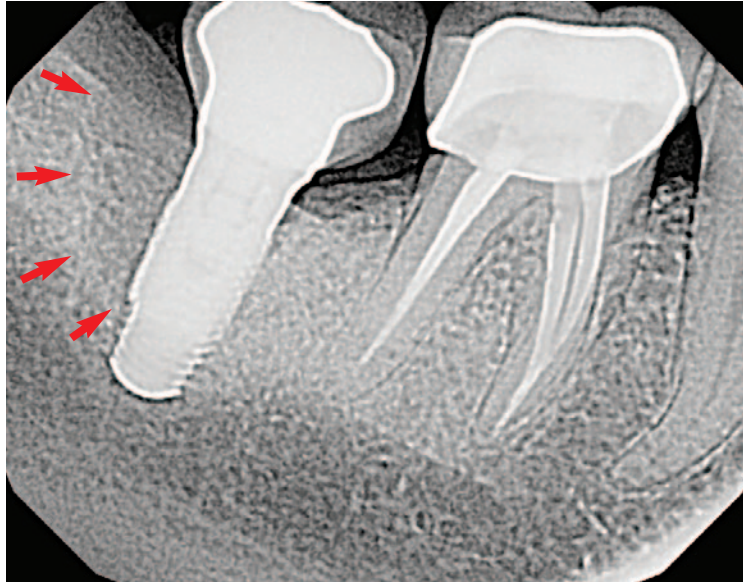


Radiographic bone loss.

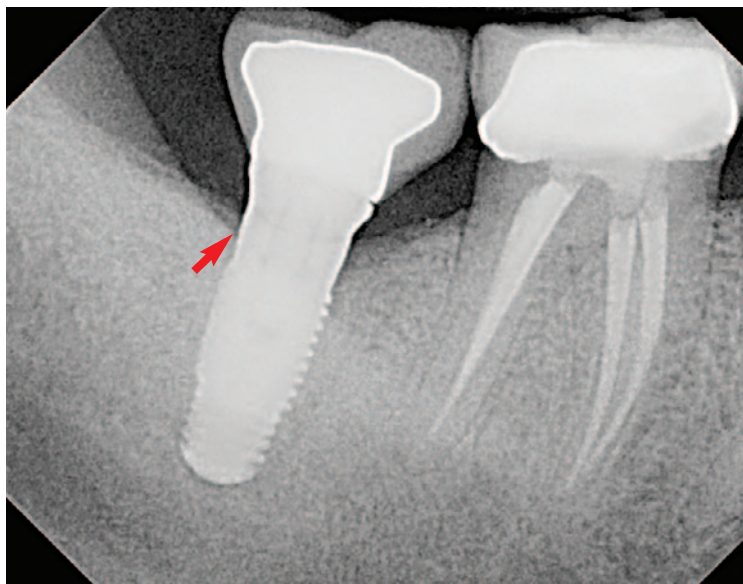


Radiographic bone gain, one year.





Radiographic bone loss.

