

WILLIAM B. BOHANNAN DDS, MD PROFESSIONAL CORPORATION

7.12.18

RE: Samuel Bower – Site #6

To whom it may concern:

Mr. Bower and his parents wish to seek additionally opinions for site #6. They are trying to decide if further surgery in this area is wise due to the decrease vascularity at site#6 and the compromised periodontal involved dentition that surrounds site #6 namely #5 which is worse than #7. The other alternative is prosthetics utilizing a bridge. However, if this treatment is elected, the current periodontal condition at site #5 and #7 must be considered when designing the number of abutments necessary to create a stable and long lasting prosthesis. It is my belief, that the periodontal condition of tooth #5 is to the point where it likely would not tolerate the additional stress a bridge would create and as such #4 likely would have to be added to the bridge. It is possible that a double abutment may be needed at site 7 and 8. It could be suggested that #5 be removed to avoid issues with a bridge in the future. Therefore, I've asked the Mr. Bower to consider seeking a periodontal evaluation of tooth #5 and #7 prior to entertaining a consultation with a prosthodontist for a bridge. The prosthodontist would certainly desire to understand the periodontal condition of both those teeth prior to commencing with treatment. The periodontist I recommended was Dr. Kevin Consani. I've also provided a list of prosthodontists to the Bower family.

Mr. Bower has undergone many procedures to attempt to transport an impacted #6. None of the surgeries were successful. Clinically he has recession at the distofacial of tooth #7 and the mesiofacial and facial of tooth #5. He does appear to have mobility at tooth #5 that is greater than physiologic mobility. Due to the number of procedures in that area the blood supply, due to cicatricial changes in his anatomy from multiple procedures, is moderately to severely compromised (see clinical photos-figures 3 and 4 and the unhealthy periosteum in figure 5). This was evidenced when tooth #6 was ultimately removed. The periosteum is not healthy, the surrounding tissues are heavily replaced with cicatrix, and clearly the bone at site #6 caudally was poorly perfused and unhealthy. Additionally, when the flap was raised, the facial and mesial bone at site #5 was grossly compromised with a near total facial dehiscence of bone to the apical ¼ of the root and the distal and distofacial surface of tooth #7. Moreover, there was a continuity defect present in the coronal portion of the knife-edge bone at #6 (see figures 1 and 2).

Once tooth #6 was removed, the fenestration was occluded with autogenous bone and an onlay graft was placed at the site and secured with two bone screws. A membrane was placed buccally and palatally between the flaps and the bone. PRP was used to create an additional biologic membrane. The Bowers were informed of my intraoperative findings and they were informed I was not optimistic about this



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procedure success due to the compromised blood supply and the condition of the adjacent bone at sites 5 and 7.

After a consolidation period, the graft partially failed. The graft healed quite well superiorly, but the inferior portion did not. The graft resorbed back to the bone level margins of the adjacent teeth. That is typical in grafting as bone grafts typically “take” to the level of the lowest attachment of the adjacent teeth.

The question is what to do next. Due to the number of surgeries at this site, there is absolutely no question that the blood supply is compromised. Unfortunately, in this area of the body, it is difficult to quantify the amount of blood supply to the area. Doppler studies, arteriograms, and similar tests that can be done in other parts of the body that can assess perfusion, are not really done in this area. As such, we have no idea if the blood supply is compromised to the extent that any further procedures could be slated for failure based on perfusion capacity. Additionally, with the degree of bone loss to the adjacent teeth, it will be difficult for a graft to be successful as well. Together, the periodontal conditions at 5 and 7 along with the poor blood supply, may never allow for a successful treatment at site 6. As such, further grafting was discussed, but the chances for failure were made quite clear. One option, although clinically challenging, is to attempt a graft purely through a tunneling technique where the cross perfusion from the palate is not compromised with a crestal incision. One other option to attempt to increase his natural perfusion in the area, is have Sam undergo hyperbaric oxygen treatment (HBO) pre-operatively and post-operatively to attempt to stimulate new vasculature to the region. I do this commonly with patients post-radiation and I have done this twice before with success in patient with similar compromised blood supply issues due to multiple surgeries secondary to recurrence of benign neoplasms.

