Clinical Realities

OCTOBER 2003

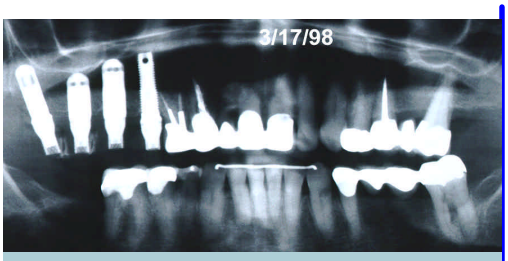
IMPLANT NEWSLETTER FOR CLINICIANS

From the treatment records of Paul P. Binon DDS, MSD

CASE OF THE MONTH

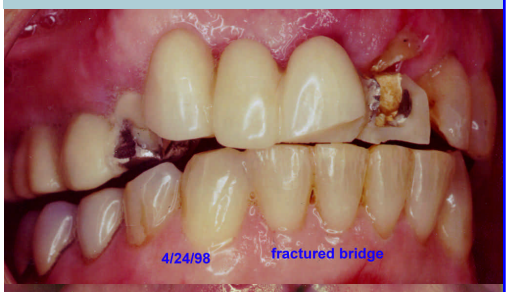
Implant treatment for this patient had started in 1997 with the extraction of periodontaly hopeless teeth in the right upper quadrant. Following grafting, four hex top implants were placed. After second stage surgery, restorative efforts were initiated and after several failed efforts to obtain a passive fitting framework, the patient was referred to me. During my exam it was noted that the maxillary anterior 5 unit bridge was failing as was the left mandibular posterior bridge. The arrows in the pretreatment radiographs indicate: caries on 5, inadequate endo fill, and possible internal resorption on 6, short conical root on 9 and caries on the posterior bridge abutment (18). Upper arch was addressed first. A provisional bridge (with a cast framework) was placed, using all implants and extending to 9. This would permit critical assessment of each abutment and retreatment of the endo on 6 if the endodontist indicated the prognosis was favorable. Following placement of the provisional bridge, the patient left for an extended holiday in Hawaii. A short time later, I received a call from Hawaii that our patient had sustained a rather severe trauma to the anterior face. The gist of it was that as a result of a fall, she had suffered a concussion, multiple abrasions and contusions and had fractured several teeth and displaced the anterior provisional bridge. The day after she returned I saw her in the office and noted four fractured teeth that were beyond restoration (5, 6, 8 and 9), the provisional bridge displaced superiorly and the metal framework partially fractured between 4 and 5. The labial bone plate was also fractured.

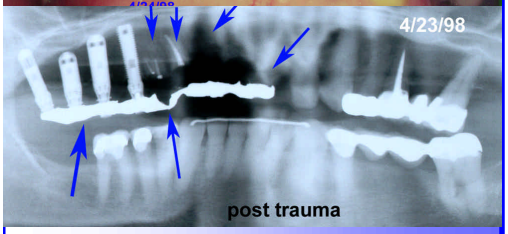
What was truly remarkable was that the 4 implants placed in 1997 were still fully integrated, showed no mobility and in subsequent follow up appointments have shown no bone loss or other complication. A revised treatment plan was determined and the damaged provisional bridge was removed, 10 and 11 were prepaired as bridge abutments, the fractured roots were cut down below tissue level and an impression for a new provisional was made. An interim temporary was inserted while the new provisional was made. At the next appointment, the roots were removed, 4 additional implants were placed and the osseous defects were grafted. The new provisional that extended from 1 to 11 was also inserted. This provisional bridge was designed with a cast metal framework that had hollow cores in the central portion of each pontic. This allowed conversion of this bridge into an implant supported unit at second stage surgery. Nine months later definitive treatment commenced following exposure of the anterior implants. The maxillary posterior segment, consisting of the 4 initially placed implants was restored with a custom cast substructure and a cemented PFM superstructure. The anterior segment was exposed and all implants had integrated and the graft was well condensed. However, I did not like the proximity of the 8 an 9 implants and was concerned about loosing interproximal tissue. To avoid unnecessary complications, the 8 implant was left buried. It will serve to preserve the alveolar ridge in the years to come. The segment was restored with individual custom abutments on 5, 6 and 9 and a PFM bridge.



