

Implant Dentistry Portfolio Submission

“Restoring a Genuine Smile”

...

Maddy Salo D20308



Patient

CC “I want to fix my front teeth, I haven’t smiled in years. All I want is my smile back”

(dislikes un-esthetic retainer)

Med Hx

Overall very healthy 24yo F

Meds: None

All: Penicillin and latex

Dental Hx: 8 years of ortho

Habits: Smokes marijuana on occasion



Extra-oral Photos



Extra-oral Findings:

Facial Assessment:

- Medium smile line
- Small midline deviation, in the range of normal
- Slightly convex profile
- Class 1 occlusion



Intra-oral Photos



Intra-oral Photos



Periodontal Findings

		3 2 3	3 2 3	3 2 3	2 2 2	2 1 3		3 1 3	2 1 2		3 2 3	2 2 3	3 2 3	3 2 3	3 2 3		PD
		B B			B			B B B									Bleed
		3 1 3	3 1 3	2 1 2	2 0 2	2 0 2		3 1 3	2 1 2		3 0 3	2 1 2	3 1 3	3 1 3	3 1 3		FreeGM
		0 1 0	0 1 0	1 1 1	0 2 0	0 1 1		0 0 0	0 0 0		0 2 0	0 1 1	0 1 0	0 1 0	0 1 0		Attach
																	Furcation
																	MG Inv
																	Calc
		0	0	0	0	0		0	0		0	0	0	0	0		Mobil
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
		3 2 3	3 2 3	3 2 3	2 1 2	2 2 3		3 2 3	3 2 3		2 1 2	3 2 3	3 2 3	3 2 3	3 2 3		PD
																	Bleed
		3 0 3	3 0 3	3 0 3	2 0 2	2 0 2		3 2 4	4 1 3		2 1 2	3 2 3	3 2 3	3 2 3	3 2 3		FreeGM
		0 2 0	0 2 0	0 2 0	0 1 0	0 2 1		0 0 -1	-1 1 0		0 0 0	0 0 0	0 0 0	0 0 0	0 0 0		Attach
																	Furcation
																	MG Inv
																	Calc
																	Diag

																	Diag
																	Calc
																	MG Inv
																	Furcation
		0 2 0	0 2 0	0 2 0	0 0 0	0 1 0	0 1 0	0 1 0	0 0 0	0 1 0	0 0 0	1 1 1	0 1 0	0 2 0			Attach
		3 0 3	3 0 3	3 0 3	2 1 2	2 0 2	2 0 2	2 0 2	2 1 2	2 1 2	2 0 2	2 1 2	2 1 2	3 1 3	3 0 3		FreeGM
			B			B	B										Bleed
		3 2 3	3 2 3	3 2 3	2 1 2	2 1 2	2 1 2	2 1 2	2 1 2	2 2 2	2 1 2	2 1 2	3 2 3	3 2 3	3 2 3		PD
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17		
		0	0	0	0	0	0	0	0	0	0	0	0	0			Mobil
																	Calc
																	MG Inv
																	Furcation
		0 2 0	1 2 1	0 2 0	-1 1 0	0 1 0	0 1 0	0 1 0	0 1 0	0 1 0	0 1 0	0 1 0	0 2 0	0 2 0			Attach
		3 0 3	2 0 2	3 0 3	3 1 3	2 0 2	2 0 2	2 0 2	2 0 2	2 0 2	2 0 2	2 0 2	2 0 2	3 0 3	3 0 3		FreeGM
				B						B							Bleed
		3 2 3	3 2 3	3 2 3	2 2 3	2 1 2	2 1 2	2 1 2	2 1 2	2 1 2	2 1 2	2 1 2	2 1 2	3 2 3	3 2 3		PD

Periodontal Diagnosis

Assessment:

Plaque Index: 0.7

Some bleeding on probing

Inflammation due to irritation from retainer (stay-plate)

Etiology: Bacterial Plaque, retainer- orthodontic appliance

Diagnosis: Plaque Induced Gingivitis with gingival hyperplasia from appliance

Prognosis: Excellent

Hard Tissue Examination

#2, #3, #4, #5, #12, #13, #14, #15, #18, #19, #20, #21, #28, #29, #30, #31 Occlusal Sealants