#5's current long term prognosis is quite poor due to the degree of bone loss present. This is another reason I would like Mr. Bower to seek a periodontal evaluation. If an implant solution is still desired, it may be wise to consider the extraction of #5 and or #7 and then a graft placed. It has more of a chance of success as now the lowest levels of attachments are restored as the distal #5 and the mesial of #7 would be normal. Then either individual implants can be placed or a bridge from site 5-7 can be placed if desired or if the graft at site 6 is still inadequate. This would satisfy the Bower's concerns about crowning several teeth. This still doesn't address the vascularity issue, but the tissue bed at 5 and 7 should be better than at site 6 itself and perhaps with HBO, this option has a better chance of success.

One other food for thought is that even if a graft is successful at site 6 and an implant is placed, we know that implants placed in areas with adjacent disease, have a much higher degree of complications and failure. All of these issues must be taken into consideration when planning restorative and surgical for Mr. Bower going forward.



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Please call us if you have any questions regarding this case.

Sincerely,



William B. Bohannan DDS, MD

Diplomate of the American Board of Oral and Maxillofacial Surgery

Additional notes from Sam's post-operative visit from 6.19.18

6.19.18

Follow-up visit for Sam Bower.

Review of CT findings-Post-Graft.

The CT showed good fill of the impacted tooth extraction site and apical portion of the missing tooth site #6. However, the coronal and mid-root portion is disappointing. The fill is inadequate for implant placement. Currently an implant is possible, but it would create a large lever and likely a very un-esthetic long tooth. Moreover, the bone loss facially and proximally at site 5 and to a much smaller degree #7 has progressed. Thus placing an implant where adjacent teeth are periodontally compromised may not be the most prudent of choices.

It was explained to Mr. Bower and his mother; it is difficult to "grow" bone (graft) more coronal to the most apical position of the adjacent bone level. Upon examining the CT, indeed the bone graft success ended at or slightly coronal to the apical position of bone at #5. This was my fear that I clearly indicated after surgery when the site was entered and the gross periodontal loss was evident on 5 greater than 7. The intraoperative pictures were reviewed with Sam and his mother after the graft procedure and today to refresh their memories. Additionally what also compromised this case is the number of times this site has been entered and the amount of scar tissue present. As such, the vascular supply of the area is without a doubt compromised. Meaning if further grafting/surgery is ultimately elected, there will always be a higher risk of failure due to the compromised blood supply.

Now the question is what happens next. Several options were discussed. The first is an attempt to re-graft site #6. The chances of success are likely low due to the blood supply and the existing bone level of 5 and to a lesser extent 7. The removal of 5 and possibly 7 was discussed and crib grafting the site to prepare the site for future implants. This would address the issue of placing grafts and/or implants with compromised teeth (periodontally) next to the site(s). However, if it fails, which is possible due to the blood supply, there is a larger problem then to remedy.



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Traditional crown and bridge and removable device(s) were also reviewed. However, two things must be done prior to getting an opinion from a prosthodontist. First would be to remove the hardware then establish a periodontal opinion of teeth 5 and 7. Once that is done, the patient may seek a prosthodontic opinion for the site 6. It is likely a posterior double abutment will be needed due to the condition at #5 and possible a double abutment at 7. Once that is obtained, then the patient can decide which path he chooses. More grafting/extraction(s) and implant(s) versus traditional bridge work or the election of a removable partial denture.

Next visit here is for hardware removal with local anesthesia.



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Figure 1. – Impacted tooth #6 with clear and significant bone loss at #5 and #7. Mature granulation tissue present caudal to the incisal edge of tooth #6. Note knife edge bone present inferior to the impacted canine at the same level as the receded bone margins of teeth #5 and #7.



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Figure 2. After the tooth was removed and the granulation tissue removed, there is a clear fenestration of the bone towards the inferior margin. Of note, the degree of bone loss on teeth #5 and #7.



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Figure 3. Note that gingiva and mucosa at site 6 and the at #5 and to a lesser extent at #7 is mostly scar tissue. Note scar bands superiorly.



