

**The Complex Orofacial Pain Patient: A Case for Collaboration between the Orofacial Pain
Dentist and Clinical Health Psychologist**

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"We are all in the same boat, in a stormy sea, and we owe each other a terrible loyalty." G. K. Chesterton (1874-1936)

Aim

This chapter presents an example of an integrated biopsychosocial collaborative relationship between a dentist board certified in orofacial pain and a board certified clinical health psychologist with advanced training in clinical psychopharmacology. The orofacial pain dentist and clinical health psychologist collaborated in diagnosing and successfully treating a patient with complex chronic orofacial pain and excessive narcotic and benzodiazepine use. After reading this chapter the reader should have an appreciation of how utilizing an integrated collaborative biopsychosocial model results in a comprehensive treatment plan that guides a dynamic treatment process to optimize treatment outcome.

Introduction

Perhaps no area in health care has witnessed the application of the collaborative model more than pain medicine. It is here that the standard of practice is defined as psychologists and pain medicine physicians partnering in an equal relationship to diagnose and treat chronic pain from a multidisciplinary perspective. The contributions that psychologists bring to table are most noteworthy. It was psychologist Ronald Melzack along with the late Patrick Wall who proposed the Gate Control Theory of pain that revolutionized the field of pain (Melzack & Wall, 1965). Of particular importance, the Gate Control Theory proposed neurophysiological mechanisms through which psychological factors and treatments affect the pain experience. Although this model has shortcomings based on the most recent research, no other model has had its heuristic value. Dr. Wilbert Fordyce introduced the idea that pain is behavior and like all behaviors is subject to the influences of environmental contingencies (Fordyce, 1976). This led to the development of behavioral based pain rehabilitation programs targeting operant pain behaviors and a reconceptualization of traditional mind-body thinking that had previously, and to a large extent, still dominates the field of pain management. More recently psychologists have described cognitive mechanisms that mediate the pain experience and have developed very effective cognitive-behavioral interventions that target pain related cognitions and behaviors (Thorn, 2004). In addition, psychologists are increasingly gaining post-doctoral training in clinical psychopharmacology. With prescriptive authority for psychologists gaining momentum this will dramatically expand the scope of the collaborative relationship and enhance continuity of patient care (Sammons & Schmidt, 2001). Clinical health psychologists now address not only psychological factors impacting the diagnosis and treatment of pain, as would be expected, but also factors which are more traditionally the purview of medicine such as targeting pain perception, determining side-effects potential to medications and procedures, providing risk factor assessments for surgical and interventional treatments, and enhancing

compliance to medical treatments. Moreover, the clinical health psychologist, trained in clinical psychopharmacology, will also be involved in determining psychopharmacological interventions designed to target both mood and pain and help monitor drug effects, drug X drug and disease X drug interactions. In order to truly partner with pain medicine, the clinical health psychologist must now be versatile not just in diagnostic and psychotherapeutic approaches traditionally defining clinical psychology, but must also be thoroughly knowledgeable in the neurophysiological, medical/surgical and pharmacological realms of pain medicine.

Dentists too are now key players in pain medicine. No longer limited to just treating Temporomandibular Disorders (TMD), the dentist with specialized training in orofacial pain and pain medicine and board certified in orofacial pain is treating the broad spectrum of facial pain including neuropathic pain such as trigeminal neuralgia, and deafferentation pain; they treat sympathetically maintained facial pain as well neurovascular pain, central pain, musculoskeletal pain and headache. They utilize the entire spectrum of physical medicine, pharmacological and interventional approaches in their treatment of orofacial pain and headache. Their scope of practice has evolved to encompass what has traditionally been the domain of the neurologist. They are also actively involved in clinical orofacial pain and headache research as well as basic research describing the neurophysiological mechanisms involved in chronic orofacial pain and headache.

Like physicians with board certification in pain medicine, the dentist, board certified orofacial pain, is collaborating with clinical health psychologists to treat orofacial pain and headache from a biopsychosocial model. In contrast to the failed medical or disease model of pain, the biopsychosocial model recognizes that pain, like all other disease states, involves a dynamic interaction between pathophysiological processes and psychological and social factors.

The Collaborative Relationship:

There are many forms which a collaborative relationship can take. Collaborative relationships range from the most common which is the simple collaborative model, to the integrated collaboration. In the simple collaborative model, the physician refers the patient to the psychologist when they suspect psychopathology or more commonly when their interventional and pharmacological approaches have failed and they “have no more to offer the patient.” In this relationship the physician is not necessarily interested in further input from the psychologist, or even that psychological input, when offered, will affect their medical management of the patient. Rather, they simply want the psychological problem addressed and many times the patient taken out of their hands. By stark contrast the highest level of collaborative relationship is the integrated biopsychosocial collaboration described in this chapter. In this collaborative relationship both the dentist or physician and psychologist share a common treatment philosophy. They work from the perspective that the patient’s presenting complaint is a function of both biological and psychosocial factors, all needing to be addressed in order to optimize treatment outcome. In the integrated biopsychosocial collaborative model, the dentist or physician and psychologist work side-by-side making mutual decisions regarding the patient at every step of the treatment. The communication is bi-directional and “give-and-

take” with the pain medicine specialist and clinical health psychologist providing each other with critical input and modifying their respective approaches based on this input. This is a dynamic process and one not bound by mutually exclusive treatment protocols.

There are several factors that determine the nature of the collaborative relationship. For example, some conditions lend themselves better to a collaborative relationship like chronic pain, while on the rare occasion, others may favor a simple collaborative relationship, for example some acute pain conditions. However, the predominant factor in determining the nature of the collaboration is the dentist or physician’s and psychologist’s model of illness. Dentists and physicians are trained in a medical model that focuses on identifying underlying disease processes or pathophysiology thought to be at the root of a pain condition. They then target their treatments to *fix* the pathological condition. In pain medicine the interventional anesthesiologist and the surgeon may best exemplify the pinnacle of the medical model orientation. Their focus is to diagnose the pain condition and target the proposed pathophysiology or putative mechanisms usually with little concern for the person experiencing the pain. They then perform interventions such as spinal injections or surgery in hopes of correcting the pathophysiology and alleviating the pain. When there is not an appropriate response, they refer the patient to the psychologist to help them *learn to live with their pain* or take care of the psychological problem *resulting* from or many times *causing* the pain. As previously stated, there is rarely an intention on the part of the referring physician that the psychologist’s interventions or input will affect their treatment plan. This model of course has proven woefully inadequate in addressing chronic pain despite its wide-spread acceptance and profitability. By and large psychologists suffer from limitations similar to those of their physician cohorts. Psychologists are trained in a psychological model lacking in training in the medical aspects of pain, neurophysiology of pain mechanisms, pharmacology of pain and psychopharmacology. Thus, the psychologist is willing to accept referrals from pain medicine specialists and provide psychological treatments in relative isolation from the referring physician. When an evaluation is written by the psychologist it is typically not geared towards the referring physician’s needs but rather to those of other psychologists. The inclusion of psychobabble is seen as largely irrelevant by the referring physician and is of little help in assisting the physician’s treatment of the patient. Thus, a culture of referral and not collaboration is the norm rather than the exception, even within many multidisciplinary pain settings. Psychologists need to reorient their approach and provide information to the pain medicine specialist that is directly relevant to their diagnosis and treatment of a patient’s pain condition. It is also the psychologist’s responsibility to educate the physician that what they have to offer is so much more than *psychotherapy or counseling*.

Purpose:

The purpose of this case presentation is to illustrate the implementation of the integrated collaborative biopsychosocial model. A pain medicine specialist, in this case a dentist board certified in orofacial pain and a board certified clinical health psychologist specializing in pain management, with advanced training in clinical psychopharmacology, collaborate in diagnosing and treating a case of complex chronic orofacial pain. The patient had failed multiple prior interventions, was narcotic and benzodiazepine dependent, and as a result disabled. The

patient had multiple pain and psychiatric diagnoses which were not uncovered by her prior physicians. In addition, much of what she presented with was iatrogenic and further complicated by significant psychological factors that impacted the accuracy of her diagnosis and response to treatment.

