

Introduction

- Peri-implantitis is a pathological condition around dental implants, characterized by the presence of inflammation and progressive loss of the supporting bone.
- Recently, laser therapy has been introduced as an adjunctive means of implant surface detoxification in conjunction with surgical and non-surgical therapies.
- The erbium,chromium:yttrium-scandium-gallium-garnet (Er,Cr:YSGG) laser operates at a wavelength of 2780nm and has the unique ability to ablate both hard and soft tissues, making it suitable for treating peri-implant diseases.
- This case report describes a patient with peri-implantitis who was managed using adjunctive laser therapy.

Case Presentation

- 45-year old male patient.
- ‘My gums have been swollen for many years’.



Figure 1: Patient’s full smile



Figure 2: Implants #7-10

Assessment

- The soft tissues around the implants were erythematous, spongy and had thick rolled margins.
- #7-10 had probing depths (PD) of 5-8mm and BOP of 100%.
- Radiographically, there were cup-shaped bony defects and calculus around the implants.

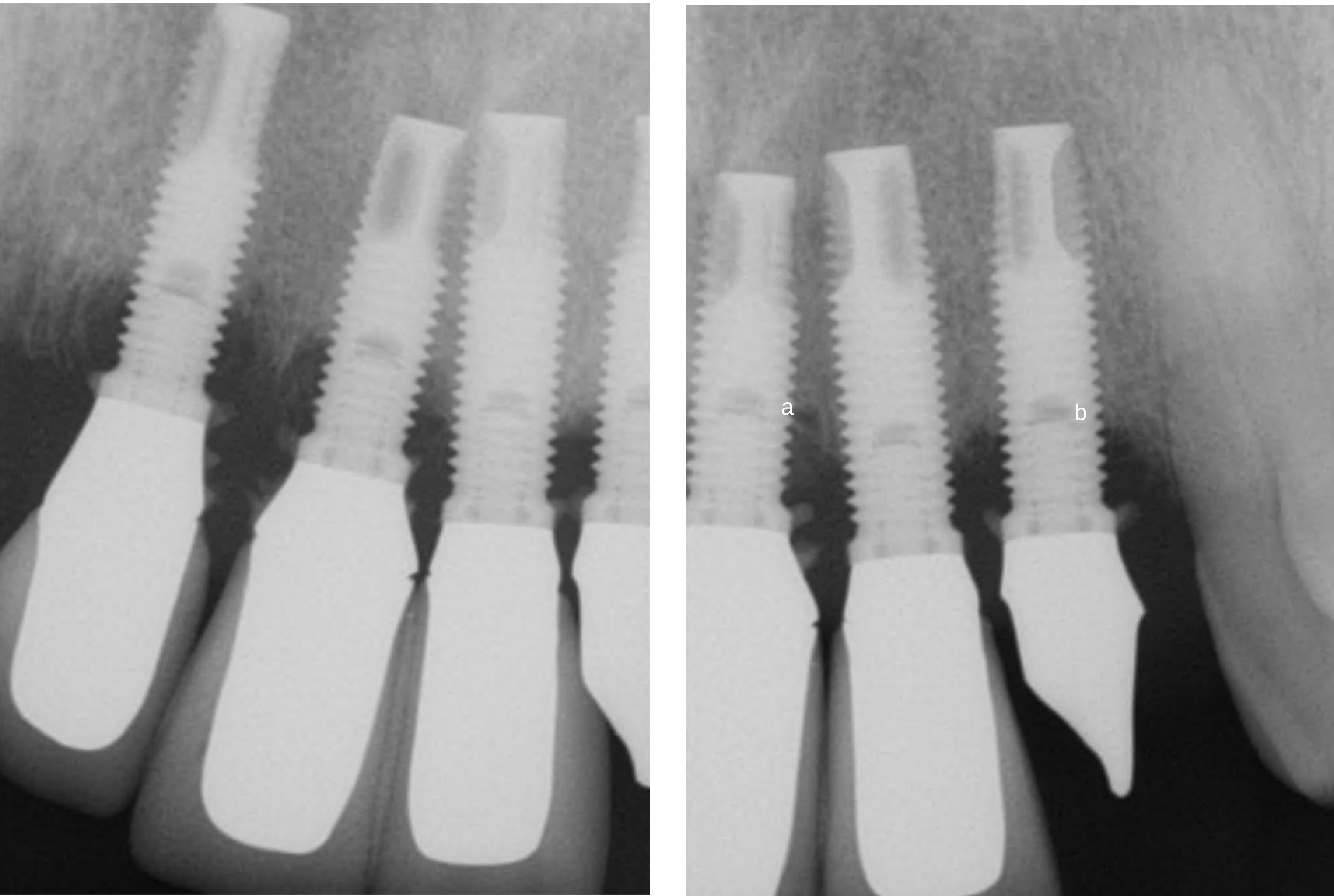


Figure 4: Periapical radiographs of implants #7-10

Diagnosis