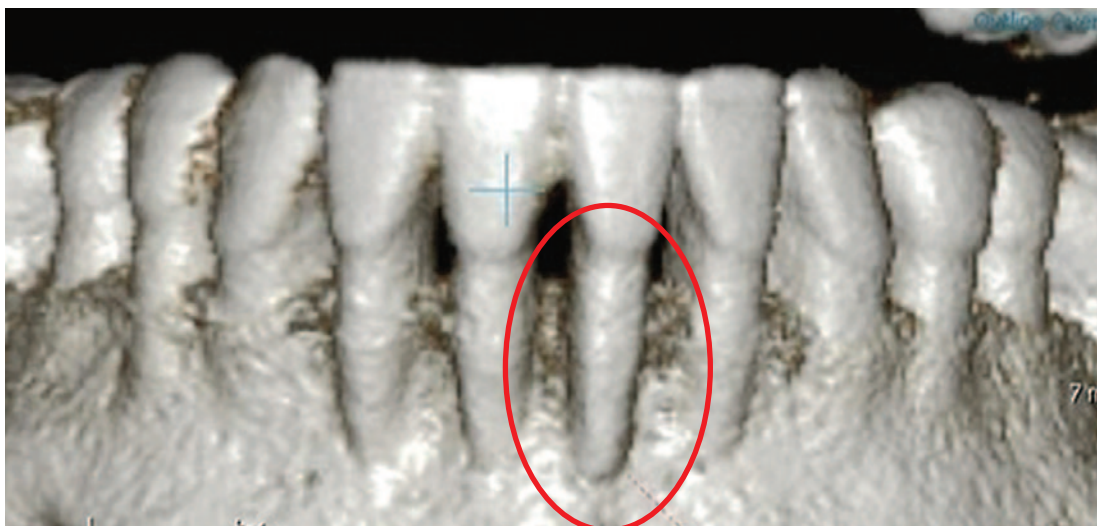


Radiographic bone gain, one year.





Gingival recession always has bone loss!



CBCT (Cone Beam Computed Tomography). Bone loss evident lower incisor. Same patient as above.



Gingival grafting and prosthetic treatment.



Autogenous graft, #3-14 and #24/25, crowns/veneers #4-13.



Before gingival grafting.



After gingival grafting, mobile teeth splinted during healing period, autogenous graft.



Before modified VISTA procedure (modified Vestibular Incision Subperiosteal Tunnel Access, similar to Pinhole®).



After VISTA with frenectomy.



Before gingival grafting.



After gingival grafting, autogenous graft.



Before autogenous graft.



After autogenous graft.

Right



Left



Alloderm



Autogenous



Same patient. Alloderm donor tissue right side, autogenous donor tissue left side, 6 month results. Similar outcome either tissue. Alloderm undergoes resorption and is replaced with one's own new tissue.



Alloderm; maxillary and mandibular arches.





Gummy smile and **high frenum** attachment.



Aesthetic crown lengthening and frenectomy.



Gummy smile.

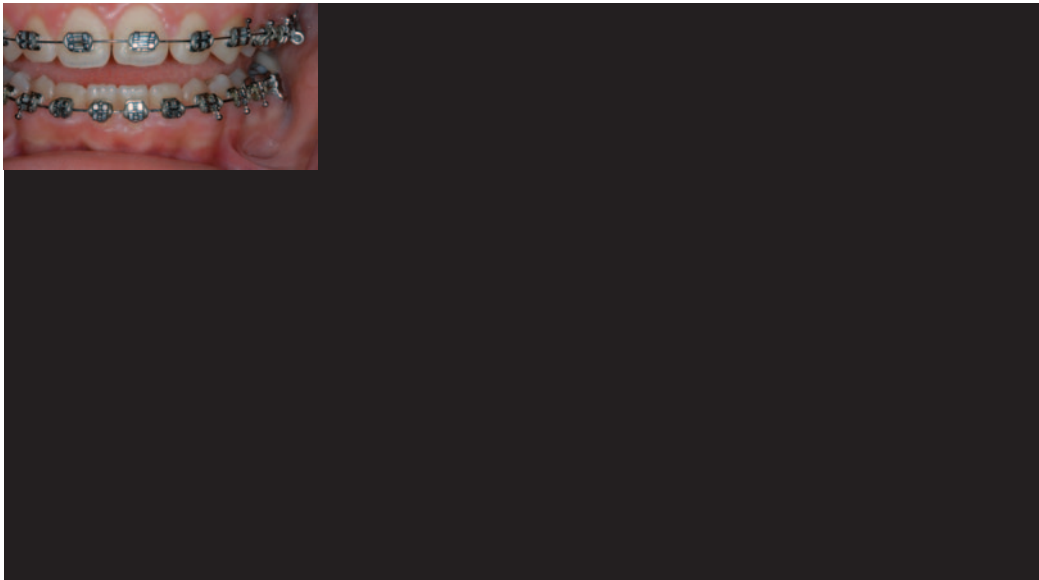


Aesthetic crown lengthening.





Aesthetic crown lengthening and frenectomy.





Temporary crown in place but insufficient tooth structure above the gum line for proper permanent crown retention.



Gingival and bone recontouring for proper crown retention. Ready for crown preparation.



