

Case Study: Combination Therapy TMD/OSA

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Patient D.F.:

D.F. is a 52-year-old female from Lancaster, OH. She is 5'5", weighs 145 pounds, and has a body mass index (BMI) of 24.1. She presented on July 29, 2008 and was referred by her general dentist for unresolved head pain, which was unresponsive to a centric relations splint.

Chief Complaint:

The patient's chief complaint was frequent jaw pain on the right side, which radiates to all areas of the head and face, including the eye, ear, and temporal regions occasionally. D.F. also complained of throat soreness, and neck and back stiffness on occasion.

History of Present Illness:

D.F. presented on July 29, 2008 for right-sided jaw pain, limited mouth opening and pain secondary to chewing. She states that the symptoms began on May 15, 2008.

Head, Neck, and Facial Pain Questionnaire revealed the following: All symptoms for D.F. were associated with the right side of the head and neck. The patient stated that jaw pain was the most important and most frequent symptom, followed by limited mouth opening and then pain when chewing. All symptoms reached an intensity of five to eight out of 10. Jaw pain occurred during opening, while chewing, and at rest. The patient stated that there is clicking and popping on the right side, and that she had a history of clenching and grinding. Other symptomatic areas included frontal, parietal, and temporal regions. She also complained of back and neck pain, and ear and eye related symptoms. The patient had a history of chronic sinusitis. She stated that she snores occasionally and has had morning headaches different from her head and neck pain.



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Past Medical History:

The patient has a history of fibromyalgia, mitral valve prolapse, asthma, sinus problems, seasonal allergies, pain in joints, and bruising. The patient experiences shortness of breath during physical activity. D.F. is not a tobacco user and reports limited use of alcoholic beverages. She is also undergoing psychiatric treatment for depression and anxiety. She maintains regular appointments with her primary care physician, dentist, and chiropractor.

D.F. is on the following medications:

- Mobic 7.5mg po daily
- Prozac 20mg po bid
- Wellbutrin XL 300mg po daily
- Xanax 0.25mg po tid
- Ambien 10mg qhs
- Claritin 10mg po daily
- Mucinex 600mg po daily
- Allergy injections 0.65ml weekly
- Magnesium 400mg po daily
- Multivitamin po daily
- Vitamin C 500-1000mg po daily
- Metamusil daily

Clinical Examination:

A complete head and neck examination was performed. Cephalometric and Panoramic radiographs were taken and consulted. Significant findings of the examination include a limited mouth opening of 25mm and limited lateral movement of 6mm on both the right and left. The patient has tooth mobility of one to two on lower anterior teeth, along with wear facets, worn dentition, and other signs of bruxism. Joint popping occurred in the right temporomandibular joint (TMJ). The soft palate for this patient is a level 3. Following a temporomandibular dysfunction (TMD) examination protocol, symptoms were duplicated to resemble joint disease.

Diagnosis:

Based on the questionnaire, history of illness, and head and neck examination, the diagnosis was anterior displaced disc in the right TMJ. Sleep-related breathing disorders (SBD) in connection with the TMD were suspected and were treated as detailed in the treatment section of this study.

Treatment and Results:

Initial treatment for the displaced disc and TMD was performed using a specific protocol. A pivotal posterior appliance was delivered on July 30, 2009. This appliance fits comfortably over the 2nd premolars and the 1st and 2nd molars. On the occlusal surface in the area of the 2nd molar, acrylic is added for a single point contact. The surface of this contact is very smooth in order to be therapeutic. D.F. was instructed to wear the appliance at all times unless eating or cleaning the pivotal appliance. For the next three months, the patient returned for office visits every two to four weeks to evaluate the appliance and the progress of the treatment. The expected result for an anterior displaced disc treated with pivotal appliance over a two to four month time period is improved symptoms because of healing and repositioning of the disc tissue. After the three months of follow up, this patient was still reporting headache, facial pain, and jaw pain. Compliance with the pivotal appliance was very good, but the pain and other symptoms were not improving.

Because of the recent literature supporting the connection between SBD and TMD, the patient was evaluated for sleep disorders. An Epworth

Sleepiness Scale revealed a score of 18, and a patient scoring above nine should see a sleep physician for further tests. This patient was referred to a sleep physician, and on October 17, 2008, the initial consultation was done. One week later, D.F. had a baseline polysomnogram (PSG) in a sleep center with the proper supervision. The M.D. evaluating the PSG stated that there was no evidence of SBD. Some of the results were AHI of 0.3, lowest SaO₂ of 93 percent, and limb movement index of 15.7. This doctor recommended a referral to a rheumatologist for the fibromyalgia, but the patient declined this referral.

Since my typical appliance for dealing with a displaced disc was not effective, it was decided to treat this patient with a mandibular advancement device (MAD). The appliance is identical to the appliance that I use for the treatment of SBD, but for this patient it was used to anteriorly reposition the mandible to allow healing of the TMJ. On December 30, 2008, the MAD was seated to an end over end position of the anterior teeth. Instructions were given to advance the mandible in very small increments and only if tolerated without symptoms. Bite tab instructions were given to minimize bite changes. Side effects associated with the appliance were communicated to the patient. A prescription for fluoride gel was given to use with the MAD to reduce the chance of tooth decay.

On January 21, 2009, D.F. returned for a follow-up appointment. She indicated that she was dreaming more, which might suggest better sleep patterns. However, the patient was still experiencing jaw pain and daytime sleepiness. The patient decided at this point to discontinue wearing the MAD due to pressure on her anterior teeth. D.F. wanted to return to wearing the pivotal appliance day and night. Even though

the patient preferred not to wear the MAD, adjustments were made in order to improve comfort of the appliance.

Soon after this appointment, the patient began to again wear the MAD at night, because she was not getting any resolution of symptoms with the pivotal appliance.

On February 18, 2009, D.F. returned for another office visit to check her appliance and re-evaluate her symptoms. At this appointed there were several changes. She indicated her jaw pain had discontinued, she felt less sleepy during the day, symptoms in the temporal region were gone, ear symptoms were gone, and there were no headaches. Her primary care physician also discontinued the Wellbutrin XL and Mobic. The patient no longer took Ambien, and her dose of Prozac has been decreased to 10mg. During another appointment on March 30, 2009 the patient showed continued improvement. D.F. was only wearing the MAD at night with no pivotal appliance therapy. There was still no pain or symptoms in the head, neck, or TMJ.

Disposition:

The patient will remain on a three to six month recall over the next year for continued follow-up of the TMD and maintenance of the MAD. She was instructed to report any significant changes in her symptoms, as well as problems with the appliance or teeth.

What appeared to be traditional TMD may possibly have an airway component. Resolution of the TMD occurred concomitantly with other issues mentioned previously. It is expected that she will continue to have improvements with her TMJ and head pain. ”