

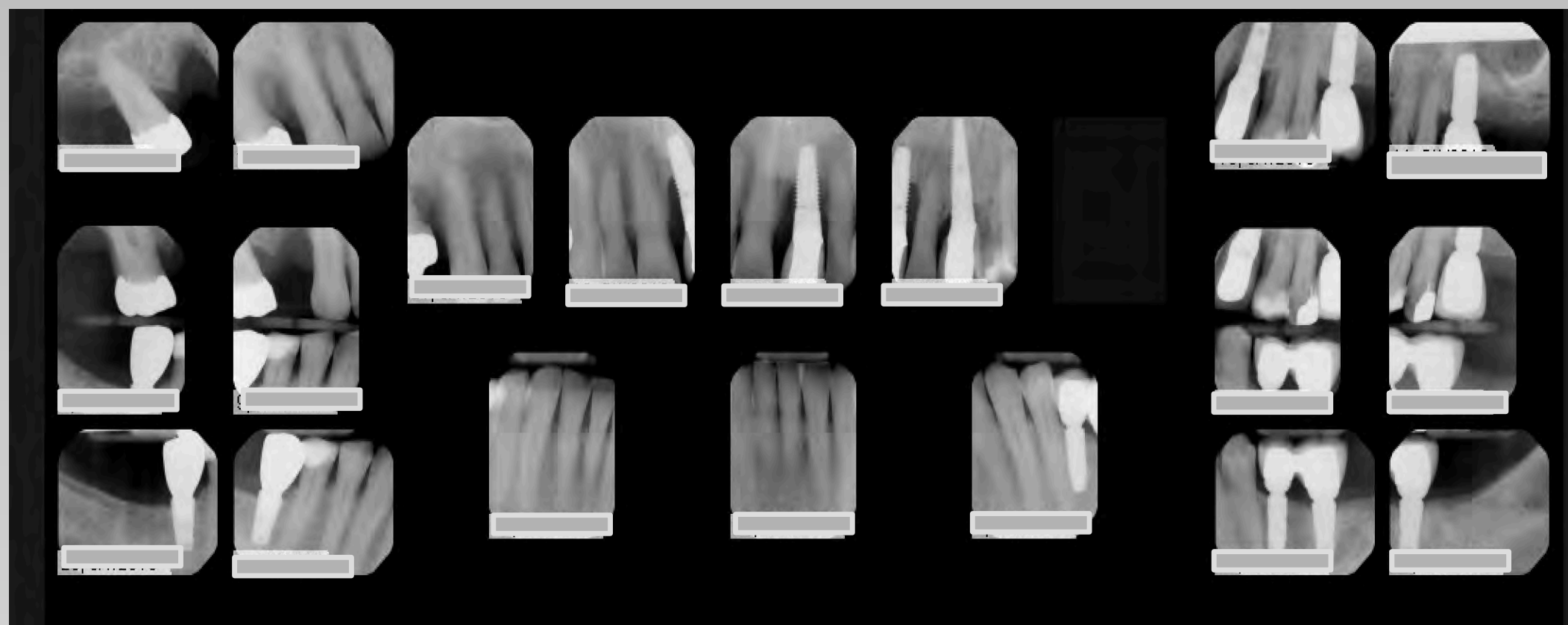
Restoring Dentition with Indirect Restorations using Trios and CEREC