Temporary crown has been removed and there is insufficient tooth structure above the gum line for proper permanent crown retention.



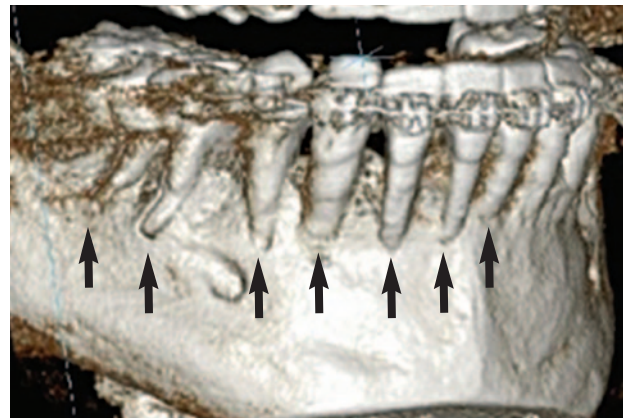
Gingival and bone recontouring for proper crown retention. Ready for crown preparation.







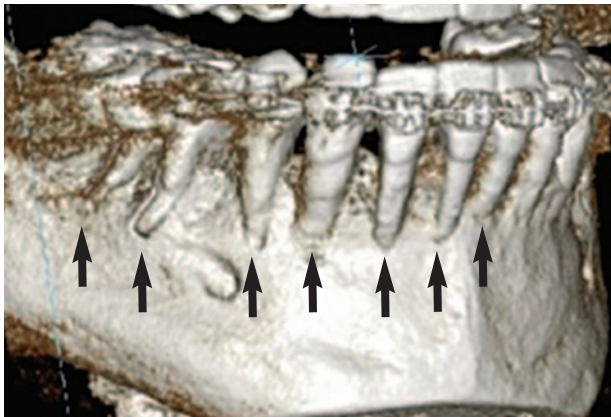
Recession and bone loss during
orthodontic treatment.



Cone Beam Surface Scan; extensive bone loss.



Gingival autogenous graft and bone grafting,
orthodontics completed.



Cone Beam Surface Scan; after treatment, one year.

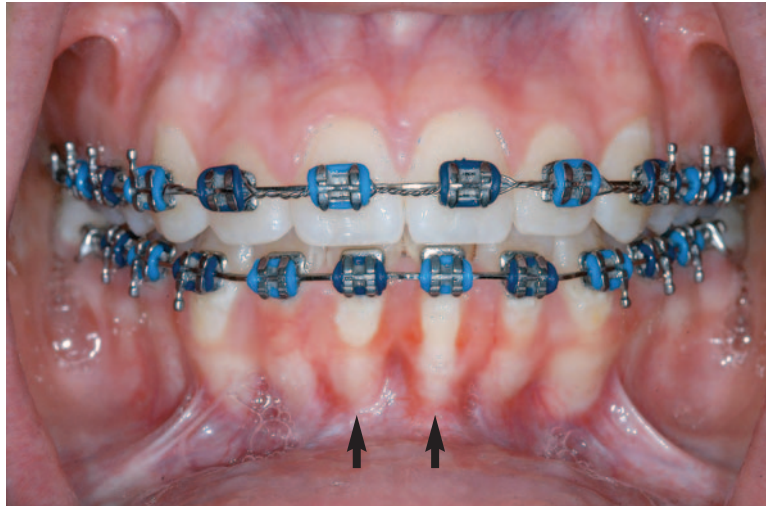


Before



After





Recession during orthodontic treatment,
#24/25, prominent root form #22-27.



Autogenous gingival graft, improved root form.



Cone Beam Surface Scan: Impacted canines.



Bracket and chain surgically attached to impacted teeth,
elastic tied to gold chain and arch spring for gentle eruption.