#7 and #10 Congenitally missing

CRA Form

Disease Indicators: none

Risk Factors: high acidogenic bacterial load (8736), orthodontic appliances

Protective Factors: fluoridated water, fluoride toothpaste 2x daily, adequate saliva flow

Caries Risk: Moderate overall caries risk

Intra-Occlusal Records: RSOCCL Form

Form Question	Answer
TMD Screening	
<input checked="" type="checkbox"/> Recent history (within 1 month) of TMJ locking open	N
Recent history of TMJ locking closed	N
Recent history of morning headaches (>=4 days/week)	N
Recent history of evening headaches (>=4 days/week)	N
Recent onset of TMJ sounds during opening or closing	N
TMJ-area pain when eating, talking or at rest	N
For any "yes" answers above, please see instructions by right-clicking here.	
Describe any jaw-related complaints not mentioned above	

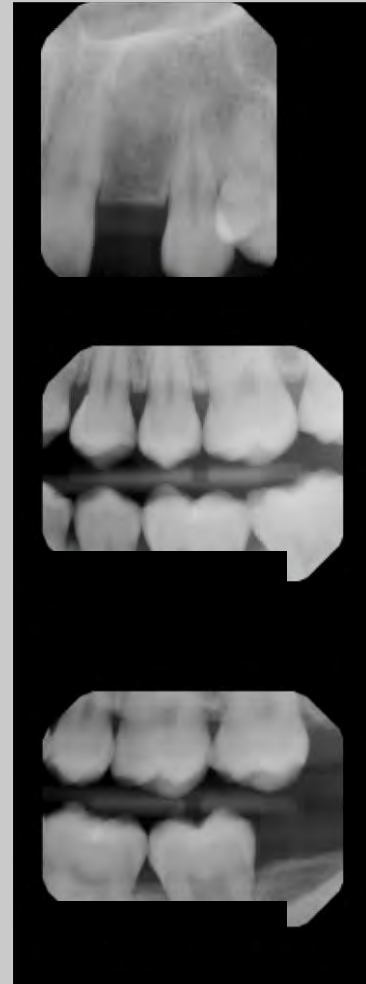
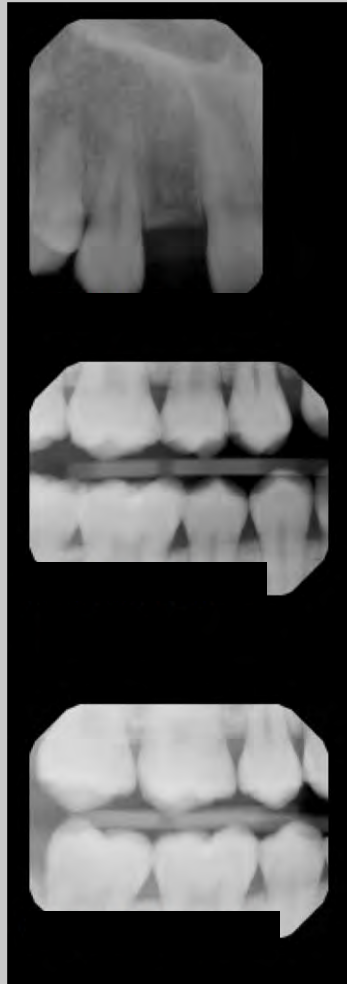
Form Question	Answer
Centric Relation (CR) Observations	
Locating CR is:	Easy
<input checked="" type="checkbox"/> Discomfort to load testing?	N
If symptomatic, then conduct pain consult or schedule follow-up appt.	
<input checked="" type="checkbox"/> CR-MI discrepancy	Y
Forward Slide (mm)	2
Lateral slide to the right (mm)	0
Lateral slide to the left (mm)	2
Initial Contact: Maxillary tooth	6
Initial Contact: Mandibular tooth	27