Digital Dentistry

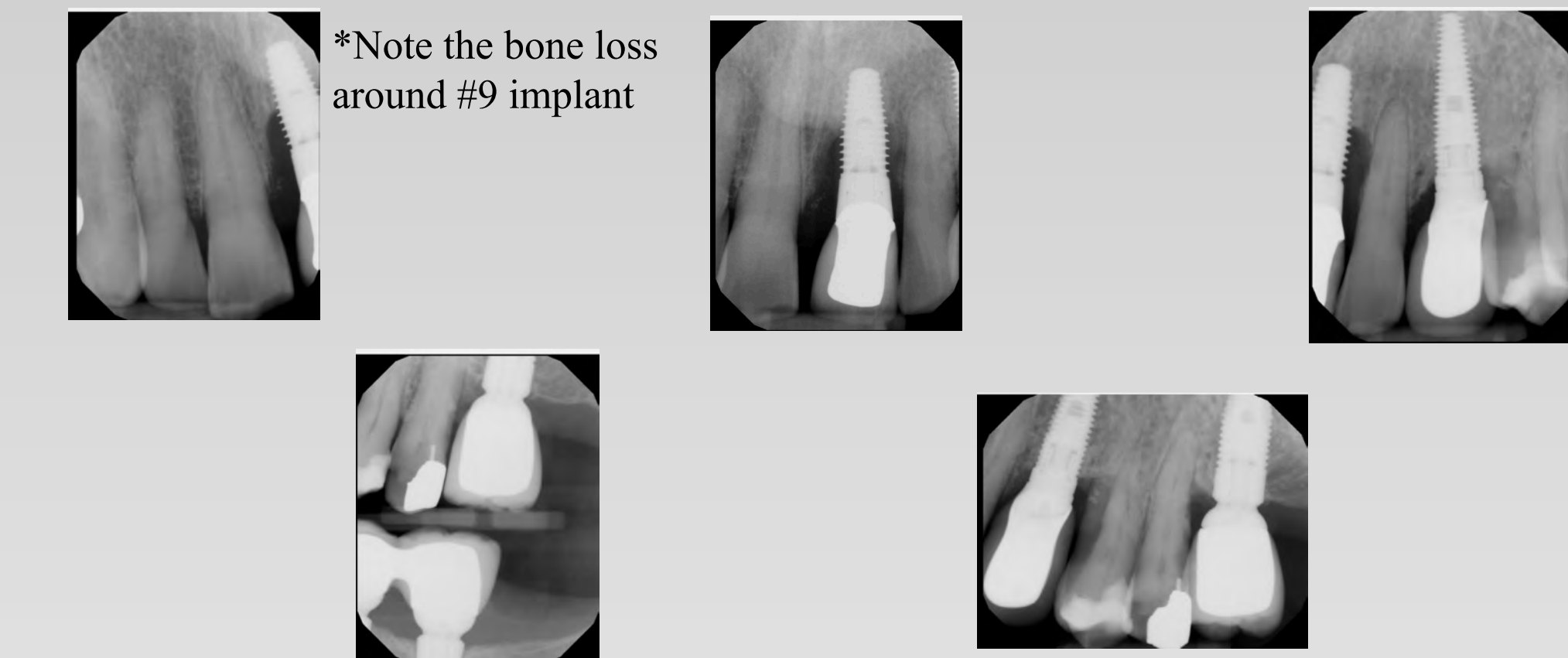
Marwa Elkharsity, DDS 2020



Radiographs



*Note the bone loss around #9 implant



Periodontal Findings

Diagnosis: Generalized Chronic Moderate Periodontitis with Localized Severe Bone Loss

Plaque Index: 0.5; Good

Stage and Grade: Stage II Grade C

Good OHI- Brushes 2x/day with Oral B, flosses daily, regular hygiene visits

	3	1	3	3	1	3	3	1	3	8	12	12	3	3	3	2	3	4	2	2	PD
Bleed	8			8						8	8	8	8	8	8	8	8	8	8	8	8
FreeGM	4	4	5	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Attach	9	5	8	4	2	4	2	4	2	4	4	4	3	2	3	7	6	7	6	6	4
Furcation																					
MG Inv																					
Calc																					
Mobil																					

	3	3	4	4	3	3	2	3	3	3	3	3	2	3	6	5	3	3	2	3	Diag
Attach	3	3	4	4	3	3	2	3	3	3	3	3	3	2	3	6	5	3	3	2	
FreeGM	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	
Bleed	8																				
PD	3	3	4	4	3	3	2	3	3	3	3	3	2	3	6	5	3	3	2		
Mobil																					
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Attach	4	5	6	5	4	4	3	4	3	3	3	3	3	3	3	3	3	3	3		
FreeGM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Bleed	8																				
PD	4	5	6	5	4	4	3	4	3	3	3	3	3	3	3	3	3	3	3		