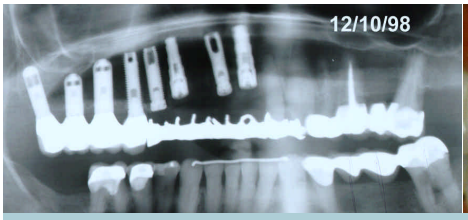
PRETREATMENT RADIOGRAPH 3/17/98

PROVISIONAL PLACED PRIOR TO TRAUMA



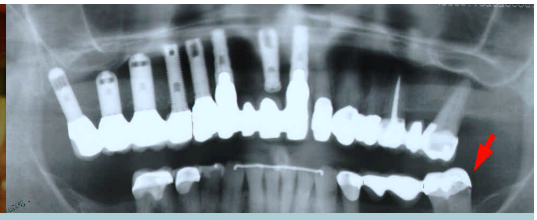


TRAUMA RESULTED IN FRACTURE OF 4 TEETH, THE LABIAL PLATE BETWEEN 6 AND 8 AND DEFORMATION OF THE CAST PROVISIONAL BRIDGE FRAMEWORK. QUITE REMARABLE WAS THAT THE POSTERIOR IMPLANTS SURVIVED WITHOUR ANY DISTRESS AND RETAINED THE BRIDGE UNTIL THE PATIENT RETURNED FROM HAWAII



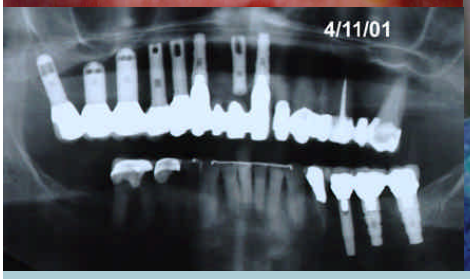
FOUR ADDITIONAL IMPLANTS PLACED AND BONE DEFECTSGRAFTED

NEW PROVISION USING NATURAL AND IMPLANT SUPPORT IN PLACE 6 MONTHS



FAILING MOLAR, SEGMENT REPLACED WITH THREE IMPLANTS

As soon as the maxillary treatment was near completion, three additional implants were placed in the lower left quadrant. The upper arch was restored with two independent implant segments and PFMs on 10 and 11. After three and a half months, custom abutments and PFM crowns were made and inserted on the lower implants. Maxillary and mandibular treatment was completed in 1999. Patient is highly motivated and her home care is excellent. The soft tissues have regenerated very well in the proximal areas of 8, 9, and 10. In general, bone type was Type II or III. All implants were greater than 10 mm in length (most were 15 mm) and ranged in diameter from 3.75 mm to 5.5 mm. Post operative healing was uneventful during all procedures. Sequential post op photos illustrate excellent esthetic and functional result.



POST OP VIEWS - MOST RECENT TO THE RIGHT IS 2003

PATIENT SELF-REPORTED SATISFACTION WITH MAXILLARY ANTERIOR DENTAL IMPLANT TREATMENT

LEVI A, PSOTER WJ, AGAR JR, REISINE ST, TAYLOR TD

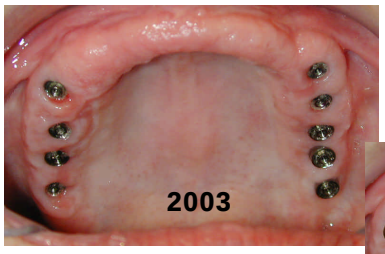
Int J Oral Maxillofac Implants 2003; 18(1): 113-119

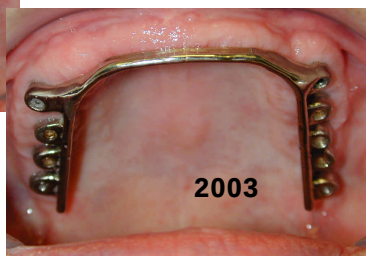
This study focused on implants from the patients' perspective. Data was collected from 123 patients following treatment with maxillary anterior implants. Overall satisfaction with treatment was recorded at **89%**. "The results of this study suggest that patient satisfaction with implant position, restoration shape, and overall appearance, as well as effect on speech and chewing capacity, is critical for patient overall acceptance of the treatment. Practitioners who provide implant restorations should be aware of the **MULTIDIMENSIONAL** aspects of patients' satisfaction ….giving particular attention to patients acceptance of dental implant ability to restore esthetics (position, shape, overall appearance) and function (effect on speech and chewing capacity). **Two way patient—doctor communication prior to and throughout treatment affects patients perception of implant outcome."**