Form Question	Answer
Muscle and Tendon Exam	
<input checked="" type="checkbox"/> Tenderness of muscles of mastication?	N
Does the tongue have scalloped borders?	N
Is there a Linea alba present?	N
TMJ Exam	
<input checked="" type="checkbox"/> Is Mandibular opening restricted, deviated, or uneven?	N
What is the maximum mandibular opening (mm)?	42
Extent of right lateral mandibular movement (mm)?	10
Extent of left lateral mandibular movement (mm)?	8
Extent of protrusive mandibular movement (mm)?	7
<input checked="" type="checkbox"/> TMJ Discomfort to palpation:	N
<input checked="" type="checkbox"/> TMJ "sounds" during opening or closing	N
Any TMJ-related complaints not mentioned above?	
Maximum Intercuspation (MI) Observation	
Classification of right canine	Class I
Classification of left canine	Class I
Right canine vertical overlap (mm)	2
Right canine functional horizontal overlap (mm)	3
Left canine vertical overlap (mm)	3
Left canine functional horizontal overlap (mm)	4
Central incisor vertical overlap (mm)	3
Central incisor functional horizontal overlap (mm)	4
Anterior wear facets	None
Posterior wear facets	Minimal
<input checked="" type="checkbox"/> Is there fremitus? (If yes, indicate where.)	N

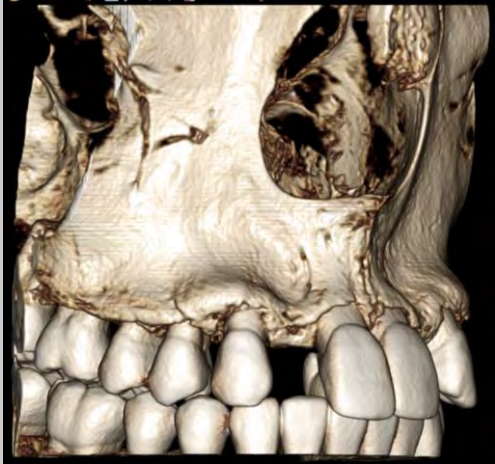
Panoramic Radiograph



Bitewings & PAs



Radiography: CBCT



Ideal Treatment Plan:

Radiographs needed for Tx Planning:

Panoramic Film

Bitewings - 4 films

Intraoral-periapical film (#7, #10)

Urgent Phase: Stay-plate for esthetics - Patient already had one at time of ODTP

Disease Control Phase :

Adult Prophylaxis

Reconstructive Phase

Implant- Detailed Oral Evaluation

Morita Accutoma Specified are w/ interpret

Bone Graft at time of implant (#7 & #10)

Guided tissue regen-resorb (#7 & #10)

Surg placement, endosteal implant (#7 & #10)

Xray/surg implant index/report

Single crown, implant supported (Angled Screw Channel)- porcelain (inlc 6057)
(#7 & #10):

- a. L6065-1: implant supported porcelain crown- Mastercast

Composite on the Facial of #9 to remove hypocalcification

Maintenance Phase :

Occlusal Night Guard and 4 month Recall

Hebel, Ken, et al. "Single-Tooth Replacement: Bridge vs. Implant-Supported Restoration." *Canadian Dental Association*. Sept. 2000; 66(8). www.cda-adc.ca/jcd/vol_66/issue-8/635.html

Tekade, Suruchi Jatol, et al. "Multidisciplinary Approach to Bilaterally Missing Lateral Incisors : A Case Report ." *Clinics and Practice* , Pagepress , 2019, www.clinicsandpractice.org/index.php/cep/article/view/1086/288.

Alternative Treatment Options

Option 1 - Cantilever pontic off of #6 and #11

Guided tissue regen-resorb (7&10)
Pontic- Porcelain/ceramic
Abutment- retainer, porcelain/ceramic FPD

Nuvvula, S., Mohapatra, A., Kiranmayi, M., & Rekhalkshmi, K. (2011). Anterior fixed interim prosthesis with natural tooth crown as pontic subsequent to replantation failure. *Journal of conservative dentistry: JCD*, 14(4), 432.