Chapter Organization

In this chapter we first introduce the *Clinical Setting* in which the collaborative relationship takes place. This is followed by the *Case Presentation that includes the Identifying Information*. Here we describe the patient's *Current Complaint and Current Medications*. We then present the *Orofacial Pain History, Orofacial Pain Evaluation, Diagnoses, Summary and Treatment Recommendations*. This is followed by the clinical health psychologist's *Psychological Evaluation* and includes the *Psychological History, Mental Status Examination, Diagnoses, Summary and Treatment Recommendations*. We then describe the *Collaborative Treatment Plan* followed by a session-by-session account of the treatment and key collaborative interactions to demonstrate how the integrated biopsychosocial collaborative model guides a dynamic treatment process unbound by rigid protocols.

Clinical Setting

The clinical setting of this collaborative relationship is a university-based multidisciplinary orofacial pain clinic (OFP). Patients are referred by dentists, physicians and other healthcare providers for evaluation and treatment of orofacial pain and headache. The OFP clinic is part of an orofacial pain residency training program and a clinical rotation site for various physician specialists and health psychology graduate students, interns and post-doctoral fellows. All patients entering the OFP clinic are provided with an orofacial pain history and physical examination by a resident and supervised by a core faculty member who is board certified in orofacial pain. The patient is administered a set of psychometric tests after the history and physical examination. Once completed and scored, the patient is scheduled for a clinical health psychology evaluation by a psychology trainee or supervising faculty member. After all evaluations, including testing, imaging and laboratory studies are completed, the patient is reviewed in a multidisciplinary team conference by the entire OFP team and a comprehensive treatment plan devised. A written treatment plan is then drawn up and presented to the patient and their significant-other during a subsequent treatment planning session. Breach of the treatment plan by the patient constitutes grounds for termination from the program. The patient is then scheduled for six consecutive weekly treatment sessions seeing both the dentist and psychologist, on the same day when possible. The patient is subsequently reevaluated every third session until they are discharged to follow-up or the program is terminated due to lack of significant progress. The orofacial pain dentist and clinical health psychologist discuss the patient at each visit in a multidisciplinary team conference format prior to seeing the patient, or whenever needed, and collaboratively decide on the course of treatment.

Case Presentation:

Identifying Information:

The patient is 26 year old single female who was referred by her neurologist for a comprehensive pain medicine evaluation and treatment of a suspected TMJ disorder marked by chronic right-sided orofacial pain of three years duration. She had been unable to tolerate trials of antiseizure and antidepressant medications and the neurologist suspected a significant psychological overlay due her labile mood, dramatic and demanding presentation and her constant “animated” requests for more narcotics and benzodiazepines.

Current Complaint:

The patient initially presented with the following complaints:

Right Sided Facial Pain: The pain was reported to have engulfed the entire right side of her face which she described as continuous aching, sharp, burning and throbbing. The pain was rated as ranging in intensity from a low of 9/10 to a high of 10+/10 on the Visual Analog Scale (VAS) with 10 indicating “The most intense pain imaginable.” On the McGill Pain Questionnaire-Short Form (MPQ) she endorsed all pain descriptors at the highest level. She also reported that she would often have nausea and vomiting associated with the pain when it became unbearable. She thought that, in addition to the pain, her nausea might also be caused by her medications which she would begin escalating when the pain intensity started to increase. She also reported a two-year history of intermittent, very intense, sharp electrical pain lasting seconds to minutes, shooting down the right maxilla and occurring several times a day. This pain rated as a 10+/10 was described as so severe that it would “bring her to her knees writhing in pain”. She was unable identify any temporal pattern to her pain. The patient indicated that the pain was aggravated by talking, eating and brushing her teeth. Stress and exertion also influenced her pain. Additionally, she stated that restricting her diet to soft food was less painful. When questioned regarding what gave her relief, she said that she got some relief with hot packs and narcotics.

Depression/Mood Lability: The patient reported a long history of intermittent depression and labile mood which escalated in intensity with the onset of her pain. Though not actively suicidal she did endorse passive suicide ideation. She reported getting so depressed that often she could not get out of bed. She reported associated fatigue and irritability that at times she described as rage since the onset of her pain.

Sleep Disturbance: The patient reported extremely disrupted sleep because the pain kept her from falling asleep and awakened her throughout the night. She naps throughout the day. She obtained her best sleep with the aide of carisoprodol (Soma®) 350 mg, coupled with as much as two oxycodone (Oxycontin®) 40 mg, diazepam (Valium®) 20 mg and temazepam (Restoril®) 30 mg.

Functional Limitations: The patient rated her level of functional limitations as 9/10 on a VAS with 10 indicating that “...Pain completely interfered with activities of daily

living.” She went on disability 2 years ago. She spends most of her time alone in her room watching television and is unable to concentrate on reading because of pain. Her father shops, cooks and takes care of her.

Current Medications:

Medication	Dose	Schedule
Soma® (carisoprodol)	350 mg	6 PO QD Prn
Oxycontin® (oxycodone)	40 mg	2 po Bid/Prn; 80 mg PO Qhs
Restoril® (temazepam)	30 mg	PO Qhs
Valium® (diazepam)	10 mg	PO Tid

Qd= per day; Qwk= per week; Bid= twice a day; Q8h= every 8 hours; Tid= three times a day; Qid= four times a day; Qhs= at bed time; Prn= as needed; PO= orally administered; NS= Nasal Administration; IM= Intramuscular injection.

The patient denied the use of oral contraceptive pills, nicotine or ETOH.

Orofacial Pain History:

Approximately 4 years ago the patient began noticing an intermittent throbbing sensation in tooth #4 (Figure 1). She went to her dentist who immediately referred her to an endodontist since the tooth had no caries or restorations, and the periapical x-ray showed no periapical lesion. The endodontist took additional periapical x-rays, pulp tested the tooth and did a periodontal examination, finding that the tooth was vital. She was referred back to the dentist who decided to place her on a short course of narcotics (Vicodin 5/500mg) 4 po qd on a prn or as-needed-basis. The episodes of pain began to be more persistent and frequent and the pain began to spread to the entire right side of her face.

When questioned regarding any accompaniments to the pain, she indicated that sometimes she would get nauseous when the pain became intense. Additionally, she thought she had sinusitis on the right side and consulted her PCP who indicated she may have chronic sinusitis and placed her on antibiotics on 2 different occasions without any relief. When questioned about the sinus symptoms, she indicated that she would feel intense throbbing pressure in the right maxillary sinus when the facial pain escalated. She also indicated that she has persistent nasal discharge. On asking for more details regarding the discharge, she stated that the discharge was always colorless and not purulent.

She returned to her dentist who thought that bruxing or TMD problems may be aggravating the tooth pain and he made her a night guard. However, he did a Panorex examination of the TM joints that indicated no TMJ pathology. The splint not only failed to alleviate her symptoms but she continued to complain of intermittent 3 to 4 day severe pain in the tooth and right side of her face with decreasing frequency of pain free days between the attacks. At the insistence of the patient, the dentist decided to do a root canal on tooth #4. The patient reported that she had some significant pain relief for 4 weeks following the root canal but then the pain “came

back with vengeance.” The dentist increased her narcotics to 6 to 8 Vicodin® a day but this failed to provide relief.