- Peri-implantitis around implants #7-10

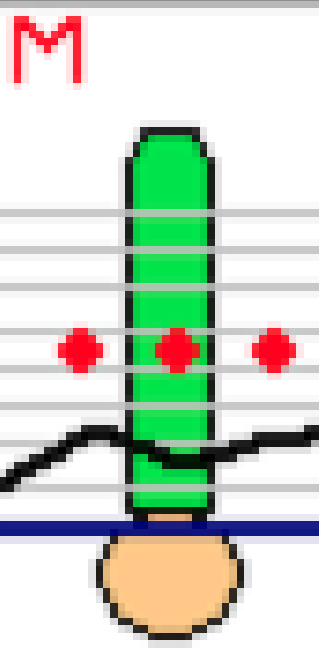
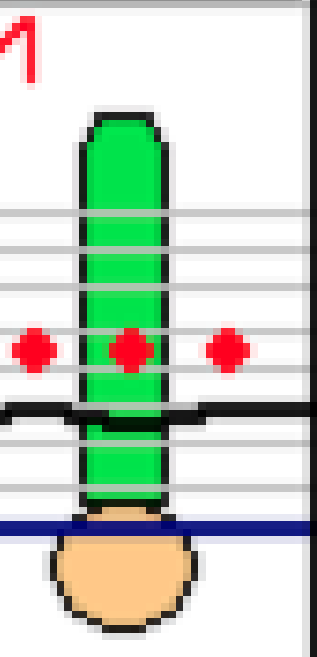
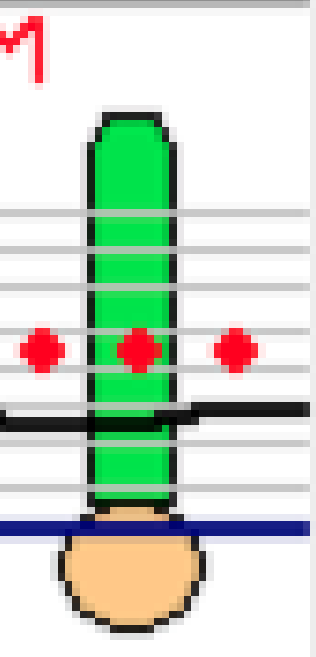
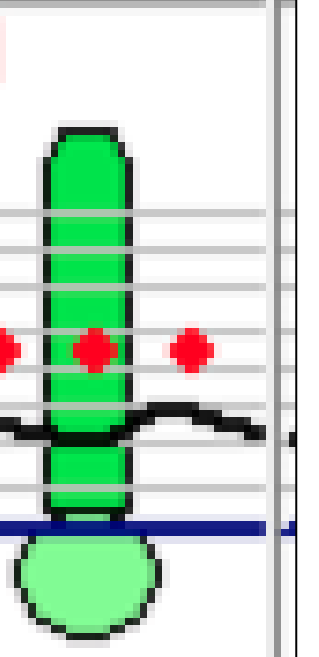
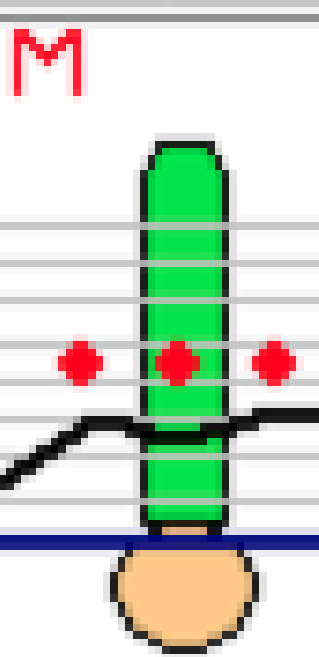
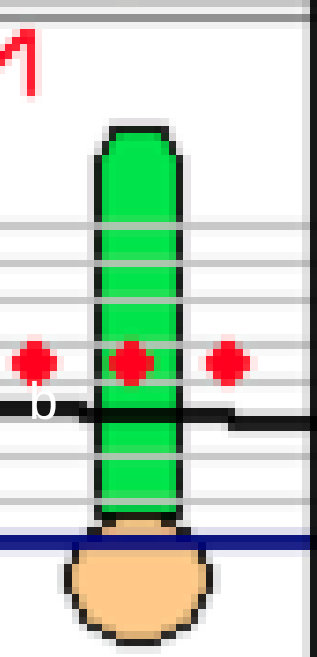
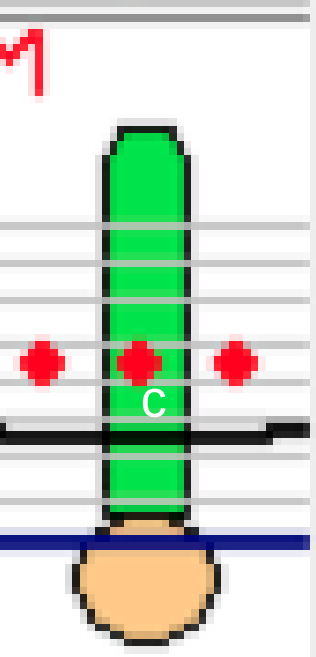
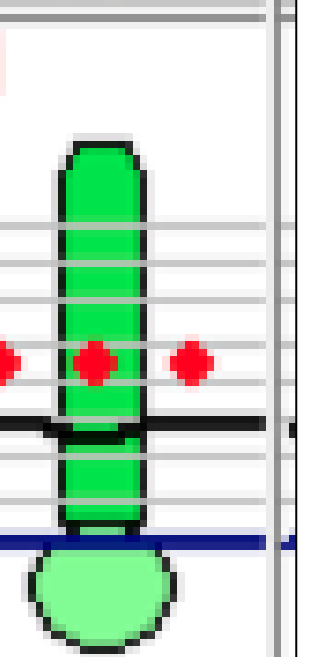
Mobil				
MG Inv	N	N	N	N
Supp				
Bleed	B B B	B B B	B B B	B B B
Probing	6 4 5	7 6 7	6 6 7	6 5 7
Furcation				
Rec				
PI				
Facial				
	7	8	9	10
Lingual				
Rec				
Furcation				
Probing	7 6 7	8 7 7	6 6 6	7 6 7
Bleed	B B B	B B B	B B B	B B B
PI				