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Figure 4. Scarring



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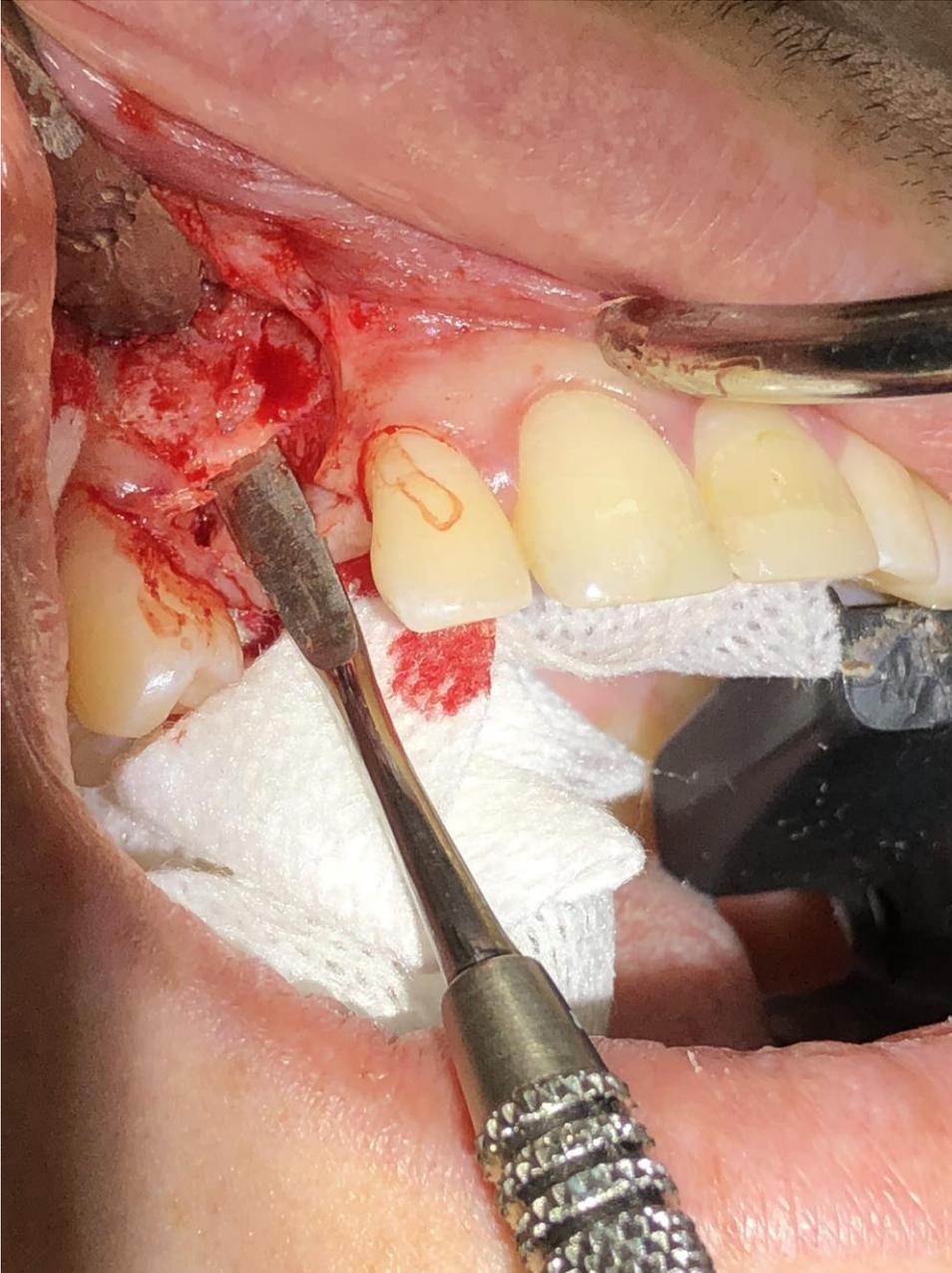


Figure 5. Note unhealthy bone. Horizontally compromised inferiorly. Fenestration repaired. Note periosteal thickening.



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