Alternative Treatment Options

Option 2 - Maryland Bridge = Resin bonded fixed partial denture

Guided tissue regen-resorb (7&10)

Pontic- Porcelain/ceramic +Wings/framework



Alternative Treatment Options

Option 3 - Orthodontic Treatment

Comp ortho tx of adult dentition - UA/LA

Went with the Ideal Tx plan..

Diagnostic Wax-Up:

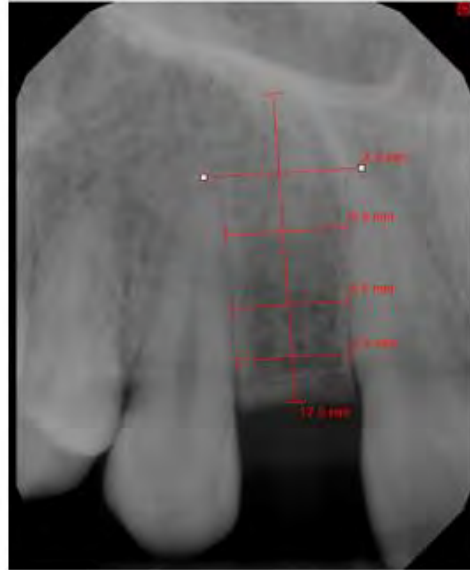


Try-in Smile Design

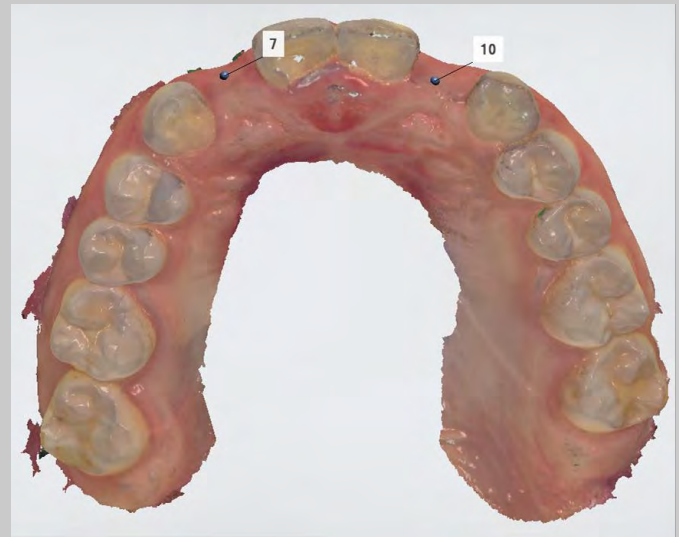
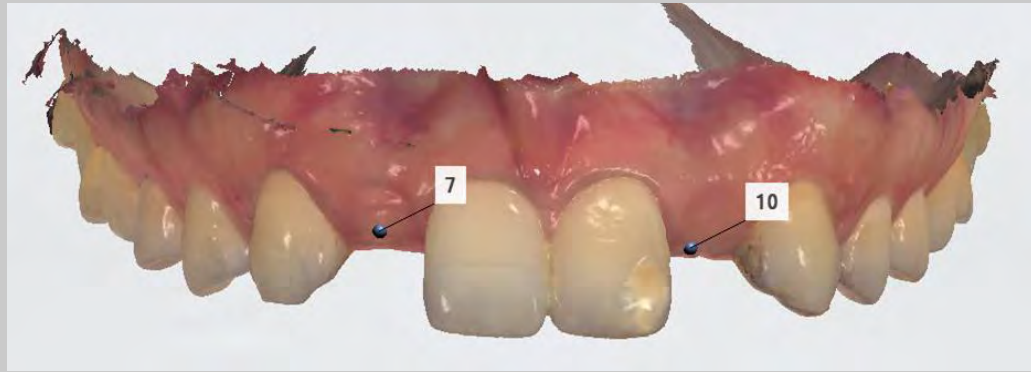


Planning for Implants:

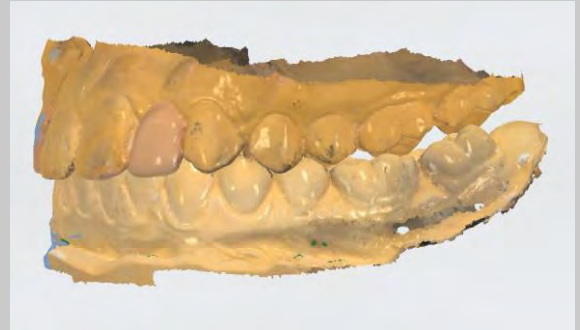
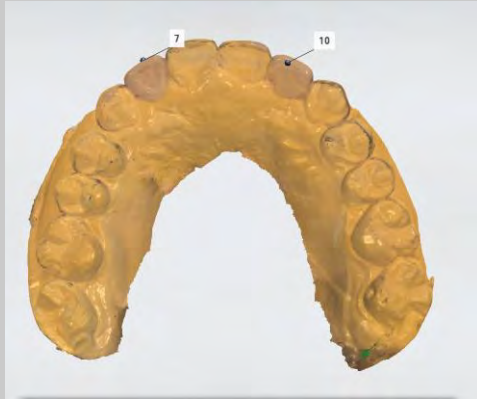
- Implant Sites: 7 and 10
- Implant Brand: Straumann, bone level taper
- Implant dimensions:
 - 3.3 mm x 12 mm



