



Managing Broken Implant Supported Metal-Acrylic Full Arch Hybrid Prosthesis: A Case Report

Hui Ling Cheah, Vladia Coelho, Mohammed K. Baig, Alexis Ghanem, Alberto Kojima

Department of General Dentistry, Eastman Institute for Oral Health, University of Rochester, NY



Introduction

Monolithic zirconia can be an alternative material selection for patient that encountered prosthetic complications in the metal-acrylic hybrid prosthesis. This may provide patients with acceptable aesthetic, greater functionality and comfort.

Methods

- 60 years old female with bruxism reported broken mandibular metal-acrylic hybrid prosthesis.
- The prosthesis was repaired multiple times within 6 months after the hybrid prosthesis delivery.
- All the first molars including both maxillary overdenture and mandibular implant supported fixed-prosthesis were changed to acrylic teeth with gold occlusal surfaces. (Figure 1).
- 8 months later, the new hybrid prosthesis was fractured again at the acrylic part close to acrylic teeth #19 and #20 (Figure 3).
- All the prosthetic screws loosening was detected.
- The height of prosthetic space was about 9-10mm (Figure 2a, 2b).
- Monolithic zirconia was selected as the material of choice in this case to manage this type of complication.
- Conventional impression was taken with splinted impression post (Figure 5,6). Verification jig was made to verify the master cast (Figure 7).
- PMMA prototype was made to verify functionality, esthetic and phonetics. (Figure 8)
- Mandibular monolithic zirconia prosthesis delivery (Figure 10a, 10b)
- Maxillary occlusal guard was delivered (Figure 11).

Results

All the prosthetic screws were torqued to 15Ncm. Occlusion was checked. Follow up was made after 6 months and no prosthetic complication was encountered both clinically and radiographically. (Figure 12a, 12b, 13)