She was referred back to the endodontist who re-treated tooth #4 without a change in her pain. She was then referred to an oral surgeon who extracted the tooth. The patient indicated that because of the frustration of not knowing what was causing her toothache, her mood ranged from giddy to irritable to extremely depressed. Additionally, she was beginning to lose considerable work time. The dentist prescribed diazepam (Valium®) for her anxiety and emerging sleep disturbance. After she had the tooth extracted, the pain continued to persist and seemed to be spreading to adjacent teeth numbers 3 and 5. She returned to the dentist who did root canal therapy in these teeth but since she continued to have the same pain, she was referred back to the oral surgeon who extracted the additional teeth, again without relieving her pain. After the extractions of teeth numbers 3 and 5, she began experiencing a dull burning sensation around the extraction sites. The pain was more continuous and was sometimes accompanied by sharp electrical shooting pains lasting seconds to minutes with an intensity of 10/10 on the VAS, radiating out from the extraction sites. The oral surgeon recommended that she see a neurologist. The neurologist diagnosed the patient with trigeminal neuralgia and ordered a MRI and MRA both proving negative. He prescribed carbamazepine 600 mg per day with the idea of increasing it to 1,200 qd. The patient almost immediately began experiencing dizziness, drowsiness, ataxia, blurred vision and headache and became severely depressed. She stopped taking the medication on her own and returned to the neurologist who started her on gabapentin (Neurontin®) 300 mg po tid. This medication, according to the patient, seemed to help the tooth pain but she could not function due to the sedation and again discontinued it without consulting her neurologist. The neurologist then changed her narcotic from Vicodin® to Oxycontin® 10 mg and increased the dose to 6-8 po qd on an as-needed basis. She reported that she liked the Oxycontin® and it was the only thing that had helped her. However, it did not control the periodic attacks of shooting electrical and throbbing facial pain. She reported that she had been unable to tolerate any other analgesics which included Vicodin® (hydrocodone), Norco® (hydrocodone) and Dilaudid® (hydromorphone). She also reported that 100 mg of intramuscular Demerol® (meperidine) provided her with 1 to 2 hours of pain relief.

The patient’s symptoms continued to worsen and the neurologist referred her to a neurosurgeon for consideration of a microvascular decompression (MVD), although the MRI was negative regarding a vessel encroaching on the trigeminal nerve. The patient was frightened about having “brain surgery,” and refused the MVD. The neurologist then referred her to an anesthesia-based pain center for pain management. The anesthesiologist performed an occipital nerve block under sedation which subsequently resulted in a severe flare-up. He proposed several more blocks and a trigeminal rhizotomy but she refused. The anesthesiologist increased her OxyContin to the current levels. She was then referred back to the neurologist and the anesthesiologist said she was an “addict” and borderline. The neurologist then referred the patient to the UCLA Orofacial Pain Clinic for evaluation, since she was taking more narcotics than he was comfortable prescribing and she was also escalating her narcotic demands and consumption and was obtaining additional Oxycontin from other unspecified sources including the internet. He also thought that she may have TMJ problems since she did have pain and clicking in the right TMJ area.

Orofacial Pain Evaluation:

The cranial nerve examination was grossly intact. The examination of CN II noted that visual acuity was intact, the visual fields were intact to confrontation and the fundoscopic examination showed flat and sharp discs and an absence of hemorrhage or exudate. No double vision was reported with testing the extra-ocular eye movements. The pupils were equal, round, reactive to light and accommodating. The pupillary reflex was present. No lateral or vertical nystagmus was noted. The trigeminal sensory and motor testing was normal and symmetrical. The corneal reflex was also intact and symmetrical. Facial movements were normal with no facial nerve paresis noted. Her hearing was normally responsive to finger rub and the Weber's was midline. Her palate elevated symmetrically and the gag reflex was present. The motor of CN 11 was bilaterally equal and normal and her tongue was midline. Upper and lower motor strength was normal and all reflexes were 2+. Finger/nose coordination was smooth and on target.

Intraoral neurosensory testing was done and visual inspection of the extraction sites showed well healed sites with no lesions apparent. Static mechanical allodynia was noted over the extraction sites. Application of 20% benzocaine dropped her aching and burning extraction site pain level from a 10/10 to a 7/10 and infiltrating 2% lidocaine into the area further decreased the pain to a 5/10. She reported that the dull aching, throbbing pain remained unchanged.

The stomatognathic examination noted a voluntary pain free opening of 24 mm. The patient could actively open to 33 mm with pain and she could be passively stretched to 44 mm with significant preauricular and masseter muscle area pain on the right side. An early click was noted in the right TMJ that the patient indicated had been there since she was a teenager. The click was not painful and she denied a history of jaw locking. The jaw deviated to the right during the initial opening path then returned to midline as she approached the widest opening. When she clenched on a tongue blade placed between the posterior teeth on the left side, she had increased preauricular pain on the right. Clenching on a tongue blade on the right side was not painful. Her occlusion was grossly normal with contacts in all quadrants. Significant tongue/cheek ridging was noted. This is an indication of significant jaw parafunction. Additionally, she had only mild dental attrition, indicating that she probably was clenching more than grinding her teeth.

The palpation examination noted severe pain on the capsule of the right TMJ and mild pain on the left TMJ capsule. Palpation of the right masseter muscle caused severe pain that spread to the right TM joint and the temple area. This replicated some of her facial pain complaint. Palpation of the right temporalis and masseter muscles also caused severe radiating pain and dysesthesia in the extraction sites of #3, 4 and 5 largely replicating her pain. Additionally, she had severe pain with palpation in the splenius capitus muscles bilaterally that radiated to the occiput. Severe tenderness was also noted in the mid-trapezius muscles, radiating up the neck.

Orofacial Pain Diagnostic Impressions:

1. Traumatic Trigeminal Neuropathy
2. Myofascial Pain Syndrome
3. Right > Left Capsulitis
4. Narcotic induced secondary hyperalgesia
5. Rule out psychological factors

Orofacial Pain Assessment/Summary:

The patient had difficulty accurately describing her pain and discriminating differences in pain intensity and pain quality without significant probing. Rather, she referred to her different complaints in a global fashion seeing them as one pain rather than layers of different pains. Based on this examination it appeared that the patient was experiencing several different pains including traumatic trigeminal neuropathy secondary to her endodontic treatments and subsequent extractions. In addition, it appears that the patient's tooth pain may have initially been myofascial in origin since temporalis and masseter muscle trigger points referred a dysesthetic sensation into the areas of teeth numbers 3, 4 and 5 (Simons, Travell, & Simons, 1999). The spreading burning and aching pain into the entire right side of her face was likely a result of narcotic induced secondary hyperalgesia (Vanderah et al., 2001), myofascial pain and right sided capsulitis which was further aggravated by the clenching of her teeth.

Treatment Recommendations:

1. Refer the patient for a Behavioral Medicine Evaluation prior to initiating any physical medicine treatment since the patient's psychological status may grossly affect accuracy of diagnosis and the treatments rendered for the pain.
2. Prior to initiating any medication trials obtain the psychologist's recommendations for medications that will treat both her mood and her pain.
3. Pain management will require controlling and eventually discontinuing the Oxycontin and Atiq which are involved in hyperalgesia. Since she is taking Oxycontin on a daily basis, it may be necessary to use a blinded descending dose pain cocktail with methadone to facilitate withdrawal her from the narcotic (Buckley, Sizemore, & Carlton, 1986; Ralphs, Williams, Richardson, Pither, & Nicholas, 1994). During this phase of treatment, the patient will be advised that random urine screening will be required to make certain she is not taking other narcotics or drugs.
4. Soma, which is highly habit forming, should be withdrawn and replaced with a more appropriate muscle relaxant, if needed
5. Her benzodiazepine use will also need to be tailored with the ultimate goal of completely withdrawing the Valium and Restoril.
6. The patient will be given a treatment contract outlining the treatment protocols and what is expected of her in terms of compliance and medication use.
7. Patient will be given a myofascial pain physical medicine protocol that involves learning home stretching exercises for the jaw and neck. This will include the use of moist heat and ice and Spray and Stretch® (Fluori-Methane®) vapocoolant spray to facilitate the stretching.

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Trigger point injections will be considered at some point in the future and contingent upon compliance to the home stretching exercises.