Caries Risk Assessment

Caries Risk: Low

ATP Reading: Low, 986

Saliva pH: 7

Saliva Flow: Adequate, non-copious, watery salivary flow

Consistent oral health care visits

Pre-Operative and Mid-Operative Treatment Trios Use

Image 1: Initial Exam Maxillary



Image 2: Anterior view showing edge-to-edge occlusion



Image 3: #9 implant presented with a sinus tract and bone loss



Image 4: Occlusal view after #9 implant extractions

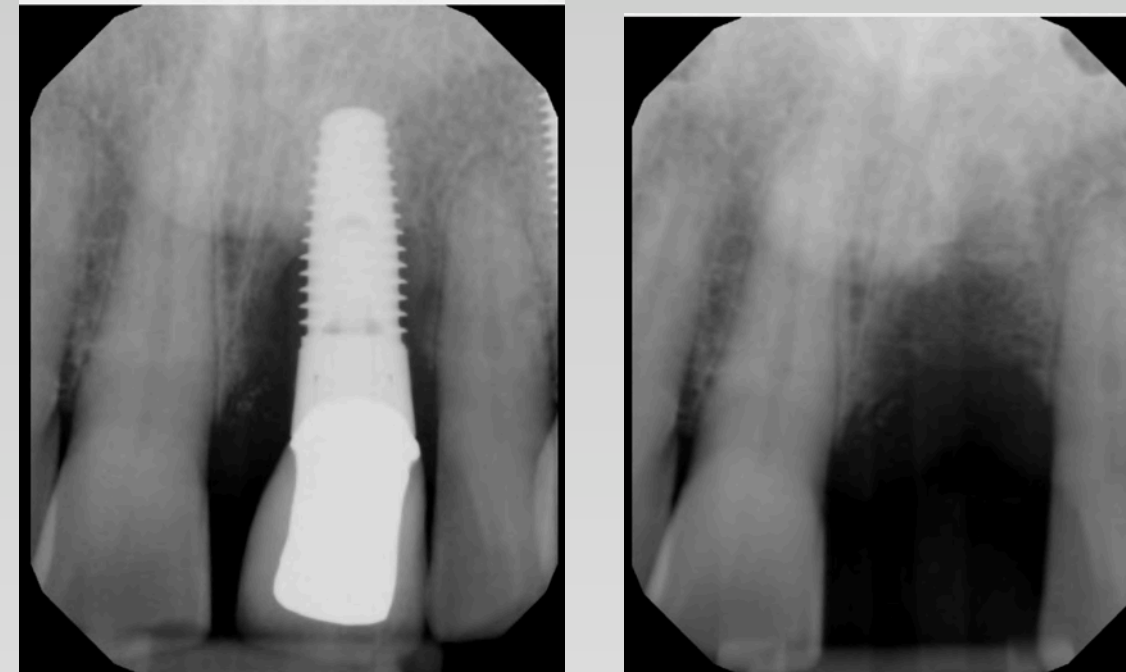


Image 5: #9 implant with significant bone loss, the image on the right shows 3 months post-implant removal. This X-ray was also used to determine bridge restorability