Figure 3: Patient’s periodontal chart

Treatment

- 1) Full mouth scaling and root planing, OHI
- 2) Closed-flap laser therapy around teeth and implants using the Er,Cr:YSGG laser (Biolase, Irvine California).
- 3) Re-evaluation
- 4) Open-flap debridement around implants with the Er,Cr:YSGG laser (Biolase, Irvine California) and apically positioned flap.
- 5) Re-evaluation
- 6) Periodontal maintenance

Biolase REPAIR Implant Protocol™

	Step	Tip	Power	Air/Water	Frequency	Mode
1	Outer De-epithelialization	RFPT5	1.5W	40%/50%	30Hz	H
2	Pocket Debridement	RFPT5	1.5W	40%/50%	50Hz	H
3	Implant Decontamination	SFT8	1.5W	40%/50%	30Hz	H
4	Decortication	MZ6	2.4W	70%/80%	30Hz	H
5	Final Debridement	RFPT5	1.5W	10%/10%	50Hz	H
6	Compress with gauze	-	-	-	-	-

Results

After non-surgical laser therapy around #7-10 implants



Figure 5: One year after initial periodontal therapy. The soft tissues appeared less erythematous and swollen and there was a reduction in BOP.

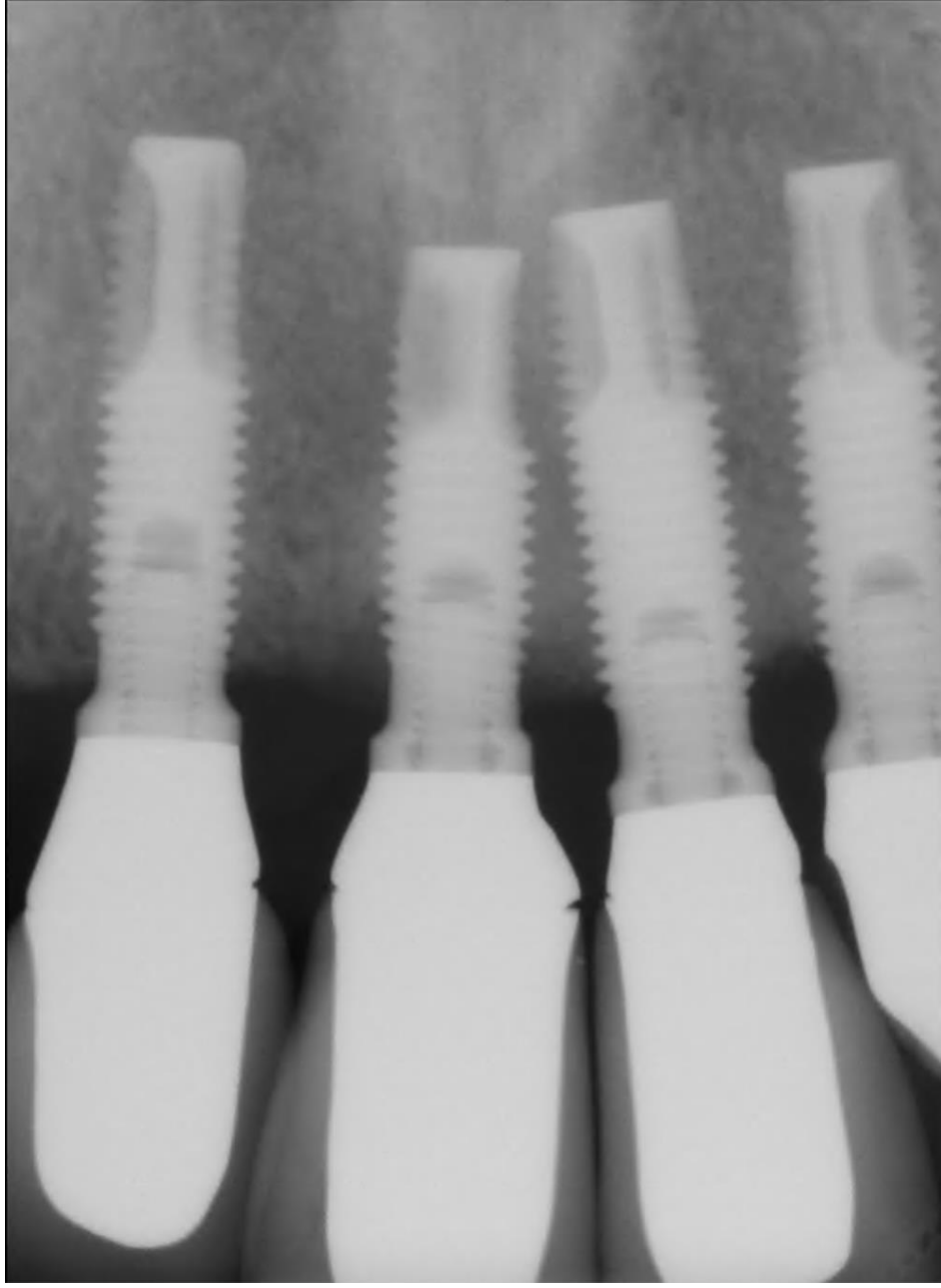
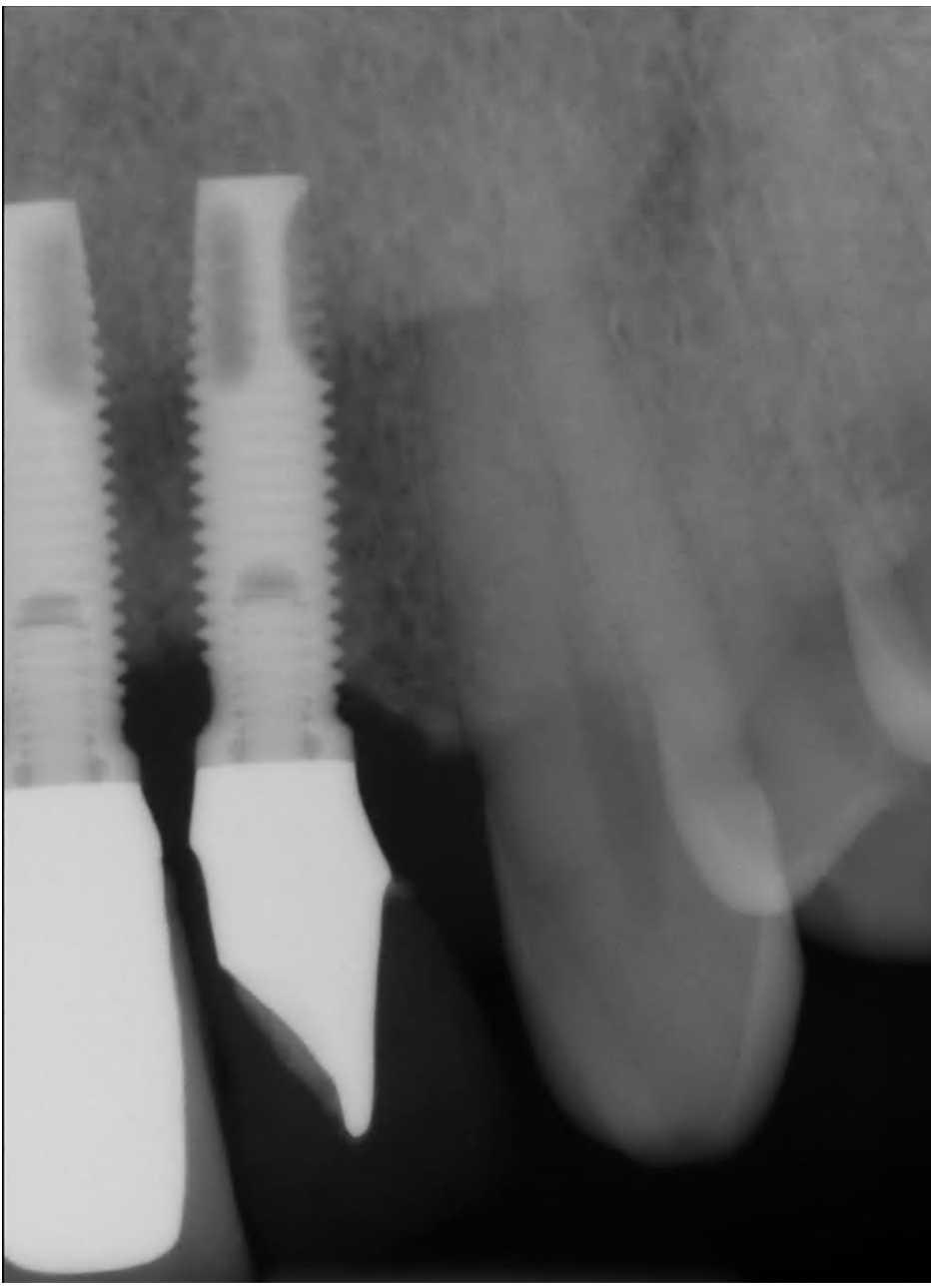