8. The neuropathic pain will be treated with a topical anesthetic applied over the extraction site to desensitize the trigeminal neuropathy. In addition an appropriate membrane stabilizer will be prescribed that will target both pain and mood. It should be noted that the patient had been given both carbamazepine and gabapentin but they resulted in adverse effects that caused the patient to discontinue them. This likely reflected the high starting doses of these medications.

Psychological Evaluation:

The patient was administered the MMPI-2, Cognitive Strategies Questionnaire, Beck Depression Inventory, and Beck Anxiety Inventory immediately following her first meeting with the orofacial pain specialist. The test scores are depicted in Table 1:

Table 1: Psychometric Test Scores

MMPI-2: L=56; F=68; K=43; Hs=78; D=90; Hy=84; Pd=79; MF=43; Pa=75; Ps=78; Sc=72; Ma=63; ES=32; MAC=77; Goldberg=59.

Brief Summary: The MMPI-2 indicates a severely psychologically compromised individual with labile mood, severe depression, anxious and obsessive thought qualities and poor coping resources. The profile further indicates a significant potential for operant/behavioral contributions to her pain and disability. The profile suggests significant somatization, poor insight, externalization of blame and a high potential for side-effects, poor compliance, significant substance abuse potential and long history of volatile interpersonal relationships and possible childhood abuse.

Beck Depression Inventory (BDI) = 44

Brief Summary: This BDI score shows severe depression with mild to moderate suicide ideation indicated by her endorsement of suicide ideation without intent on Question #9 and hopelessness (Question #2).

Beck Anxiety Inventory (BAI) = 36

Brief Summary: This BAI score is indicative of severe anxiety.

Cognitive Strategies Questionnaire= Diverting Attention= 12; Reinterpreting Pain Sensations= 13; Coping Self-Statements= 10; Ignoring Sensations 15; Praying= 28; Hoping= 28; Catastrophizing= 33; Increase Behavioral Activities= 12.

Brief Summary: Take together these CPQ scores indicate a significant reliance upon catastrophic thinking and endorsement of passive coping strategies with a conspicuous lack of active coping strategies.

Once all psychometric testing were completed and scored the patient was scheduled to see the clinical health psychologist alone for a one hour evaluation session. The patient's father, her only significant other with whom she lived with, was also scheduled to see the psychologist separately during the initial session.

Psychological History:

The patient was born on January 16, 1980 in Los Angeles California. She was an only child raised by a mother who was an alcoholic and verbally, emotionally and sometimes physically abusive of her. She thinks her mother was either borderline or bipolar although no formal diagnosis was ever given. The mother's mood was described by both the patient and her father as very

unstable and unpredictable with frequent outbursts of rage. Her mother committed suicide when the patient was 17 years old. She described her father as a meek and passive individual who was always very supportive of her and the only one who ever loved her. However, he worked long hours and was rarely available to her. She reports having been diagnosed with ADHD in grade school but was unable to tolerate the trials of methylphenidate. She reports that as she got older the ADHD symptoms improved, but she became dysphoric for long periods of time. She denied manic episodes, although there were questionable hypomanic episodes which the patient minimized as non-problematic. The patient presented with a long history of unstable relationships. She had a prior overdose attempt resulting in a 72 hour hold five years ago relating to one of her failed relationships. She also reports a long history of anxiety. In the past she reports periods of abusing ETOH, cocaine and THC but has not used any of these substances since her psychiatric hospital discharge five years ago. She worries a lot and feels misunderstood and unappreciated. She was employed as a surgical nurse for 5 years prior to going on disability due to her pain. She reports being a hard worker but always had conflictual work relationships. She attributes this to having to work with others that are *incompetent* and do not meet her standards of care. She has never seen a psychologist before but she was in psychoanalysis with a psychiatrist for three years in her late teens and early twenties. She felt therapy helped her "some". She stated that aside from her father he was the only person that would *listen to me, be non-judgmental and not place any demands on me*. Her PCP and neurologist prescribed fluoxetine (Prozac®) 20 mg, sertraline (Zoloft®) 100 mg and bupropion SR (Wellbutrin SR®) 150 mg in the past for her depression and anxiety but she was unable to tolerate them due to tearfulness, anxiety and significant agitation. Her father reported that while taking the antidepressants the patient exhibited hypomania (i.e., she went several nights without sleeping, cleaned her room repeatedly, spoke with rapid pressured speech and became very active, but was not "out of control"). She reported that diazepam (Valium®) was *great* in terms of helping her anxiety, sleep and occasional muscle spasms. However, her neurologist limited the dose to 60 mg po qd when her daily dosage escalated to over 80 mg po qd and he found out that she was procuring it from multiple sources. She denied sexual abuse, self-mutilation, eating disorder, panic disorder and OCD.

Mental Status:

The patient was driven to the evaluation by her 64 year-old father with whom she is now living since being placed on disability two years ago. The patient was interviewed for one hour and then separately her father was interviewed for 20 minutes. Her mental status exam revealed a well nourished, well developed woman looking younger than her stated age of 26. She appeared very depressed and agitated. At times she slurred her words and failed to make good eye-contact. However, she was able to maintain a linear train of thought. There was no evidence of thought disturbance or psychotic thought processes. She appeared to be of above average intelligence. Her speech was pressured and she was intermittently tearful. She reported short-term memory and concentration difficulties due to the pain. Long term memory was intact. She reported passive suicide ideation and noted that although she has no plan or intent she stated that she can "*...no longer live this way since my physician limited my medications.*" Her impaired cognitive status appeared to reflect excessive narcotic and sedative use as well as her mood

disturbance. A formal Mental Status Examination was not conducted and further cognitive testing was not warranted at the present time.

Psychological Diagnostic Impressions:

1. Bipolar-2 Disorder (Depressed)
2. Rule Out Borderline Personality Disorder
3. Psychological Factors Affecting Physical Condition.
4. Narcotic and Benzodiazepine Overuse

Psychological Summary:

Psychological factors play a critical role in this patient's presentation. It is clear that her psychological status is impairing an accurate assessment of her pain complaint. The patient views her pain as a constantly severe 9/10 to 10+/10 level of pain, unaffected by anything and she is unable to discern the subtleties of what is a multidimensional pain problem. As a result of her tumultuous behavioral style the pain serves to operantly remove the patient from conflictual psychosocial/interpersonal relationships. Pain further acts to modulate her significant interpersonal distress which preceded and was further aggravated by the onset of her pain. Narcotics are also used in a similar mood modulating manner. The patient likely has Bipolar 2 Disorder that has never been adequately addressed with psychological treatments or the appropriate mood stabilizing medications. In addition, she has features Borderline Personality Disorder based on her long history of dramatic and volatile-unstable relationships, demanding self-serving history of psychosocial interactions, history of para-suicidal behaviors and self-destructive behaviors. However, such behaviors are also seen in the bipolar spectrum disorders. The physicians that were prescribing her the psychotropic medications and the psychoanalyst that saw her for three years failed to make the correct diagnoses and undertake an appropriate course of treatment. They viewed her as having *agitated depression* secondary to her pain. Due to the patient's articulateness, ability to be charming and the fact that she was very attractive, she was able to present herself in a much less disturbed manner, although the neurologist suspected a significant psychological overlay. She has, in the past, become more agitated, anxious, dysphoric and hypomanic when trialed on fluoxetine, venlafaxine and bupropion. Such reactions to antidepressant medications are often reported in patients with Bipolar Disorder and are frequently the signal for undiagnosed Bipolar Disorder. Given her past reactions to antidepressants and since she presented agitated to her neurologist he decided to place her on benzodiazepines. Though she continued to feel depressed her agitation became more tolerable and her sleep improved, but she required increasing benzodiazepine doses to maintain her calmness and some semblance of well being. Her impaired cognitive status and slurred speech are a direct result of her medication intake and depression and should improve once these medications are appropriately tailored. Moreover, benzodiazepines should be restricted in patients with potential Borderline Personality Disorders since they tend to disinhibit agitation and may also rapidly escalate in dose. Of paramount importance is that her mood disturbance complicates her presentation by decreasing her ability to discriminate pain from suffering. As a result it is almost impossible to make an accurate diagnosis while her mood and medications are unstable. She also presents with a moderate to severe potential for side-effects and is a poor surgical-interventional candidate. In order to derive the most accurate assessment