HISTORICAL REVIEW,

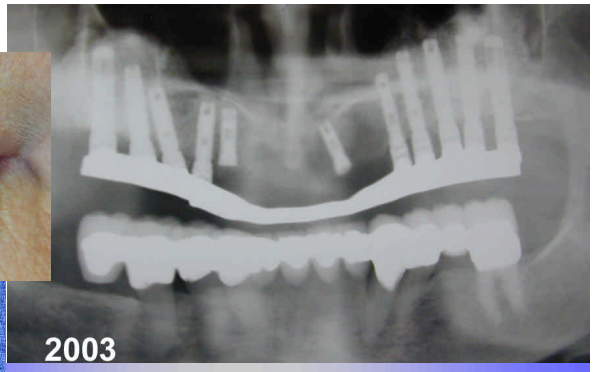
TEN YEARS OF SATISFACTION, FUNCTION AND ESTHETICS

Patient of record for 26 years. Virginia was originally restored in 1977 with an overdenture supported by thimble crowns and a tissue bar between 6 and 11. The lower arch had six remaining teeth that were restored with crown and bridge. After 14 years of function, the two upper teeth were failing rapidly. A treatment plan was developed to avoid a conventional upper denture and to retain the two failing natural teeth for retention until dental implant treatment was completed. Bilateral sinus grafts (autogenous and allograft) were completed and allowed to mature for six months. Then, 9 implants were placed, distal to the cuspid sites. At second stage surgery, all implants were exposed, 6 and 11 were extracted, the sites were grafted and 2 additional implants were placed. A tissue bar was constructed with Hader clip retention. A metal superstructure was made to retain the clips and reinforce the overdenture. The lower arch was retreated with two fixed posterior splinted segments, interconnected to the anterior segment with tube lock attachments. The treatment has functioned for 10 years. Bone levels on the lower natural teeth and the upper implants has not changed during that time. The cuspid site implants are sleeper that support the corners of the dental arch and have not and will not be loaded. Patient is seen once a year in my office and at 6 months intervals by a periodontist in Las Vegas, Nevada.