Figure 6: Periapical radiographs 1 year after non-surgical therapy with the Er,Cr:YSGG laser. Around #7-10 implants, there appeared to be radiographic evidence of bone fill.

After surgical therapy

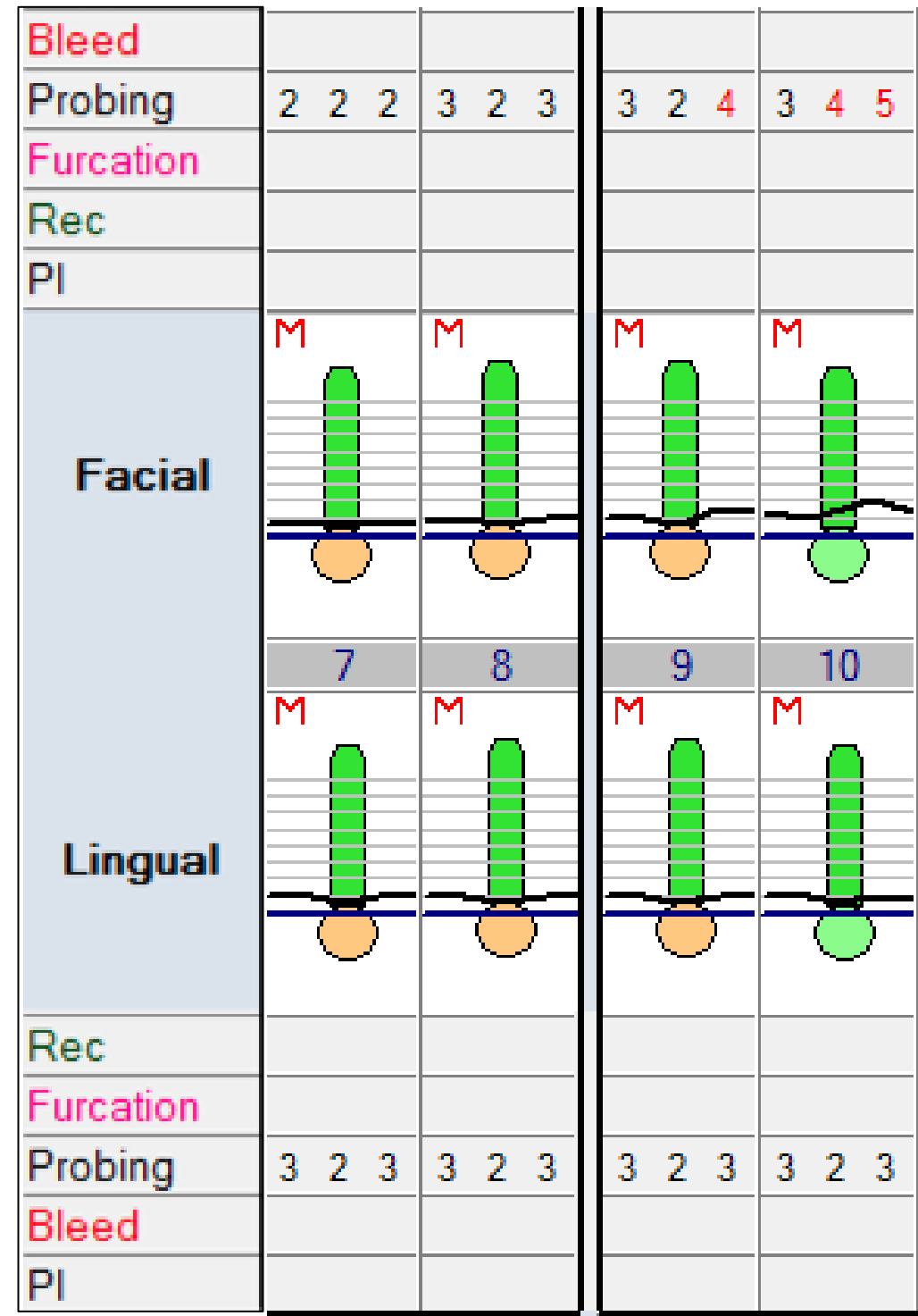


Figure 7: Periodontal chart after treatment



Figure 8: After laser debridement and apically positioned flap. Patient now has access to clean the implants.

Conclusion

- Laser assisted therapy is a valuable tool in treating peri-implantitis.
- In this case report there appeared to be radiographic bone fill around the implants using the Er,Cr:YSGG laser without the use of bone augmentation.
- The use of the Er,Cr:YSGG laser can be helpful in reducing bleeding on probing and pocket depths when used in conjunction with surgical and non-surgical modalities.

References

1. Schwarz F, Derks J, Monje A, Wang HL. Peri-implantitis. J Periodontol. 2018 Jun;89:S267–90.
2. Lin GH, Suárez López Del Amo F, Wang HL. Laser therapy for treatment of peri-implant mucositis and peri-implantitis: An American Academy of Periodontology best evidence review. J Periodontol. 2018 Jul;89(7):766–82.
3. Al-Falaki R, Cronshaw M, Hughes FJ. Treatment outcome following use of the erbium, chromium:yttrium, scandium, gallium, garnet laser in the non-surgical management of peri-implantitis: a case series. Br Dent J. 2014 Oct;217(8):453–7.
4. https://www.biolase.com/media/17-0992_REPAIR_Peri-Implant_broch-r3dig.pdf