of her pain, her mood will have to be stabilized and her narcotics and benzodiazepines will need tailoring using a blinded pain cocktail format. Moreover her Soma will also need to be systematically reduced and eliminated. The patient has greatly compromised coping resources and is unable to modulate her emotional reactivity. As a result she amplifies her symptoms, uses catastrophic coping mechanisms and retreats into passive and regressive coping modalities. She uses narcotics and benzodiazepines as a means of tempering her emotional reactivity. She may also be using side-effects operantly to ensure a supply of the narcotics and sedatives of her choice. Somatization is severe and needs to be addressed directly through cognitive-behavioral treatments (Woolfolk & Allen, 2006). Although she has passive suicidal ideation there is no plan or intent and her suicide potential is low, at the present time. Her sleep disturbance feeds into her pain and mood disturbance and this too needs addressing both behaviorally and with appropriate pharmacologic treatments.

While psychological factors are critically determinant of the patients overall presentation it does not imply a lack of significant pathophysiological processes that need to be addressed, rather this points to the complex and multidimensional nature of the patient and her pain complaints.

Clinical Health Psychology Assessment/Recommendations:

1. It is critical to first stabilize her medications using a blinded pain cocktail format. Consider replacing Oxycontin with methadone on a time contingent basis. An open pill format will be challenging at best and will certainly prove ineffective. In addition, Valium should be included in the cocktail.
2. Systematically reduce the Soma by one pill a week.
3. The patient will require random drug toxicity screening.
4. Next attempt to stabilize her mood disturbance. A very low initial dose of a mood stabilizer that will target her mood, agitation and possibly neuropathic pain is recommended such as lamotrigine (Lamictal®).
5. Do not prescribe any antidepressants for pain due to potential for switching to mania, hypomania or increase her agitation secondary to Bipolar 2 Disorder.
6. Temazepam needs to be systematically reduced and eliminated and replaced with behavioral sleep hygiene.
7. Side-effects potential to medications and interventional procedures is moderate to severe. Therefore, ease into interventional procedures if required. Start medications at very low doses because of her potential for side-effects and since in the past most medications have been initiated at too high of a dose. Her side-effects profile may also be a means by which the patient is able to operantly control her treatment and medication choices so strict limits need to be specified regarding drug use and requests for medications. Also present the patient with substantial information regarding medications prescribed since she is a bright individual who requires considerable information. Behavioral techniques will be used to manage side-effects.
8. Compliance may be very problematic, especially to self-management techniques due to her passive coping style. Provide patient with small initial assignments prior to embarking on a full program.

9. Introduce a daily activity-walking program in the AM once medications and mood are beginning to stabilize.
10. Initiate cognitive-behavioral pain management and target emotional self-regulation, coping skills, compliance and side-effects control.
11. Once patient's medications, pain and mood have been stabilized refer her for Dialectical Behavioral Therapy (DBT) to treat her mood and personality issues. She will be too overwhelmed if this referral comes too early.

Collaborative Treatment Plan:

The orofacial pain dentist and clinical health psychologist met following their evaluations and reviewed all findings. They integrated their respective treatment recommendations and agreed upon a comprehensive pain medicine treatment plan and the best sequence of treatment delivery to optimize treatment outcome. The collaborative treatment plan was as follows:

1. The patient will first be provided with a written treatment contract. It will specify a time-limited 6 week initial period of treatment and then a re-evaluation period. It will specify that all medications will be provided only by the orofacial pain specialist and will be filled only at a specified compounding pharmacist. She will also be required to accurately and honestly complete daily pain and activity diaries. Non-compliance to any aspect of the contract will be considered grounds for immediate discharge from the treatment program.
2. The next step will be to stabilize the patient's medications using a liquid pain cocktail (Fordyce, 1976). The blinded pain cocktail contains the medications suspended in clear cherry syrup to mask the flavors. The patient is not able to determine the amount of medication included in the syrup and is instructed to take a set volume of the cocktail, usually 10 ml, by the clock and not on a pain contingent basis (prn). The blinded cocktail affords many advantages to prescribing pills. It eliminates the obvious counting of pills by the patient that exacerbates the behavioral attachment to the pain medications and it allows a precision of control over the dosing that is not achievable with pills. As the active ingredients in the cocktail are reduced, the deficit is replaced by additional cherry syrup. Her Oxycontin will be changed to an equivalent dose of methadone. The cocktail will also include the Valium. An approximate 20-25% per week taper will ensue following a week, or if needed two, of adaptation to the new drug delivery format. Prescriptions will be filled on a week-to-week basis at her weekly appointments and there will be a strict no-loss agreement regarding her medications and prescriptions. Restoril and Soma will be systematically withdrawn and replaced with behavioral strategies. Random drug screens will be required.
3. After her initial medication doses are stabilized the patient's mood will attempt to be stabilized with a trial of Lamictal starting at a very low dose (25 mg po qd) and slowly increasing it to the highest therapeutic. Although Lamictal has proven effective in the treatment of bipolar depression it is considered an "add-on" medication for trigeminal neuropathy/neuralgia. Once her mood and ability to discriminate pain from suffering has improved then additional treatments will be added in a systematic manner.
4. The patient will be provided with a physical medicine self-management program to treat the myofascial pain and promote self-control and active coping. This will involve performing stretching exercises targeting her head and neck muscles on a 6 times day basis.

5. The patient will be prescribed Orabase® with Capsaicin® to be mixed in equal proportion and applied to the extraction sites of teeth #3, 4 and 5 six times a day to address her trigeminal (Merrill, 2004; Padilla, Clark, & Merrill, 2000).
6. The patient will be sent for a full blood work-up including CBC, LFTs and Renal Panel prior to onset of any treatment in order to obtain baseline levels.
7. The primary goal for the clinical health psychologist will be to contain the patient and navigate her through the pain medicine program. This will involve behavioral medicine treatments targeting the patient's mood, sleep disturbance, side-effects, and compliance and coping resources. The psychologist will also assess the effects of the medications on the patient's pain, sleep, mood, mental status and behavioral status.
8. Once treatment is approaching completion she will be referred for Dialectical Behavioral Therapy (DBT) to target her long standing mood and personality issues. This may also involve a referral to a psychopharmacologist to re-evaluate her psychotropic medication regime.

Collaborative Treatment:

Session #1:

Team Conference: Prior to the Treatment Planning Session with the patient, the dentist and the psychologist met in a team conference to discuss the patient and ensure that we had our treatment plan in place. It was decided that the session would be primarily run by the dentist with the psychologist providing input as needed. We would ask the patient to take notes during the session and the psychologist would review the patient's notes with her to ensure accuracy and completeness. The patient's medication dosing schedule was computed.