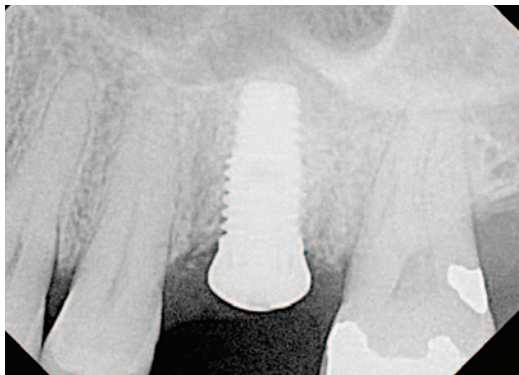


Canines fully erupted.

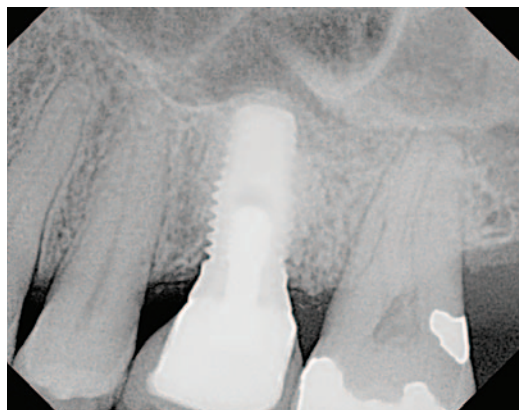




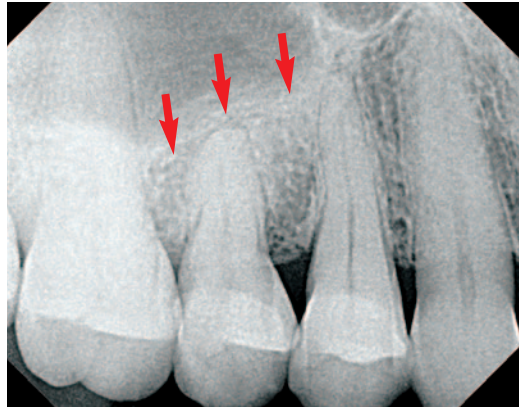
Failing molar, extraction and bone graft, four months healing.



Implant with a **Sinus Tap Procedure** (gently nudging the sinus membrane for sufficient implant length), sinus is not compromised.



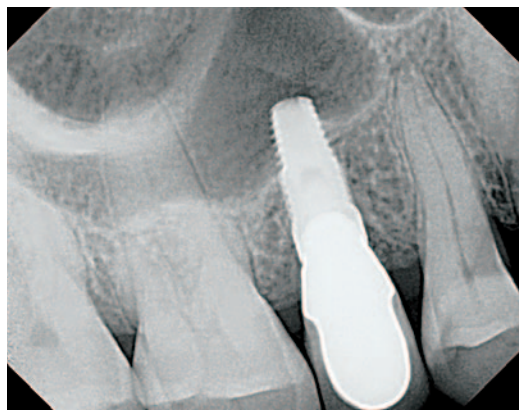
Final restoration after four months healing.



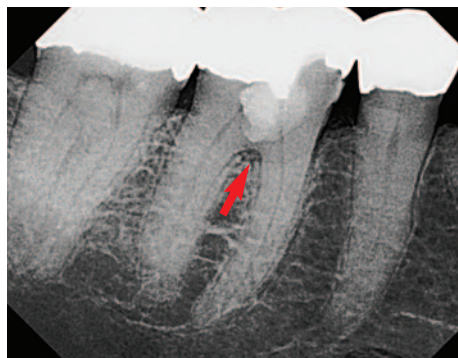
Failing pre-molar, vertical fracture, extraction and immediate implant.



Implant with a **Sinus Tap Procedure** (gently nudging the sinus membrane for sufficient implant length), sinus is not compromised.



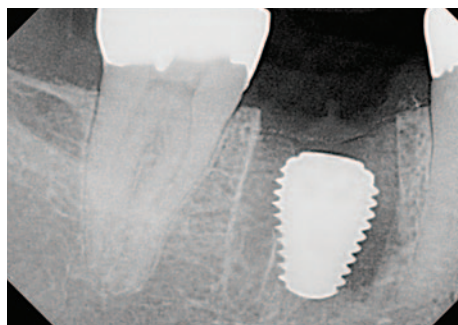
Final restoration after four months healing.



