


Patient #4



ABDSM Submission 2008



Patient # 4 Synopsis

Patient #4: 52 year old married caucasian male living in Hales Corners, Wisconsin. My initial encounter with the patient was an evaluation on September 6th, 2007. The patient was referred by his current general dentist when the patient asked about a splint for sleep apnea.

Chief Complaint: "I don't like my CPAP". He has a CPAP that he still uses a few times a week, but the mask and hose pulls and leaks and then he will take it off "after a few hours". He has had various mask designs over the years without anyone of them being more acceptable than the previous. A dentist made him a "splint" 2-3 years ago that he wore for about one year and then it broke. He would like to have another sleep splint made.

History of Present Illness: The patient indicates no current medical conditions or treatment. He has morning headaches 2 times a month and takes Ibuprofen as needed to rid the headaches. He uses 81mg aspirin once daily for heart health and takes a daily multivitamin. He has uncontrolled obstructive sleep apnea, that is moderate to severe according to the sleep physician's report and PSG findings. He indicates heavy snoring, and some snoring even with the CPAP in place. His wife sleeps in a separate room. He does not experience EDS noted by his ESS of 4. He is under a periodontal maintenance program with his general dentist.

Past Medical History: The patient has had treatment for and monitored for periodontal disease for years. Periodontal surgery was performed many years ago and per his description it was likely flap surgery, osseous contouring, root planing and pocket reduction and it took two surgeries to complete according to the patient.

Clinical & Radiographic Examination: The patient's blood pressure initially was 119/71, pulse 74 and respirations 16 and BMI of 27. The patient has no pain to palpation of the masticatory, cervical or TMJ regions and there are no TMJ noises or dysfunction. There is a normal range of motion at 55mm and 14mm lateral excursions bilaterally. The protrusion was at 12mm. I started at 1mm protrusion to check the tolerance of the teeth in the appliance due to the periodontal condition and teeth mobility. He is a dental class I with deep vertical bite and bilateral molar open bite. There is 5mm of vertical overbite at the central incisors and 3mm horizontal overjet. The 2nd bicuspid and 1st molars are open without contact, though shimstock drags lightly through the 2nd molar region. He can laterally shift/slide his jaw very slightly to make contact on the 2nd molars. The patient has an extra-large tongue, Sampsoon-Young pharyngeal grade III and Mallampati II soft palate. His PSR (Periodontal Screening Recording) indicates no bleeding on probing, but calculus is present in the mandibular anterior. He had food debris interproximally, and stated that he had just eaten and "food sticks" between his teeth since they cut his "gums open" years ago. There is Miller class II mobility of teeth #7, 10, 20, 21, 23, 24, 25, 26 and class I furca on teeth #3, 18, 19, and 30. The patient has generalized abrasion/abfraction lesions across the anterior and bicuspid teeth. Most of it is likely abfraction due to the clinical crown length of the teeth secondary to attachment loss creating more potential for cervical flexing stress and loss of cervical tooth structure. Many of the teeth have been repaired and the shape of the lesions can't be fully evaluated on all teeth. His TMJ CT tomographs have no positive findings. The pano shows advanced generalized periodontal attachment loss (osseous and gingival loss). Also a small, 10 X 10mm, right maxillary sinus medial wall mucous retention cyst is present. This is also evident on the lateral cephalometric view. There is no pain, pressure, fever, no blockage of the osteomeatal complex or sinus drainage present and no treatment or referral is indicated. The nares are patent. No other pathoses identified clinically or radiographically.

Diagnoses: Per overnight polysomnography January 22nd, 2001:

1. Snoring, lateral and supine
2. Moderately severe Obstructive Apnea Syndrome
 - Apnea index - 18
 - REM RDI- 56.1
 - Lowest Desat - 86%
 - RDI- 93
 - NREM RDI- 28.1
 - Below 90% - 0.9% of test (4.1 min)



Treatment and Results: He has dental prophylaxis every 3 months and periodontal scaling at those appointments when indicated and also clinical examination by his general dentist every 6 months and BWXR every 6 months to 1 year.