Trios Scan



Trios Scan of Diagnostics Wax-Up for 3-D printed Surgical Stent



3-D printed Surgical Guide

Surgical guide



Upper jaw

Selected sleeve

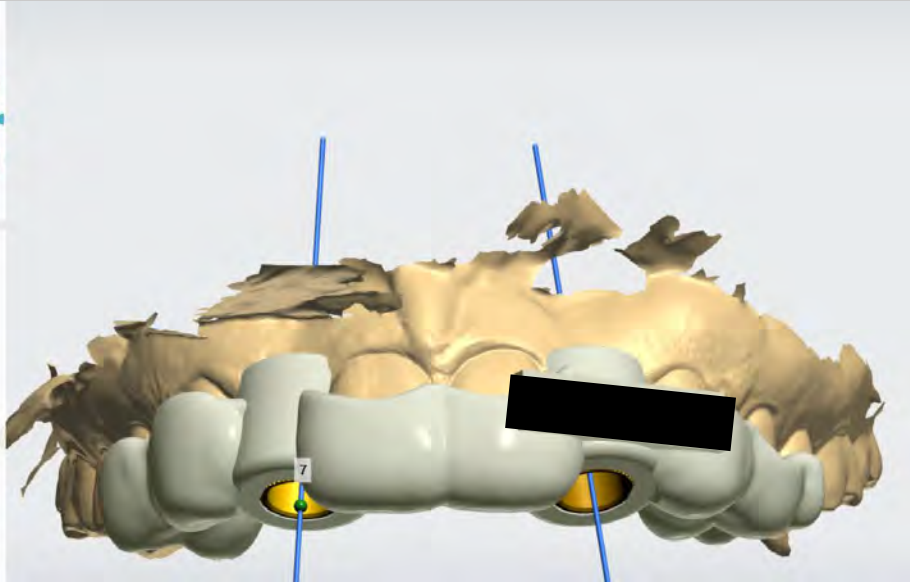
Straumann Ø 5.0 mm Sleeve

Manufacturer

Formlabs - Form 2 - Dental SG

Surgical guide settings

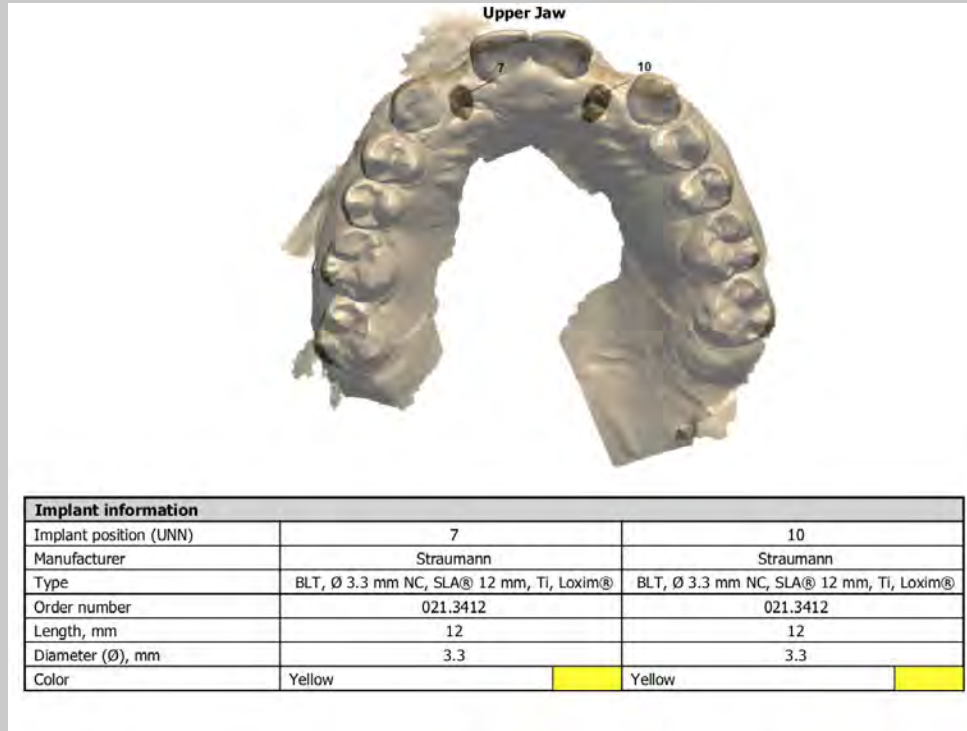
Thickness	2.00 mm
Offset from teeth	0.0600 mm
Retention amount	0.0000 mm
Offset from sleeve	-0.05 mm



Drilling Protocol

Implant position	Implant Art. No.	Implant	Sleeve Art. No.	Sleeve	Sleeve height	Sleeve position	Basic implant bed preparation		
							Milling cutter	Guided drill	Cylinder of drill handle
7	021.3412	BLT, Ø 3.3 mm NC, SLA® 12 mm, Ti, Loxim®	034.050V4	Ø 5.0 mm Sleeve	5 mm	H6	Ø 2.80 mm 	 Long 24 mm	• +1 mm
10	021.3412	BLT, Ø 3.3 mm NC, SLA® 12 mm, Ti, Loxim®	034.050V4	Ø 5.0 mm Sleeve	5 mm	H6	Ø 2.80 mm 	 Long 24 mm	• +1 mm

Surgical Planning



Implant Placement

-Surgery:

-On sites #7 and #10: Full thickness mini flaps were raised, A tunnel approach was used to explore the facial and confirm need for grafting

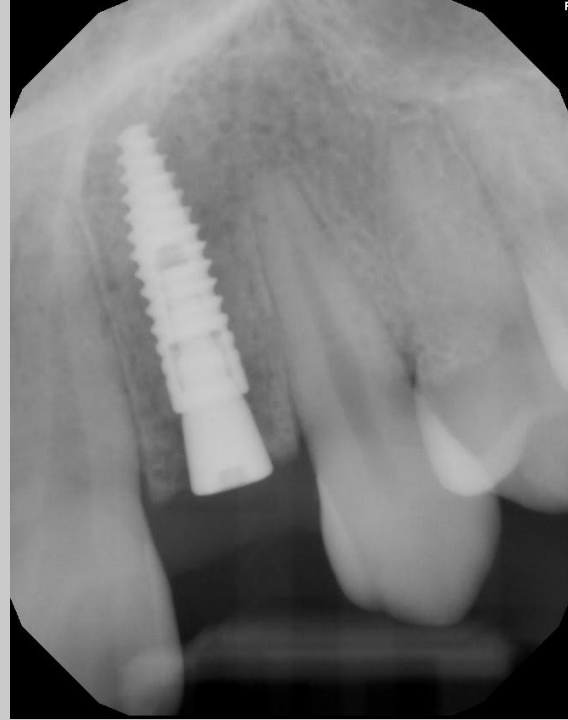
-Implants were placed using a computer generated surgical guide