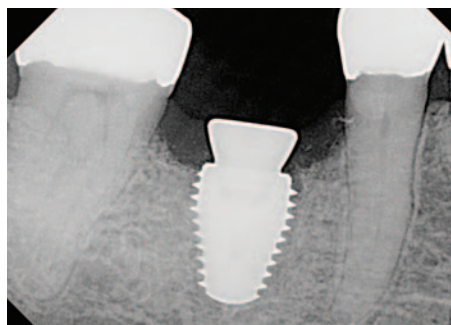
Extensive cavity into furcation.



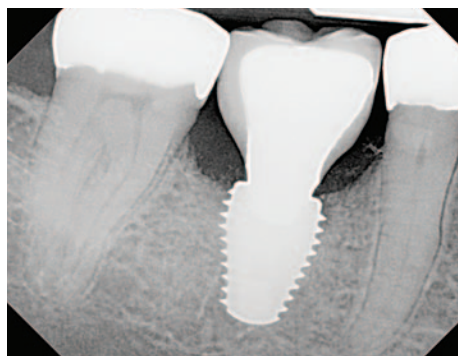
Tooth extracted.



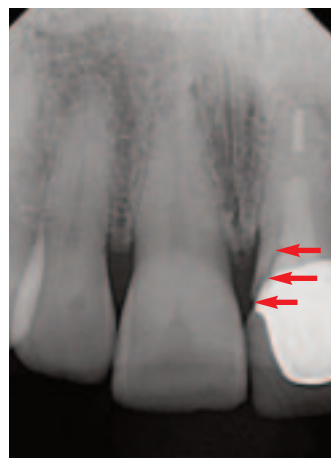
Immediate implant placement
after extraction.



4 months healing.



Implant restoration.



Failing left central incisor #9; caries and fracture.



Atraumatic extraction, implant placement, osseous and soft tissue grafting, and provisional crown (same day treatment).



4 months healing, ideal tissue preservation.



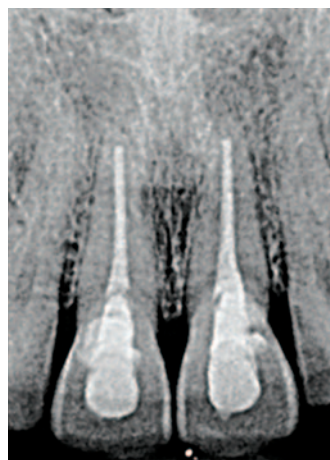
Final restoration.



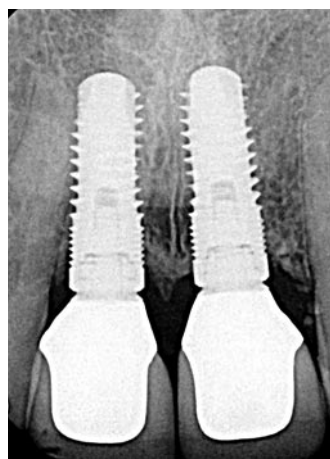


Hopeless central incisor; root resorption and root fracture #9.
Atraumatic extraction, implant placement, osseous and soft tissue
grafting, and provisional crown (same day treatment).

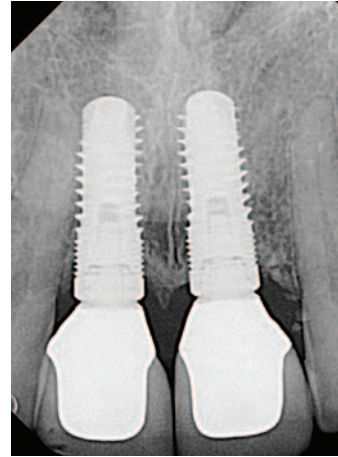




Failing central incisors #8 and #9; caries and root fracture, staged approach.