Figure 1



Figure 2 (a) Right



Figure 2 (b) Left



Figure 3

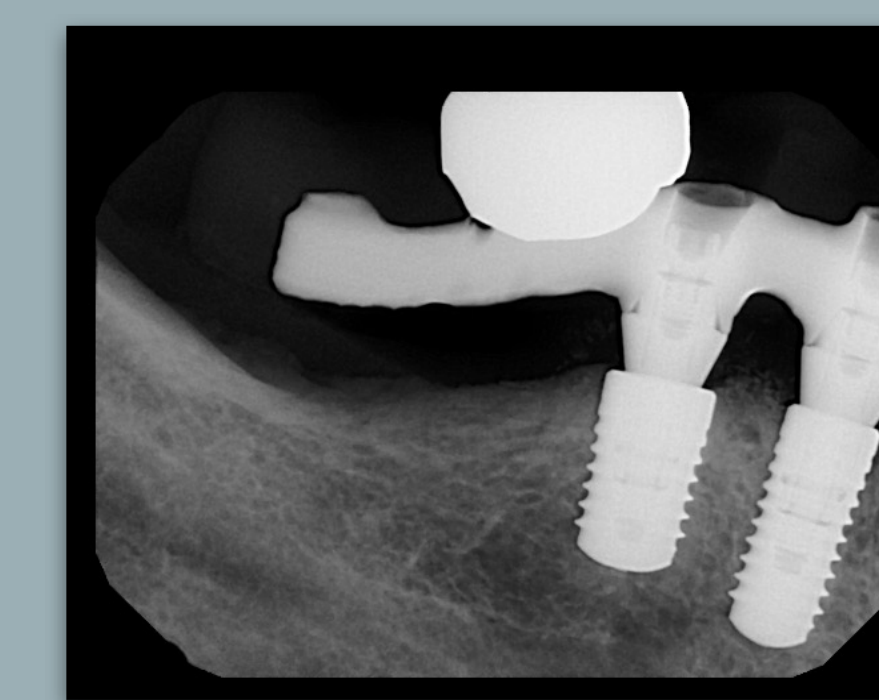
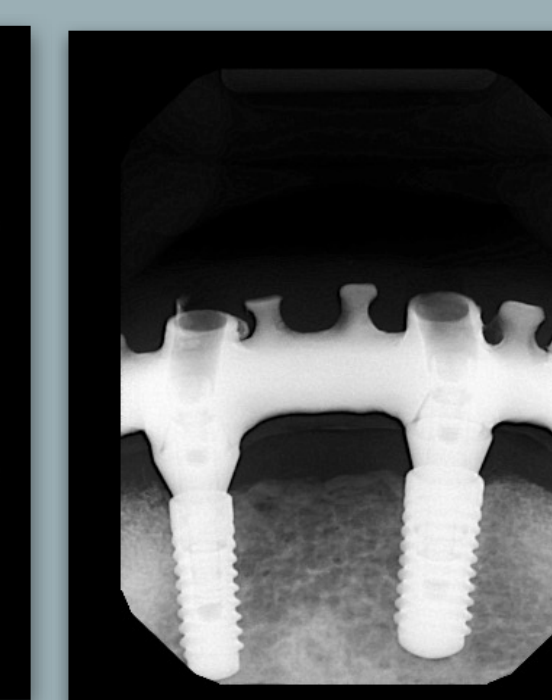
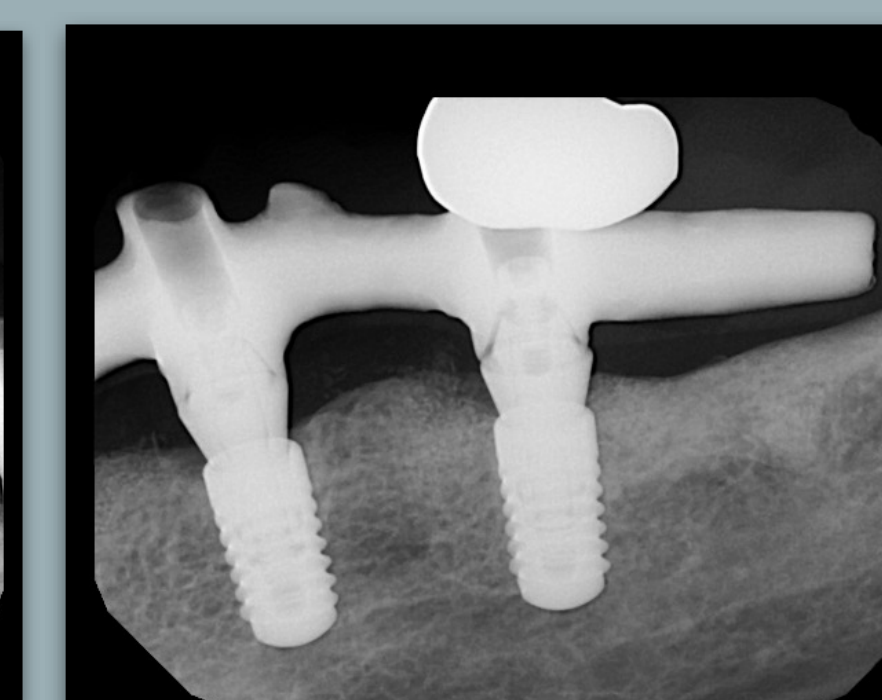