-Guided bone regeneration using Xeno-Graft (Bio-Oss)

-Followed by a Bio-Guide collagen membrane

-Both Sites were sutured with primary closure, using 4.0 chromic gut

Post- Implant Placement Radiographs

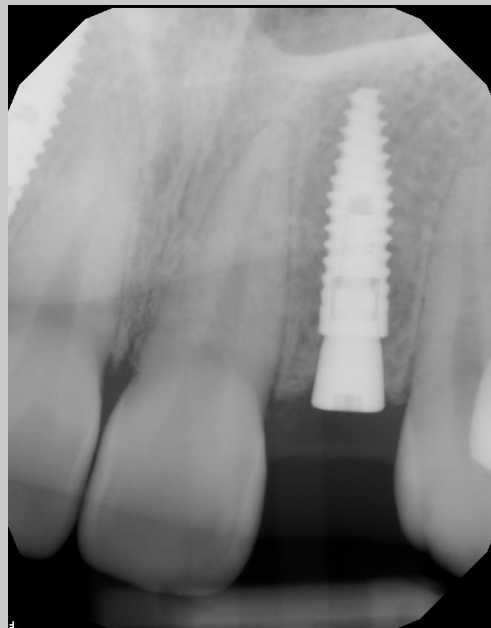


7 days Post Implant Placement



Osseointegration check (3-months after surgery)

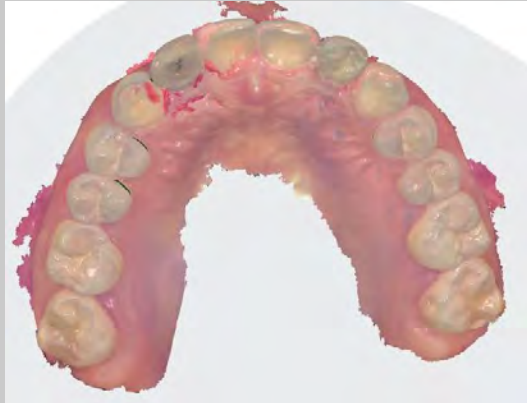
-At this time we performed implant uncovering, using a 3mm Tissue Punch