Image 6: Anterior view of #9-#10 bridge preparation

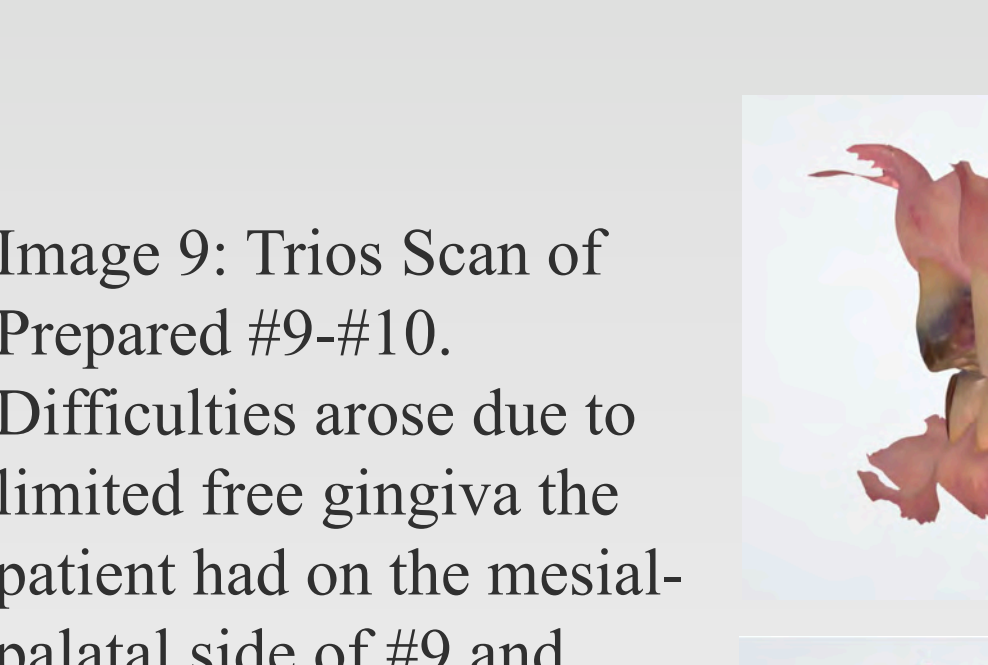


Image 7: Occlusal view of #9-#10 bridge preparation