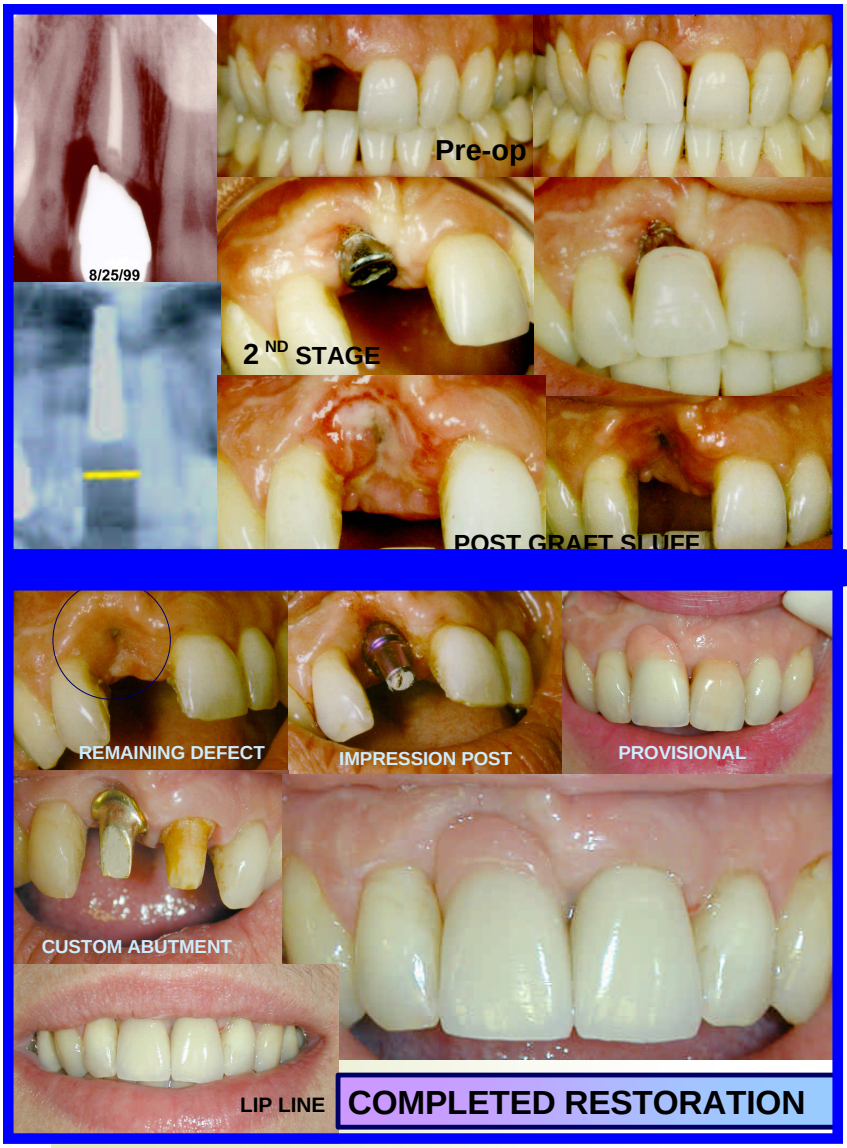
RECALL VIEWS 2003



SIGNIFICANT WEAR OF DENTURE TEETH AND SLIGHT LOSS OF VD OVER 10 YEAR PERIODWILL NECESSITATE REPROCESS OF DENTURE

CLINICAL COMPLICATIONS

In April of 2000 a patient relocating from the Bay Area was referred to complete her implant treatment. Number 8 had a horizontal fracture with advanced labial bone loss and had been extracted the previous month. The Bay area surgeon had removed the root and completed a socket and labial surface graft. Care was transferred to a local surgeon who placed a veneer graft in September. Approximately four months later, a 2 mm area of the veneer cortex was exposed and debrided. The implant was inserted approximately 3 months later. At the time of implant placement, the graft had matured quite well however, there was still a slight vertical height and labial width insufficiency. The implant was inserted to the level of the labial bone crest. At second stage, some problems became apparent: insufficient bone labially to support soft tissue (indented area); implant exit trajectory; and a significant frenum pull. The second stage photos indicate that with diligence, the problems were still manageable.



In an effort to correct the soft tissue disharmony a gingivectomy and gingiplasty was performed at the end of May. The tissues were still not esthetically acceptable due to dehiscence and at the end ofJuly a soft tissue graft (Alloderm) and Bio-Oss graft was attempted. Unfortunately the graft sluffed and the resulting defect was even larger than the original. Additional interproximal papillae was lost on both sides. The remaining defect was left to completely heal and mature for approximately six months. An impression was made and a provisional restoration was also placed during this time. A prefabricated titanium abutment was used to support the provisional crown. During the maturation period, #9 became symptomatic and was diagnosed with irreversible pulpitis. This was coincidental and unrelated to implant treatment.

Once the tissues had stabilized, a custom cast abutment was made for # 8 and # 9 was prepaired for a PFM crown. The porcelain fused to metal restorations were inserted and esthetics was restored. The result was pleasing to the patient, the surgeon and myself.

Needless to say, all concerned had some difficult times during this course of treatment. In retrospect, alteration of the treatment plan could have changed the outcome. I believe that if a larger onlay graft had been used initially, the defect may have been avoided. Subsequent surgeries would then have also been avoided. A critical factor in the surgical outcome was that the patient was a very smoker. That contributed to the **microvascular compromise** and the healing difficulties. It is clear that the bone bed in the anterior area has to be sufficient, to support the implant before it is placed and that any habits that compromise healing be stopped several months before any surgical intervention. Studies indicate that implant integration is not significantly compromised due to smoking. The same is **NOT TRUE** for soft tissue surgery and grafting. Prior to restoring, I consulted with several respected surgeon friends to determine if additional surgery could correct the problem. Universally they said: the blood supply has been compromised and the patient smokes - any additional surgery is highly problematic. So there was no recourse other than restorative. This is a very atypical result for anterior implant surgery. It does illustrate: **BE VERY CAUTIOUS WHEN CONSIDERING SOFT TISSUE SURGERY ON SMOKERS.**

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United we stand