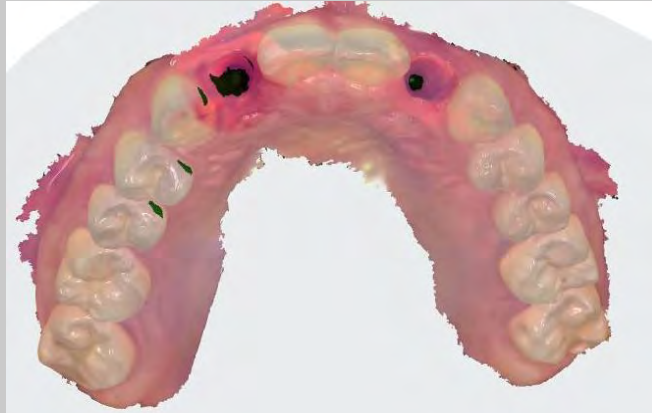
Implant Temporaries



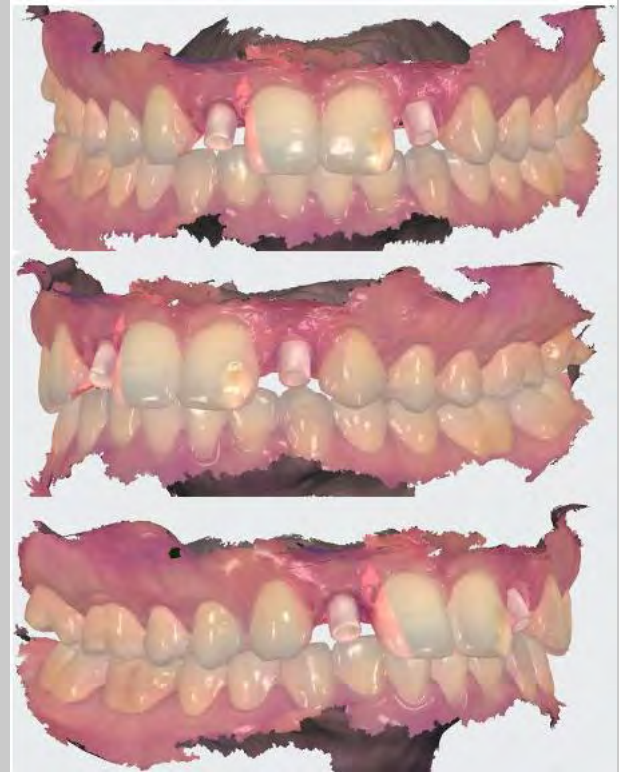
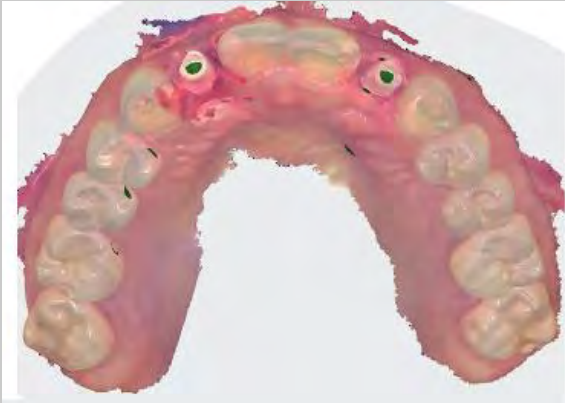
Scan of Implant Temporaries



Final Impression using a Trios-3 Shape Scanner



Final Impression



Implant Crowns

-Implants #7 and #10
are Straumann Angled
Screw Channel crowns



Delivery

-Both implants were torqued to 35 Ncm



Delivery: Radiographs

- Implants were tried in, interproximal contacts were minimally adjusted
- Verification radiographs were taken
- Occlusal adjustments were made as needed



Day of Delivery Photographs

-Implants #7 and #10

-Facial Composite #9





3 Month Follow Up







Resources

1. Goldman, I. (1952). The goal of full mouth rehabilitation. *The Journal of Prosthetic Dentistry*, 2(2), 246-251.
2. Hebel, Ken, et al. "Single-Tooth Replacement: Bridge vs. Implant-Supported Restoration." *Canadian Dental Association*. Sept. 2000; 66(8). www.cda-adc.ca/jcda/vol-66/issue-8/435.html.
3. Sheridan, Rachel A., et al. "The Role of Occlusion in Implant Therapy." *Implant Dentistry*, vol. 25, no. 6, 2016, pp. 829–838.
4. Tekade, Suruchi Jatol, et al. "Multidisciplinary Approach to Bilaterally Missing Lateral Incisors : A Case Report ." *Clinics and Practice* , Pagepress , 2019, www.clinicsandpractice.org/index.php/cp/article/view/1086/948.
5. Kokich, Vincent O., and Gregory A. Kinzer. "Managing Congenitally Missing Lateral Incisors. Part I: Canine Substitution." *The Canadian Journal of Chemical Engineering*, Wiley-Blackwell, 30 Oct. 2006, onlinelibrary.wiley.com/doi/abs/10.1111/j.1708-8240.2005.tb00076.x?sid=nlm%3Apubmed.
6. Nuvvula, S., Mohapatra, A., Kiranmayi, M., & Rekhalkshmi, K. (2011). Anterior fixed interim prosthesis with natural tooth crown as pontic subsequent to replantation failure. *Journal of conservative dentistry: JCD*, 14(4), 432.
7. Fugazzotto, Paul. "Evidence-Based Decision Making: Replacement of the Single Missing Tooth." *NeuroImage*, Academic Press, 10 Feb. 2009, www.sciencedirect.com/science/article/pii/S0011853208000827?via%3Dihub.
<https://doi.org/10.1016/j.cden.2008.10.001>