Treatment Planning Session: The patient completed all assessment forms which included VAS for current pain and highest, usual and lowest pain over the past week. The assessments also included a VAS for sleep quality, mood and functional limitations as well as a modified McGill Pain Questionnaire Short-Form. The first session was a conjoint treatment planning session with the dentist, psychologist and the patient and her father. The session started with the dentist and psychologist's overview of their findings, their assessment of the findings, treatment rationale and presenting the comprehensive time limited treatment plan. Establishing rapport with the patient was an important part of this session. During this session the patient signed the written treatment contract and the narcotic contract. Any non-compliance would be cause for dismissal from the program. During this session all forms, including pain diaries were reviewed and obstacles to compliance discussed. Immediately after this meeting the patient's neurologist and primary care physician were contacted and presented with the diagnosis and treatment plan. They both agreed not to prescribe any further medications relating to her pain complaints or mood. In addition, the patient was provided with written information regarding the medications that were going to be prescribed and written informed consent for the medications and treatment obtained. Her first set of prescriptions were written by the orofacial pain specialist. The first step was to stabilize her medications using a blinded pain cocktail targeting her use of Oxycontin and Valium. Aside from affecting mood, narcotics are well known to up regulate opioid receptors at the level of the rostral ventromedial medulla and induce secondary hyperalgesia (Vanderah et al., 2001). Moreover, the Soma is extremely problematic and, in our

opinion, has no place in pain management. It is a pro-drug that breaks-down to meprobamate, a highly habit forming sedative with questionable muscle relaxing properties. Meprobamate originally was marketed as Miltown® but is now rarely used due to its habit forming potential, toxicity and drug X drug interactions. Withdrawing the potentially offending medications initially met with resistance from the patient since these have been the “...only thing that helps my pain.” We emphasized that she would experience many changes and some would be challenging to deal with at first. She was also told that at least six weeks were required to evaluate our treatment program and that her compliance to the program and what she chose to do were the key factors that would determine a successful outcome. The patient signed the treatment contract.

Orofacial Pain Treatment Session: The dentist prescribed her pain cocktail and provided verbal and written instructions regarding how to take the solution as well as possible adverse drug reactions. The prescription was written for exactly seven days, to be refilled at her next appointment. The medication dosing and scheduling is listed below.

The dentist took impressions for a night guard to address the patient’s capsulitis and bruxing and then answered her questions. The nurse then obtained a urine and blood sample for toxicity screening and baseline blood works. Following this the patient was sent to the psychologist’s office.

Medications Prescribed:

Current Medications:

Medication	Dose	Schedule
Pain Cocktail	10 ml	PO Q8h
Methadone	168 mg	PO Qwk
Valium	210 mg	PO Qwk
Soma	350 mg	PO Q6 Prn
Restoril	30 mg	PO Qhs 7 nights/week

Qd= per day; Qwk= per week; Bid= twice a day; Q8h= every 8 hours; Tid= three times a day; Qid= four times a day; Qhs= at bed time; Prn= as needed; PO=orally administered; NS=Nasal Administration; IM= Intramuscular injection.

Psychological Treatment Session: During this session the psychologist acted in a supportive role assuring the patient that he understood her concerns about the treatment and altering her medications which she felt had helped her in the past. The psychologist pointed out that the in spite of the medications she was still experience significant pain and disability and that it was now time for a new strategy if she wanted to change. The psychologist reviewed all of her psychological diagnoses and testing results in detail. He presented her with the psychological treatment plan that consisted of 6 to 10 structured weekly sessions emphasizing skill-focused cognitive-behavioral pain interventions. The patient was told that she was the most important team member and what she did or did not do was the ultimate determinant of success.

Potential obstacles to successful treatment were reviewed and problem solved. The patient was then taught a basic diaphragmatic breathing relaxation exercise and told to practice three times a day for at least 3-minutes each time. The patient was provided 0-10 numerical pain rating diaries to complete four-times a day (8 AM, 12 PM, 3 PM and 8 PM). Medications and brief one word descriptions of her activities, including relaxation were also recorded on the diaries. The patient was instructed to no longer nap during the day and to have her father awaken her no later than 8 AM. The patient was scheduled to return for her follow-up visits in one week to see both the dentist and psychologist. The psychologist reviewed her session notes and answered her questions.

Session #2

Team Conference: The patient was reviewed during multidisciplinary rounds the morning prior to her clinic appointments. She had called daily several times a day complaining about being overly sedated and nauseous and of higher pain levels. She was instructed by the dentist to continue the cocktail and he reminded her that the change in delivery format and narcotics often resulted in challenges during the first week. As she escalated her demands during the week the psychologist set a daily phone session with her to deal with her distress and side-effects and provide her with support and drug effect monitoring. During these phone sessions the patient sounded very sedated and exhibited slurred speech and impaired cognition. She was dramatic and tearful and repeatedly requested that she be switched back to Oxycontin. Although she reported increased pain she could not specify what dimensions of her pain were most problematic.

Current Medications:

Medication	Dose	Schedule
Pain Cocktail	10 ml	PO Q8h
Methadone	168 mg	PO Qwk
Valium	210 mg	PO Qwk
Soma	350 mg	6 PO Prn
Restoril	30 mg	PO Qhs 7 nights/week

Qd= per day; Qwk= per week; Bid= twice a day; Q8h= every 8 hours; Tid= three times a day; Qid= four times a day; Qhs= at bed time; Prn= as needed; PO=orally administered; NS=Nasal Administration; IM= Intramuscular injection.

Orofacial Pain Treatment Session: The patient completed all pre-treatment assessment forms. The orofacial pain specialist reviewed the diaries and medications with the patient and provided her with reinforcement for what she had completed. The dentist prescribed Orabase® with Capsaicin® to be mixed in equal proportion and applied 6 times a day to the extraction sites of teeth #3, 4 and 5 to begin to address her trigeminal neuropathy (Merrill, 2004; Padilla et al., 2000). She was asked to record the times that she applied the mixture on her diaries. He then had her apply the mixture to the tooth sites and discussed the side-effects with her, which was primarily a burning sensation from the Capsaicin. Since the patient was experiencing significant

sedation he reduced the Soma by 50% to three pills a day on a prn basis. The pain cocktail was reduced by approximately 20-25%. He instructed her to continue to take the pain cocktail on a Q8h basis. The patient complained about the blinded format and "why can't I know about how much medications I am taking" and that "this seems childish and doesn't work anyway." The dentist again explained the rationale for the blinded pain cocktail format and pointed out that her pain levels remained unchanged on her diaries and from baseline. He provided her with support but maintained the firm stance that this would be the only way we would work with her aside from placing her in an inpatient detoxification program. Moreover, he explained that the issue was not about trust but providing the most effective means of stabilizing her medications. The patient's prescription was not filled until after the psychologist met with her. The patient was scheduled to return for her follow-up visit in one week to see both the dentist and psychologist. She then went to the psychologist's office.

Psychological Treatment Session: The psychologist reviewed her diaries. She had missed or had retrospectively rated for several days and the psychologist focused on problem solving the non-compliance and discussing the importance of keeping *accurate and honest* diaries as she had agreed to do in the treatment contract. The patient animatedly and angrily complained of feeling sedated and experiencing nausea since starting the pain cocktail and the psychologist provided her with the exact same message that the dentist had regarding this matter. She continued to feel depressed and at times very agitated. The psychologist normalized the adverse events and then attempted to focus on distraction and relaxation to control the nausea assuring the patient that her symptoms would diminish. All of the patient's complaints remained the same and she was agitated because she was not getting immediate results. The psychologist focused on this issue reminding her that it would take some time to see results and that she had only been in treatment for one week. Although the patient reported taking the medications as directed her father reported that she was doubling up on her medications at times, had run out of the pain cocktail by mid-week and had been taking other medications that she had stockpiled. Moreover, the father was worried that she might overdose on the medications and that her mood had been swinging "wildly". The psychologist firmly confronted the patient with the drug information and reminded her that this was a breach of her treatment agreement and that she had a choice. First, we could discharge her from treatment immediately or her father would dispense all medications as we directed. The patient became very tearful and verbally aggressive but confessed to taking additional medications and doubling up when the pain "got real bad." The patient was advised that her non-compliant and aggressive behavior would not be tolerated and that the only relationship allowable was a mutually respectful one. She agreed to have her father dispense her medications and the psychologist further informed her that breaching the contract again would be grounds for dismissal with no further chances for treatment in the clinic and that we would suggest an inpatient drug rehabilitation program. The psychologist sent her for a toxicity screen and then met with the dentist prior to leaving. The patient's Restoril was decreased to 30 mg for five nights and 15 mg for two nights, also to be dispensed by the patient's father. The dentist met with the father and wrote out the entire medication schedule. The psychologist scheduled a maximum of three phone calls from the patient during the next week in order to begin rein in her multiple daily calling.