Figure 4

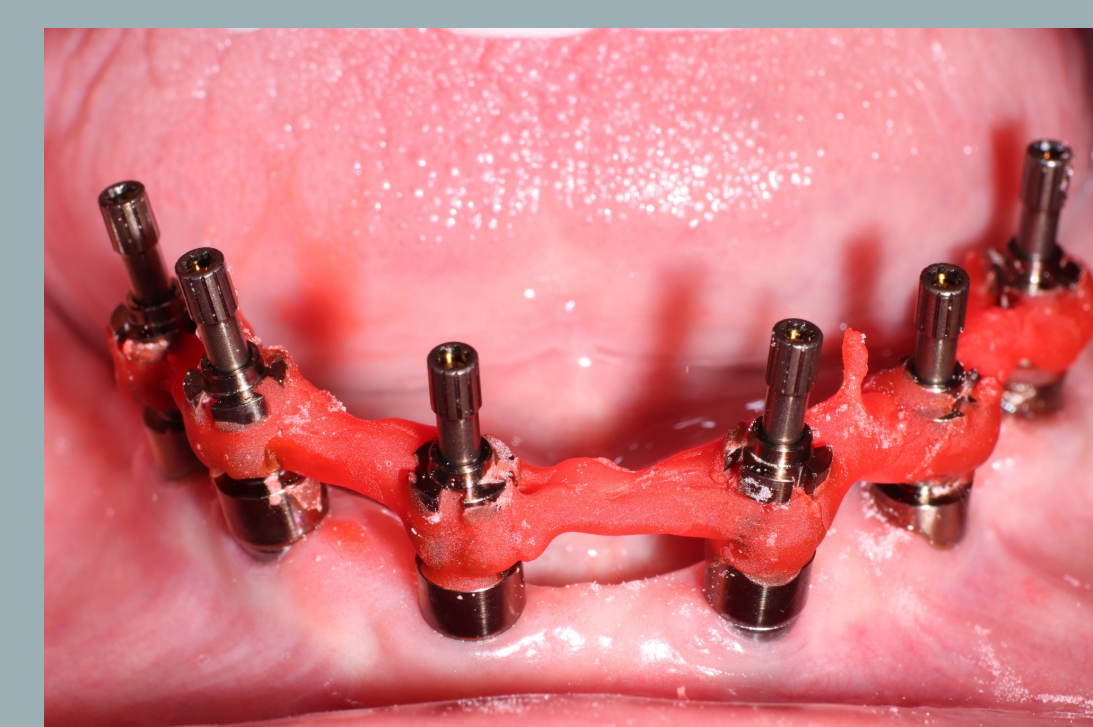


Figure 5



Figure 6



Figure 7

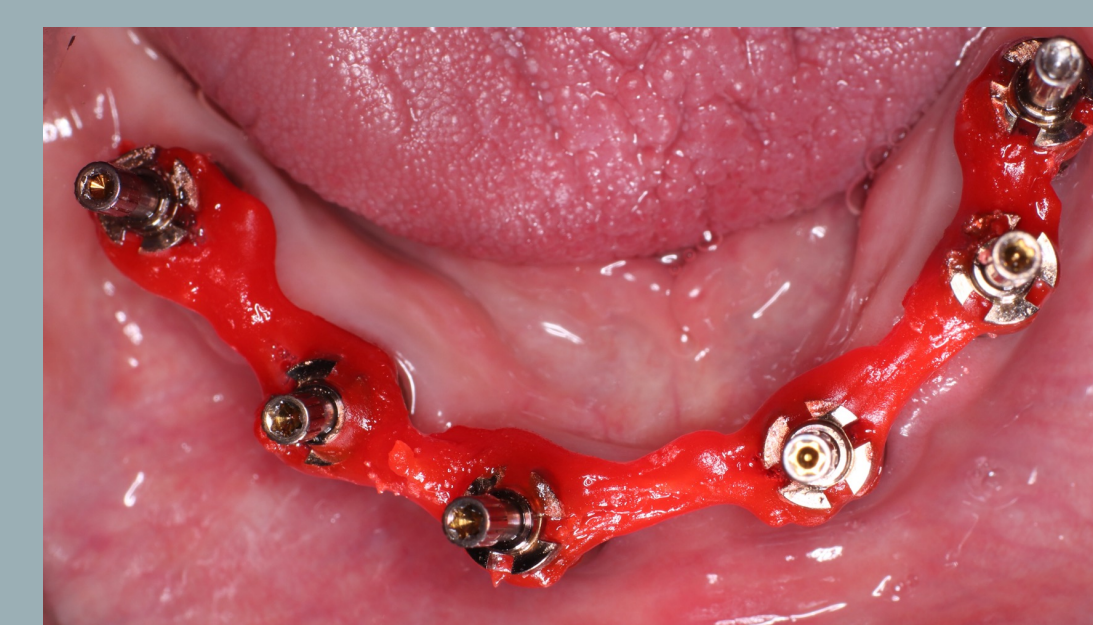
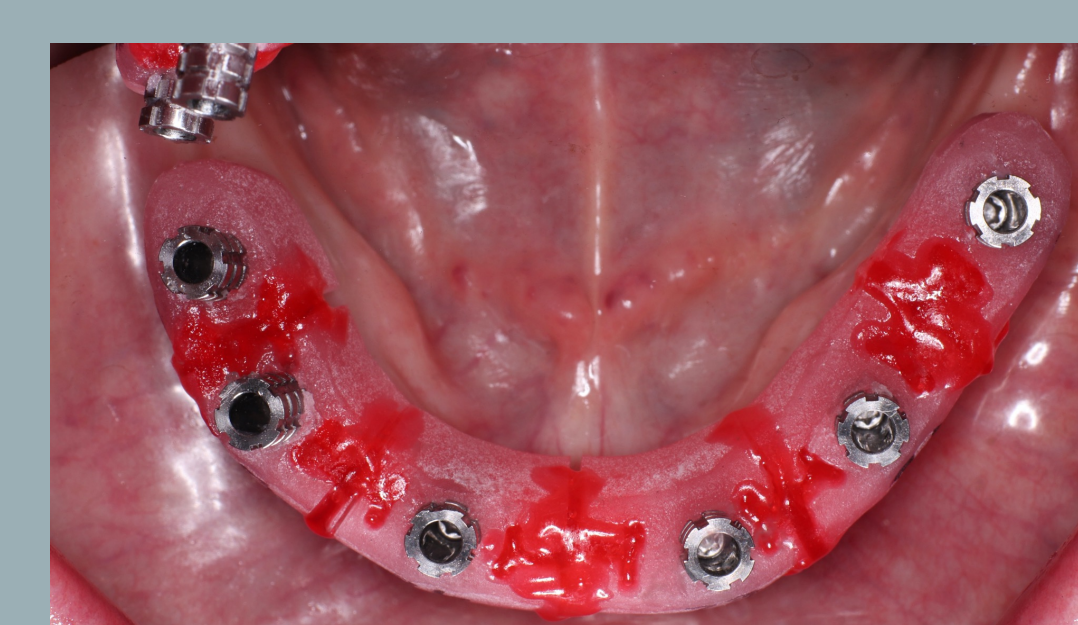
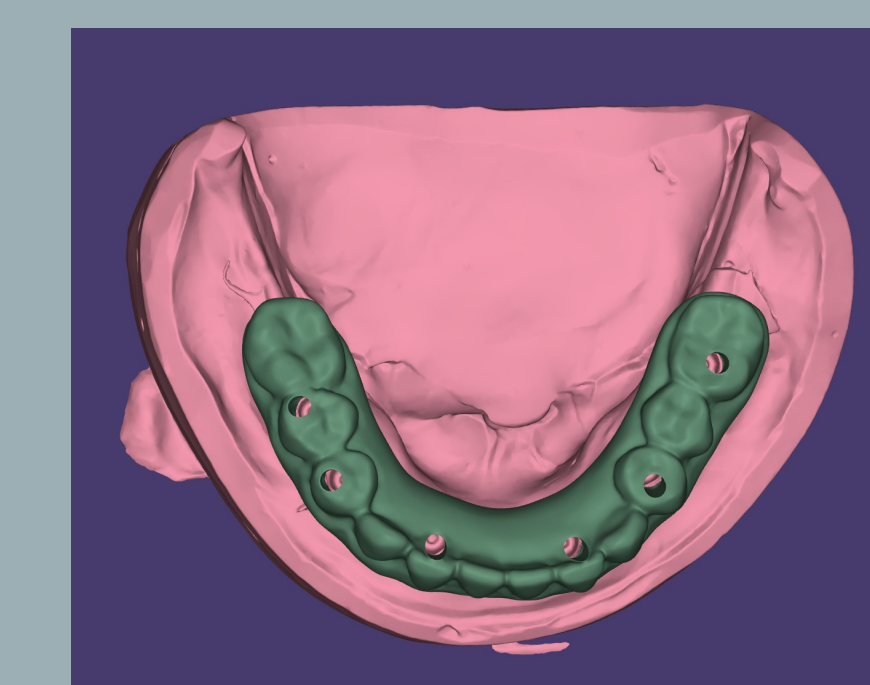


Figure 8



Figure 9



Conclusion

Monolithic zirconia may be an alternative material in managing the prosthetic complication to improve the longevity of hybrid restoration and regain its functionality, patient comfort and confidence.