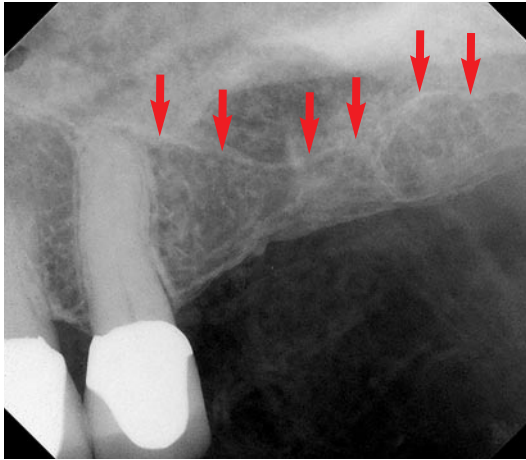
Atraumatic extractions #8/9, bone grafting, removable treatment partial, 4 months healing, implant surgery.



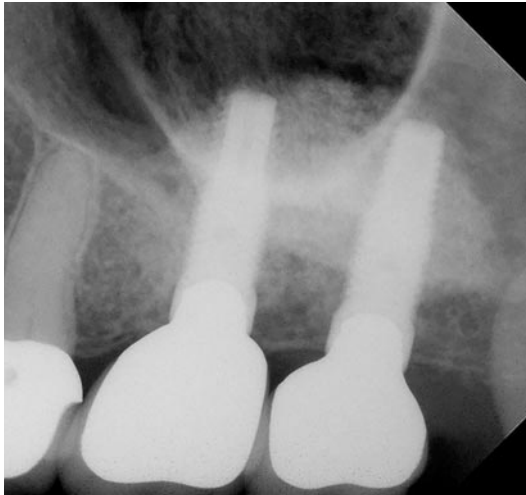
Final restorations 4 months after implant surgery.



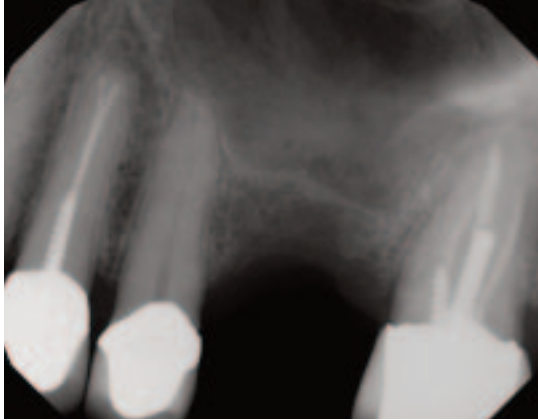
Final restorations, 5 years later.



Inadequate alveolar bone height for implants.



Sinus lift, osseous grafting, implants with restorations, 9 month process.



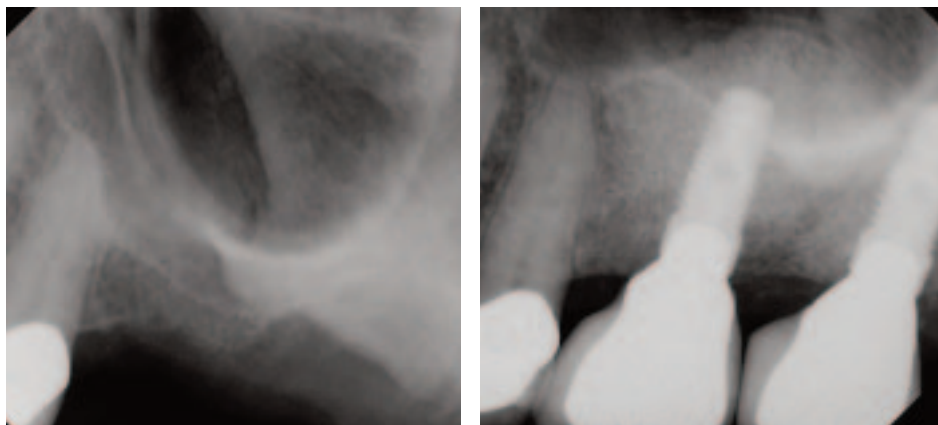
First molar bone loss, second molar;
recurrent root canal infection,
(fracture), hopeless prognosis.



Image from Cone Beam
Scan, palatal root infection.



Before treatment.



Second molar extracted, sinus lift, osseous grafting, implants with restorations, 9 month process.



After treatment.