Initial therapy was with CPAP. Initially he did not tolerate the nasal mask, though he did well with the full face mask. He has used CPAP on and off for years, but will take the mask off during the night because of air leakage and tugging of the hose annoying him. About 2 – 3 years ago he had an oral device for sleep apnea made by a local dentist (can't remember his name) and used this for approximately one year and found this more comfortable than the CPAP. The appliance broke after the 1st year and he went back to using the CPAP occasionally.

Per the patient's description the appliance was likely a monobloc style. He never went back to the dentist for any checkups for the appliance and he was not given any bite exercises for the morning. Also his sleep physician did not know that he had used an oral appliance.

He thinks that his bite may have changed while using the appliance. His current general dentist has no models or radiographs prior to the appliance. We requested that the patient sign a release to obtain copies of his radiographs from his periodontist of years ago to assess his previous occlusion and treatment, but said he would just try to get them. He also has adamantly indicated that he is not concerned about his bite as "it's just fine".

The patient and I have discussed his poor periodontal health and the possible detriment of the oral appliance against the compromised teeth. Also we discussed in depth the changes that have occurred to his bite and that it is likely that this will worsen with restarting appliance therapy. As above, he states this is not a concern to him as he is eating well and has no pain. Though these statements are in the standard consent form, I added them even more specifically by hand and had the patient sign that he understands and accepts the risk and potential negative outcomes with his oral health. He was not interested in exploring his surgical options with ENT.

Oral appliance therapy was initiated on October 4th, 2007. I had also constructed an anterior deprogrammer stent for the morning and before bedtime in an attempt to improve, or at least reduce the chances of, bite changes. He refused to wear the device, but stated he would use the plastic bite tabs in the morning. The device was subjectively titrated over the next few months at which time he indicated better rest, comfort to the appliance and no snoring was noted by his wife unless he falls asleep in the den chair and then he snores very loudly. Also, there was no noted increase in mobility or other negative periodontal effects noted. There was a slight change in the occlusion with the second premolar distal contact opening to not hold shimstock at that point. The bite tabs' use was re-emphasized.

In January, 2008, oral device overnight titration was recommended and was performed on April 22nd, 2008. At the appliance adjustment level at the start of the study the patient had an AHI of 1.4 and oxygen titration mean of 94% and lowest at 90%. He was having arousals during the night (index 28.8 at this level), though they were not movement or respiratory. Advancements of the appliance were made 3 times. At the final adjustment the AHI was 8.6 and the lowest saturation was 92%, but an increase in the arousal index was seen at 40.3 Initial sleep efficiency was 77% and following the 3rd adjustment it was 66.4%.

In discussion with the sleep physician we agreed that there was a high probability that the patient was having some difficulty staying asleep with the splint. The patient felt it was the sleep lab. The treatment plan agreed upon by me, the sleep physician and the patient is to continue appliance therapy at the final level of adjustment, monitor for changes and problems and after 1 year re-evaluate and we will most likely perform another appliance overnight study.

Disposition: As noted above, we will monitor every 3-6 months for 1 year and then consider repeating the appliance polysomnogram. He continues to follow-up with his sleep physician for the OSA. Future considerations will be for compliance, the dentition and occlusion, changes in the level of OSA, need for further titration of the device, patient comfort and periodontal condition monitoring. I will stay in touch with his sleep physician in assessing the need for further overnight effectiveness evaluations as OSA tends to increase with age.

Reason for PM Positioner: There were various designs that were acceptable to treat this patient's OSA. Due to the severe periodontal condition and mobility of the teeth the patient and I chose a thermo-elastic appliance that, when softened, could be inserted with more ease and also likely to be more comfortable to the patient. I selected the PM Positioner for this reason. Also the PM Positioner has the primary vector of force at the posterior region bilaterally with less anterior pressure than anteriorly adjusted appliances (i.e., TAP designs), which may be kinder to the periodontally less stable anterior teeth. It is FDA approved and significant research supports its effectiveness.