Summary: At this point in treatment lack of compliance to the medications and diaries were the critical issue. The patient had not been forthcoming with the dentist and only when the father was interviewed was the breach of the narcotic contract revealed. The dentist and psychologist took a very firm stance as this was no time to “process” her reasons for non-compliance, but rather to rein it in and set strict limits with respect to medication use and her behavior. Her lack of compliance also demonstrates the importance of obtaining external data from the significant others of patients, especially those patients with bipolar disorder and personality disorder. Also of importance is that the dentist did not prescribe the medications until the patient had met with the psychologist in order to get his feedback.

Session #3

Team Conference: The patient called shortly after her session the previous week and again complained about the blinded pain cocktail delivery and of no pain reduction, and more nausea and intermittent vomiting and throbbing in the facial area with associated dizziness. The psychologist reminded her that she had two more calls left and that she should use the time wisely calling only when they were really needed. The patient continued to call daily but after the third call the psychologist did not return her calls. During the final call she did not complain as much about sedation and sounded much less cognitively impaired over the phone. Her father collaborated that she was doing better after an argumentative initial three days of him dispensing her medications. He also reported that her mood continued to be depressed although she seemed less agitated to him. The toxicity screen from the previous week revealed hydromorphone, which is a metabolite of Oxycodone. This indicated that the patient had taken Oxycontin (oxycodone) during the period prior to the analysis. It was decided, based on the psychologist’s conversation with the patient and her father over the week that the dentist would reduce the active contents of the pain cocktail by approximately 20-25%.

Current Medications:

<u>Medication</u>	<u>Dose</u>	<u>Schedule</u>
Pain Cocktail	10 ml	PO Q8h
Methadone	130 mg	PO Qwk
Valium	176 mg	PO Qwk
Soma	350 mg	3 PO Prn
Restoril	30 mg	PO Qhs 5 nights/week
Restoril	15 mg	PO Qhs 2 nights/week
Orabase-Capsasian	Apply	Q6

Qd= per day; Qwk= per week; Bid= twice a day; Q8h= every 8 hours; Tid= three times a day; Qid= four times a day; Qhs= at bed time; Prn= as needed; PO=orally administered; NS=Nasal Administration; IM= Intramuscular injection.

Orofacial Pain Treatment Session:

The dentist reviewed the pain diaries and toxicity findings with the patient and her father. Her father reported that she had been compliant and seemed “much better” to him in terms of her mood and behavior. The dentist delivered the splint and instructed the patient to only use it at night when she went to bed. The dentist reduced her pain cocktail by 20%. Restoril was not changed since the patient reported increased sleep disturbance. Soma was reduced by another pill each day.

Psychological Treatment Session:

Following the patient’s meeting with the dentist she met with the psychologist who reviewed her diaries, medication response and mood. The psychologist addressed concerns she was having about the medications, especially the sedation, dizziness and nausea but he did not reinforce complaints by attending to them. Reinforcement was given for action and positive coping. The patient complained of limiting her phone calls and she was reminded to choose them wisely and again was limited to three calls for the next week. The psychologist reviewed the use of relaxation for nausea, pain, mood and sleep. She felt her mood was about the same. The psychologist began an in depth discussion about discriminating pain versus suffering (bothersomeness) using the McGill Pain Questionnaire (MPQ) descriptors as examples of sensory and affective dimensions of pain. He discussed that treating the patient’s suffering with analgesics and medical procedures would be futile and that suffering should be treated psychologically. She was asked to include a rating of pain bothersomeness on her pain diary four times a day at the same time she rated her pain intensity. The psychologist also discussed the importance of stabilizing her mood using a mood stabilizer, in this case Lamictal®. The psychologist fully informed the patient regarding Lamictal and its possible adverse effects. The patient was informed that Lamictal was also being used to treat her trigeminal neuropathy. The dentist then prescribed Lamictal 25 mg PO QD a day. The recommended target for bipolar monotherapy is as high as 200 mg per day in divided doses and maintenance dose for neuropathic pain is 200 mg per day. For medical legal purposes the medication was provided to her by the dentist for pain. The psychologist then reviewed the relaxation and instructed her in cue-controlled relaxation. Sleep hygiene was initiated.

Session Summary:

Though limited to three phone calls the patient called multiple times daily following Session #2. The psychologist set limits with the patient’s repeated calling by no longer answering her calls after she had exceeded her limit of 3 calls. Thereafter, when she called with an emergency she was instructed by the office staff to go to the emergency room at the university hospital, which usually involved several hours of waiting or to distract herself by taking a walk, listening to music or doing relaxation. The emergency room wait also served as a deterrent for the patient’s repetitive calls to complain. When the patient tried to call the psychologist after exceeding her call limit she tried contacting the dentist and resident who did not return her calls. Though this may sound somewhat brutal, persistent calls to her doctors to lodge the same complaints is under operant control and constituted a behavior in need of modification. Moreover, both the dentist and psychologist used contingent eye-contact during all sessions that is, only making eye

contact and responding to the patient when she displayed appropriate and non-complaining verbal behaviors, focused on what she did rather than did not do and exhibited adaptive coping. Since her pain cocktail appeared to be stable it was decided to address her mood liability and trigeminal neuropathy using Lamictal. The constant communication between the dentist and psychologist as well as the consistent message provided to the patient kept her from “splitting” her treatment team and helped contain her acting out.

Session #4:

Team Conference: The patient only called three times during the week and during those calls she did not complain or act out. She reported that her shooting facial pain seems to have reduced “some” and she did not feel as emotional or irritable. She denied side-effects to the Lamictal. Her father reported she was better and that she continued to exhibit labile mood although to a less severe degree. They had gone out for a meal and to a movie one evening for the first time in years. The patient’s pain cocktail would be reduced approximately 20-25%, Soma would be reduced by one pill and Lamictal doubled. It was agreed that the patient was ready to initiate the physical medicine portion of the pain medicine program. The patient’s toxicity screen from the previous week was positive only for the drugs that were prescribed.

Current Medications:

Medication	Dose	Schedule
Pain Cocktail	10 ml	PO Q8h
Methadone	100 mg	PO Qwk
Valium	140 mg	PO Qwk
Soma	350 mg	2 PO QD Prn
Restoril	30 mg	PO Qhs 5 nights/week
Restoril	15 mg	PO Qhs 2 nights/week
Orabase-Capsasian	Apply	Q6
Lamictal	25 mg	PO Qhs

Qd= per day; Qwk= per week; Bid= twice a day; Q8h= every 8 hours; Tid= three times a day; Qid= four times a day; Qhs= at bed time; Prn= as needed; PO=orally administered; NS=Nasal Administration; IM= Intramuscular injection.

Dental Orofacial Pain Treatment Session: After completing her rating scales the patient was seen by the dentist. The dentist reviewed the patient’s diaries and rating scales and reinforced her compliance. The patient rated her pain as 30% improved. She reported that the Orabase-Capsasian mixture was helping the burning pain considerably, but that she was now noticing intense throbbing pain that seemed to be localized to the areas of extracted teeth #3, 4 and 5. The throbbing was not as global or as persistent as she had initially reported. She said that she now remembered that the current throbbing in the teeth area was the same as that experienced in teeth #3, 4 and 5 prior to their extraction, but now much more intense. She also reported that her nausea, occasional vomiting was associated with increased throbbing teeth pain. Thus, the dentist revised his diagnosis to include “facial migraine (Graff-Radford, 1991; Penarrocha, Bandres, Penarrocha, & Bagan, 2004) and medication overuse headache (MOH)”.