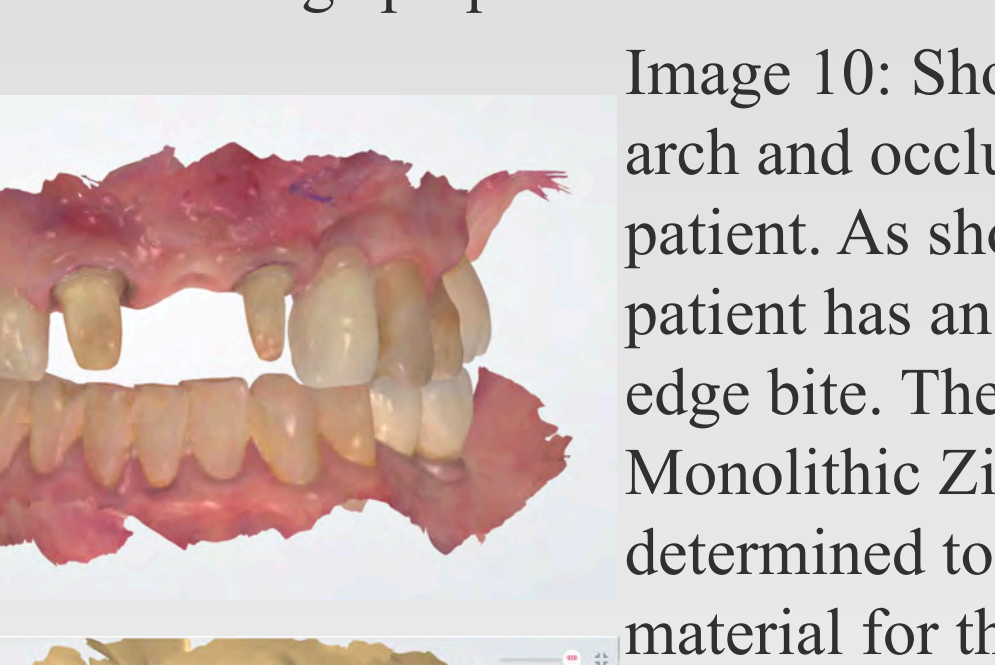


Image 8: view of #9-#10 bridge preparation, showing draw

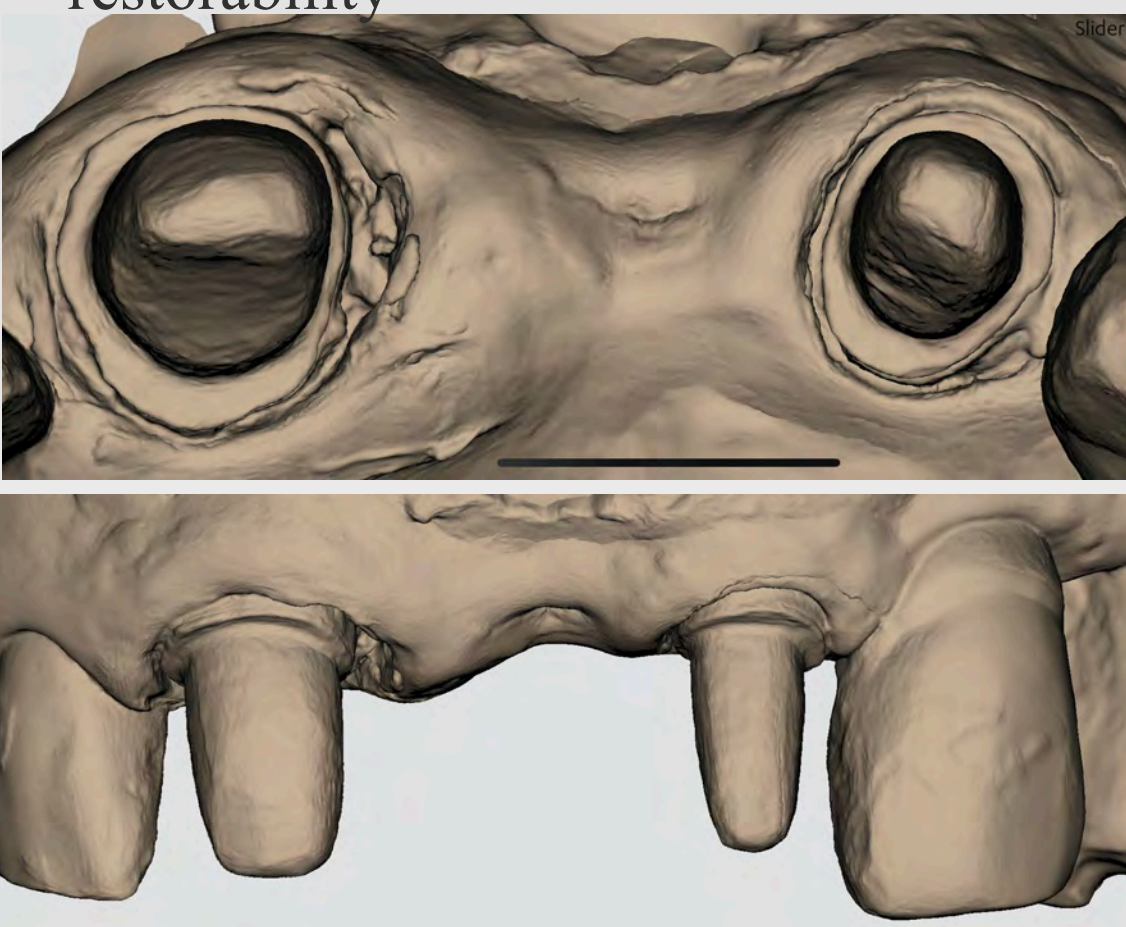
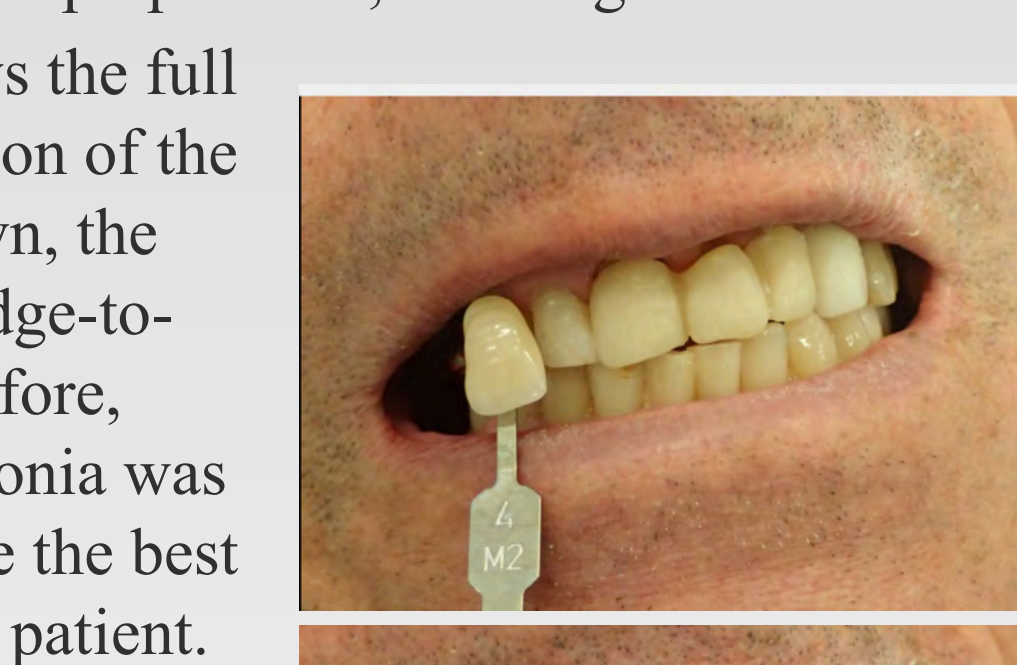


