

GDIA USA SYMPOSIUM 2018

HARD AND SOFT TISSUE MANAGEMENT UTILIZING PARTIAL EXTRACTION THERAPY AND SUBEPITHELIAL CONNECTIVE TISSUE GRAFT

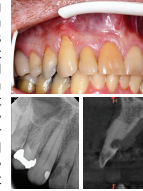


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BACKGROUND & PURPOSE

A 64 year old healthy male with no significant medical history presented for a routine cleaning and periodic examination with X-rays. Upon evaluation of X-ray there was a radiolucency on the distal side of #7. Initially it was diagnosed with a large distal decay and the root canal was not clearly visible on the X-ray possibly due to calcification. The patient was then referred out to an endodontist for further evaluation and possible treatment. The endodontist determined that #7 had external resorption with poor prognosis and recommended an extraction. When the patient returned to the clinic different treatment options were discussed including implant therapy and 3 unit fixed partial prosthesis after extraction. The patient chose to go with the implant option. After a careful examination of CBCT it was noted that there was a very thin or no buccal plate on #7. It was concluded that the Partial Extraction Therapy would be a good option to preserve the buccal volume or to minimize the buccal resorption. At the same time the patient wanted to address the gingival recessions on #5 and #6. Since there was at least a minimum of 2 mm of attached keratinized tissue around #5 and #6 and to further minimize the buccal bone loss on #7 it was determined VISTA approach with subepithelial connective tissue graft that does not require a large flap would be more appropriate.



MATERIALS & METHODS

To facilitate a more accurate and anatomically correct placement of implant a surgical stent was fabricated. A DICOM file of the patient was generated using Carestream CBCT and digital images of upper and lower dental arches were scanned with Trios intra-oral scanner (3Shape). Blue Sky Bio Plan was used to design the surgical stent. The surgical stent was 3D printed with Dentis Surgical Guide Resin (Anycubic Photon DLP 3D Printer). A metal sleeve for Dentis Simple Guide Plus was placed in the surgical guide. The patient was anesthetized with Articaine 4% with Epinephrine 1:200k with topical gel via infiltration. For Partial Extraction Therapy the Root Membrane Kit from Megagen was used. The crown portion of #7 was sectioned bucco-lingually with a high-speed handpiece and #557 surgical length bur and the lingual portion of the root was removed. The coronal portion of the remaining root was trimmed down to the buccal bone level for adequate tissue growth. Eight vials of venous blood were collected via right antecubital for sticky bone and CGF membranes. The fit of surgical was checked and 2.0 initial drill was used to make an initial osteotomy. A direction indicator was placed to visually check the angle and bucco-lingual/mesio-distal direction of the initial osteotomy. Since a DIO 3.3mm implant was planned for this case the drilling sequence stopped here. A planned implant was placed with more than 35Ncm torque sub-gingivally and the implant was not in contact with the remaining root and there was about 2mm gap between the root and the implant. A Zirconia abutment was trimmed and polished for temporization but because the material was so thin to begin with Zirconia portion on the abutment was fractured during polishing. No extra temporary or stock abutment was available at the time of the surgery. Only a pick-up impression coping was found and it was trimmed and polished to be used as a temporary abutment for a Non-Functional Implant Crown (NFIC). A flowable composite was used for NFIC and interproximal contacts were absent with no occlusal contacts or interferences. 0.5cc of Cortico-Cancellous mineralized bone was mixed with Autologous Fibrin Glue (AFG) to make Sticky bone and placed in the socket. A vertical incision was made with a 12C blade starting at the mucogingival junction between #6 and #7 and extended apically. A full-thickness flap was elevated distally to mesial of #3 including papillate without any perforation utilizing VISTA instruments. Passivity of the flap was confirmed. To harvest connective tissue a single horizontal incision was made between distal of #3 and #5 on the palate and a strip of connective tissue was harvested. On a sterilized tongue blade adipose tissues were removed and the harvested connective tissue was trimmed. Positioning sutures with Chromic Gut were used to orient and stabilize the harvested connective tissue in the full-thickness flap. Flowable composites were placed and light-cured with bonding agents between teeth for coronally advanced flap with PTFE sutures. Six pressed CGFs were placed apical to the connective tissue and secured with sling sutures around #4, 5, 6 and 7 with Chromic Gut. The palatal incision was closed with Chromic Gut suture. The patient was given Stellalife gel to promote faster healing and for pain management.



RESULTS & CONCLUSION

Conclusion

The patient was monitored at 3 days, 1 week, 2 weeks, 1 month and 2 months. Uneventful healing with minor discomfort was noted. Thick biotype was noted around #5,6, and 7 area and the gingival recession was corrected. Initially the recession was over-corrected intentionally and after 2 months the free gingival margin migrated to about 1 mm coronal to CEJ. No inflammation or exudate around #7 implant was present. Also no mobility of #7 implant was noted. It is premature to conclude that this combination of concurrent soft and hard tissue management with Partial Extraction Therapy and VISTA with CGFs is successful but its prognosis is very good at 2 month post operative check appointment.



References

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