References

1. Real-Osuna J, Almendros-Marqués N, Gay-Escoda C. Prevalence of complications after the oral rehabilitation with implant-supported hybrid prostheses. Med Oral Patol Oral Cir Bucal. 2012 Jan 1;17(1):e116-21. doi: 10.4317/medoral.17099. PMID: 21743427; PMCID: PMC3448187.
2. Gupta S, Gupta H, Tandan A. Technical complications of implant-causes and management: A comprehensive review. Natl J Maxillofac Surg. 2015 Jan-Jun;6(1):3-8. doi: 10.4103/0975-5950.168233. PMID: 26668445; PMCID: PMC4668729.
3. Caramez J, Tovar Suinaga L, Yu YC, Pérez A, Kang M. Clinical Advantages and Limitations of Monolithic Zirconia Restorations Full Arch Implant Supported Reconstruction: Case Series. Int J Dent. 2015;2015:392496. doi: 10.1155/2015/392496. Epub 2015 Jun 1. PMID: 26124835; PMCID: PMC4466384.
4. Diéguez-Pereira M, Chávarri-Prado D, Estrada-Martínez A, Pérez-Pevida E, Brizuela-Velasco A. Monolithic and Minimally Veneered Zirconia Complications as Implant-Supported Restorative Material: A Retrospective Clinical Study up to 5 Years. Biomed Res Int. 2020 Oct 15;2020:8821068. doi: 10.1155/2020/8821068. PMID: 33134389; PMCID: PMC7593719.



Figure 10(a)



Figure 10(b)



Figure 11



Figure 12 (a)



Figure 12 (b)

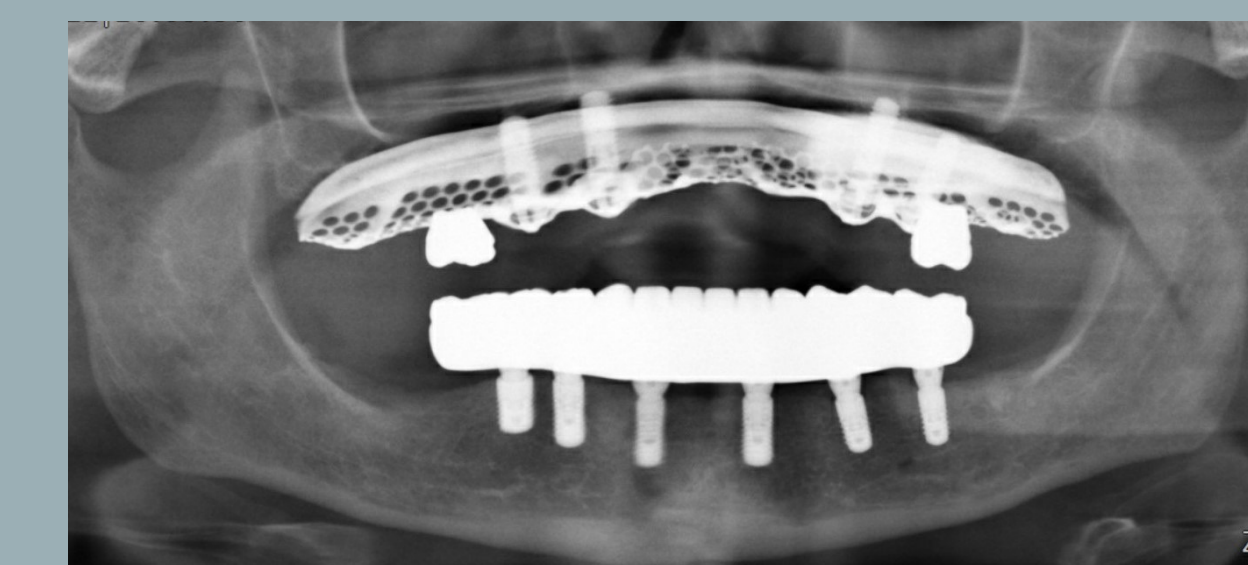


Figure 13