Image 9: Trios Scan of Prepared #9-#10. Difficulties arose due to limited free gingiva the patient had on the mesial-palatal side of #9 and distal-palatal side of #10.

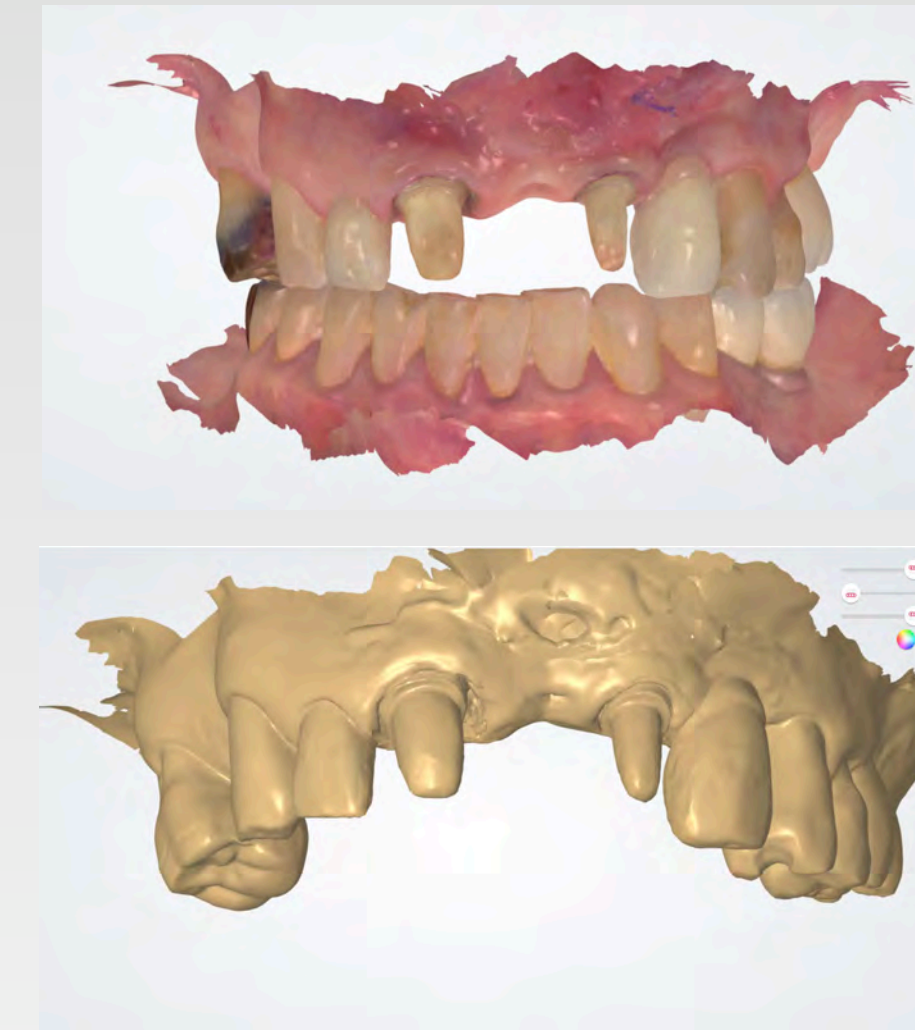
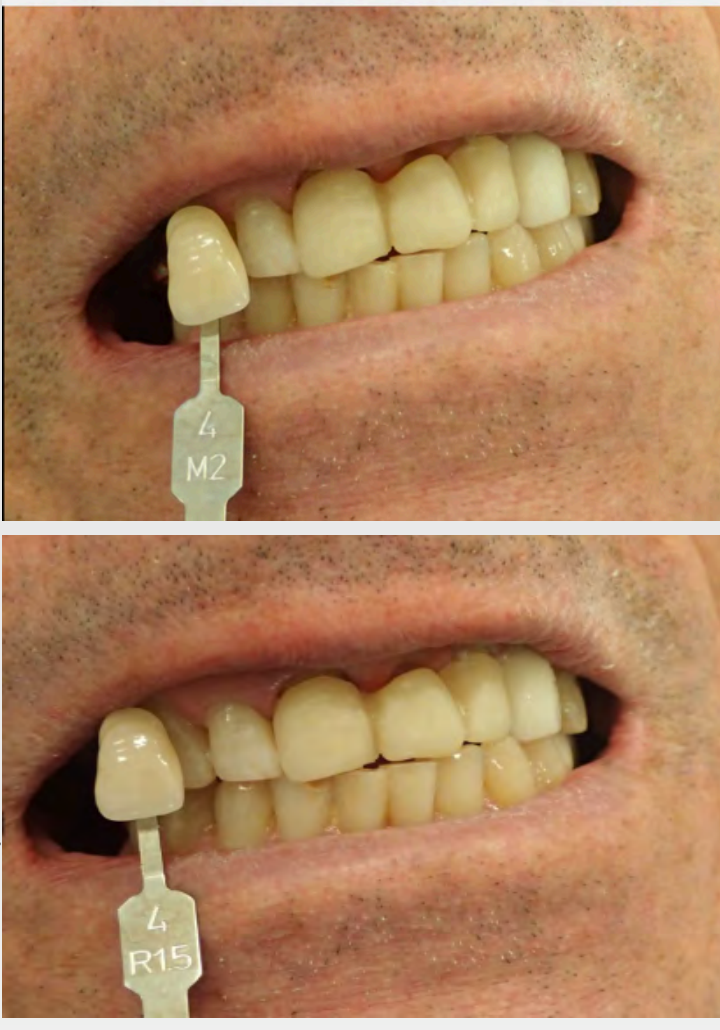


Image 10: Shows the full arch and occlusion of the patient. As shown, the patient has an edge-to-edge bite. Therefore, Monolithic Zirconia was determined to be the best material for this patient.

Image 11: Shows fabricated temporary. Due to Monolithic Zirconia being the material of choice, multiple shades were recorded to show characterization.



Mid-Operative Treatment CEREC Use



Image 13: Fractured #13 with existing gold onlay and pin



Image 14: The preparation was completed supra-gingivally so that tooth structure is conserved and to increase bonding on enamel.

Final Restoration CEREC Use

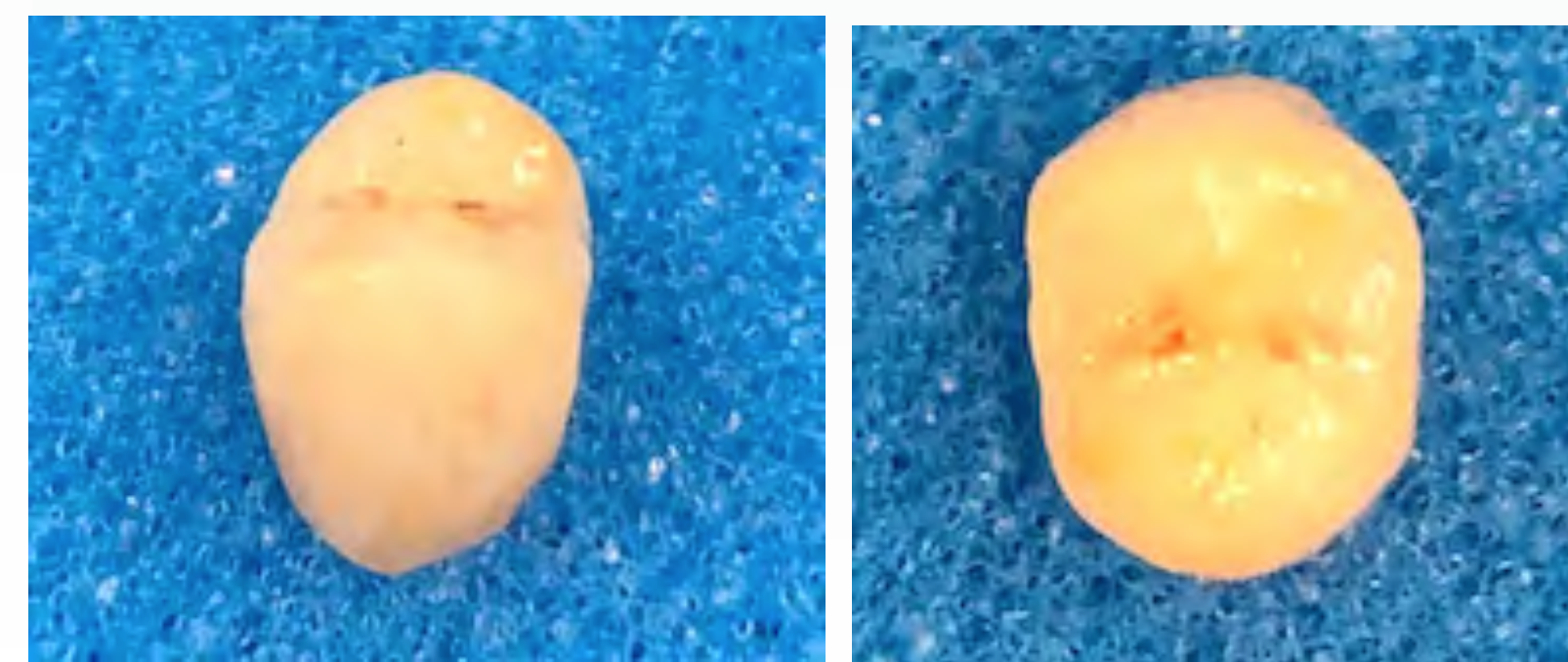


Image 15: #13 was designed and milled under the guidance of Dr. Tiller and stained and glazed under the guidance of Carlos Correa. All completed in house.



Image 16: Final Cementation of #13 crown. Detail given to capture natural esthetics.

Final Restoration Trios Use



Image 15: Side by side before and after photographs of #8-#10

Ideal Treatment Plan

Urgent

Removal of #9 Implant

Disease Control

#13 Build-Up

Reconstructive Phase

Bone Graft #9

Implant Placement #9

Evaluate #5 extraction site for implant placement

E.Max Crown #13

Maintenance

OHI, Prophyl, 6 months Recall

Alternative Treatment Plan #1

Urgent

Removal of #9 Implant

Disease Control

#13 Build-Up

Reconstructive Phase

E.Max Crown #13

Monolithic Zirconia Bridge #8-#10

Evaluate #5 extraction site for implant placement

Maintenance

OHI, Prophyl, 6 months Recall

Alternative Treatment Plan #2

Urgent

Removal of #9 Implant

Disease Control

#13 Build-Up

Reconstructive Phase

Survey Crown #13

Removable Maxillary Partial Denture

Maintenance

OHI, Prophyl, 6 months Recall

Treatment considerations

The patient presented with a recently extracted #5 and a fractured #13. #13 and #5 were addressed first to establish posterior occlusion. Site #5 was evaluated and required a 3 month re-assessment. #13 was addressed first. Due to the location of the fracture, the margin was able to be placed supra-gingivally and onto enamel. Therefore, #13 became a great candidate for CEREC Scanning, Milling, & Staining & Glazing. Due to the ability to bond to enamel, this increased the bonding strength for a Lithium Disilicate E. Max crown.³

With the failing implant in site #9, the patient was initially interested in implant placement but due to limited buccal plate the patient opted for bridge placement.¹ The patient was only interested in fixed options; this eliminated the partial as a treatment option.² Studies have shown that patient compliance plays a larger factor than meeting Ante's Law in the prosthesis longevity. Due to the patient's history of compliance, the bridge was determined to be the most suitable for this patient. Monolithic Zirconia was determined over Layered Zirconia due to edge-to-edge bite causing increased chance of layered zirconia fracture.

Acknowledgements

I would like to thank Dr. Tiller, Dr. Reid and Dr. McLaren for their time and knowledge. I would like to extend my gratitude and appreciation for my patient's trust in allowing me to deliver his dental needs and seeking dental treatment at the University of the Pacific Arthur A. Dugoni Dental School.

References

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*CEREC Images were not able to be obtained due to no building access because of COVID-19