Facial migraine is a great masquerader, frequently being misdiagnosed as tooth pain or sinus headache and may result in unnecessary interventional treatments and inappropriate medications. This of course increases the likelihood of iatrogenic complications. The dentist then discussed these new diagnoses with the patient and provided her with a revised treatment plan. The facial migraine would be treated initially by giving the patient Frova (Frovatriptan®), a triptan to abort the acute toothache (headache) and topiramate (Topamax®), an antiseizure medication which is also a first-line migraine prophylactic. A trial of Frova would be used as a diagnostic trial to determine if the throbbing pain in the sinus area was also due to the facial migraine or to a sinus problem. She also reported that her sleep was slightly better and that she was not napping during the day as we had instructed. First however, the patient would have to have her narcotics and benzodiazepines greatly reduced if not withdrawn since they are offending agents which may render potentially efficacious migraine treatments ineffective (Mathew, Kurman, & Perez, 1990).

In order to address the myofascial pain component of her complaint the patient was given a set of 3 stretching exercises and instructed to stretch 6 times a day for 6 repetitions each and holding the stretch for 6 seconds each (termed, 6X6X6 exercises) (Graff-Radford, Reeves, & Jaeger, 1987). The patient was informed that the exercises were a very important component of the treatment because they would help to decrease the pain in the muscles and also that by doing the exercises in the prescribed manner throughout the day it would give her a positive adaptive coping strategy to control her pain. In addition, she was instructed to use moist heat 2 to 3 times per day applied to the face and neck in addition to the stretching exercises. Illustrated handouts were provided to the patient depicting the stretching exercises. It should be noted that myofascial pain contributes afferent nociception to the brainstem where the migraine generator resides, aggravating the migraine associated toothache and increasing central sensitization (Simons, 1994).

The dentist reduced the active ingredients in the pain cocktail by approximately 20-25% and reduced the Soma to one pill a day.

Psychological Treatment Session: The psychologist reviewed her diaries and rating scales and reinforced compliance. He reassessed the patient's mental status and found her to exhibit much improved mood and cognitive functioning. Based on her improved mood and lack of adverse reactions to the Lamictal the psychologist recommended that the dentist increase her Lamictal on an accelerated dosing schedule. This involved doubling her dose for the next week to 25 mg po bid. The psychologist reinforced her for waking each morning at 8 AM, noting her sleep had improved even though she was taking less Restoril. In fact the patient felt she did not need to be taking the 30 mg doses of Restoril so she was instructed to reduce her dose to 15 mg at bedtime, and taking no Restoril one night per week. The psychologist reviewed the use of relaxation and cue-controlled relaxation for pain control, side-effects and sleep. He instructed the patient to purchase a pedometer and walk four mornings during the week for ¼ mile each time at a comfortable pace. The time and distance were to be recorded on the diary. The psychologist then reviewed the patient's pain and bothersome ratings which revealed significant discrepancies. That is, the patient frequently rated high levels of bothersomeness associated with lower levels of pain and visa-versa. This launched the cognitive pain treatment program

with the patient (Woolfolk & Allen, 2006) which emphasized the role that her emotions and cognitive processes had on her pain experience and ability to discriminate pain from suffering. Thought diaries were not provided during this session in order not to overwhelm the patient. The patient was once again limited to three phone calls during the week. She was sent for a toxicity screen.

Session Summary: The patient's improved mood and trigeminal neuropathy pain likely reflected the initiation of Lamictal and stabilization of her other medications using the time-contingent delivery of her pain cocktail. Moreover, with the possibility of having other drugs detected in the toxicity screens the patient did not appear to be consuming non-prescribed medications or illicit substances. The patient only called three times during the week and the calls were informative and reasonable, unlike her previous weeks. She acted appropriate during her office visits and her ratings of overall pain had reduced by over 30%, although her throbbing tooth pain was now emerging as a clear and distinct complaint. The dentist and psychologist decided to proceed with her physical medicine program which included a walking program as well as a stretching program prescribed by the dentist to address the myofascial pain component of her pain. Again this was a collaborative decision taking into account her ability to comply with increased program demands. It was decided to continue to have the father dispense all medications and to continue the toxicity screens to ensure compliance. The psychologist, up to this point had not initiated a structured behavioral pain medicine treatment. Instead the psychologist acted to contain the patient, "navigate" her through the medication titration process, and target side-effects with behavioral treatments. Adhering to a strict cognitive-behavioral protocol was not seen as important at this point in treatment. With expertise in psychopharmacology the psychologist was able to monitor the effects of the Lamictal on the patient's mood and make dosing recommendations to the dentist while the dentist was able to focus on its effects on her trigeminal neuropathic pain. The critical aspect of this session was the revealing of a previously undiagnosed facial migraine. Prior to her mood being addressed and medications brought under control her pain was described in very global terms with little discrimination of its multifaceted nature, with exception to the trigeminal intermittent shooting pain. However, at this point the patient was better able to describe the throbbing pain as originating in and being localized to the extraction sites of teeth 3, 4 and 5. Moreover, she was now able to associate the nausea and occasional vomiting with increases in her throbbing pain, all indicators of facial migraine.

Session #5

Team Conference: The patient only called once during the week and reported that she was doing better and tolerating her medications. The team agreed to continue on the medication titration schedule.

Current Medications:

<u>Medication</u>	<u>Dose</u>	<u>Schedule</u>
Pain Cocktail	10 ml	PO Q8h
Methadone	80 mg	PO Qwk
Valium	110 mg	PO Qwk

Reeves, J. L., Merrill, R. L. The complex orofacial pain patient: A case for collaboration. In Roger Kessler, Dale Stafford (Eds) Collaborative Medicine Case Studies. Springer Publications. In Press.

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Soma	350 mg	1 PO QD Prn
Restoril	15 mg	PO Qhs 6 nights/week
Orabase-Capsaicin	Apply	Q6
Lamictal	25 mg	PO Bid

Qd= per day; Qwk= per week; Bid= twice a day; Q8h= every 8 hours; Tid= three times a day; Qid= four times a day; Qhs= at bed time; Prn= as needed; PO=orally administered; NS=Nasal Administration; IM= Intramuscular injection.

Orofacial Pain Treatment Session:

The dentist reviewed her daily pain ratings, checked her ability to do the stretching exercises, provided her with corrective feedback and reviewed the results of the toxicity screen which once again was positive only for the substances prescribed. The dentist also adjusted her splint which she felt was a little tight. The patient reported continued improvement of her trigeminal shooting neuropathy. She however said that she was experiencing more nausea and vomiting and that she was also having periods of photo and phonophobia and increased throbbing pain at the extraction sites. She also noticed more of a deep aching sensation in the right side of her face and periauricular region. She reported a reduction in the burning facial pain, likely reflecting the significant reduction in narcotic intake. The patient reported an additional overall pain reduction of about 20% and that her mood continued to improve. She also reported improved memory and sleep. Very importantly she said she had much more energy. She reported that the stretches seemed to be helping her throbbing and burning pain and possibly her throbbing pain. The dentist then prescribed an additional set of 3 new neck and shoulder girdle stretches to add to the three previously given to her. After palpating the muscles the dentist found trigger points in the Sternocleidomastoid and Temporalis muscles that clearly reproduced some of the pain at the extraction sites, and all of the aching pain in the right facial region. The dentist wanted to proceed with trigger point injections in order to determine whether this would reduce the pain, confirming a diagnosis of myofascial pain. He also wanted to give the patient a diagnostic injection of DHE-45 in order to confirm the diagnosis of facial Migraine. The patient immediately became anxious about the injections and wanted to postpone them. The dentist relayed her injection concerns to the psychologist to see if he could spend time reducing her distress about proceeding with them during the next session. The dentist then used Fluori-Methane® Spray and Stretch over the putative trigger points and produced a reduction of her facial aching pain by over 50%. The patient was instructed in the use of Spray and Stretch spray over the masticatory and posterior cervical muscle and the dentist wrote an additional prescription for Fluori-Methane. Handouts describing the exercises were also provided to the patient. The dentist prescribed Frova 2.5 mg in an attempt to relieve her throbbing facial pain and the "sinus" pain. She was instructed to use only 1 tablet per day. He also prescribed Topamax® 25 mg PO QD as a Migraine (tooth site throbbing pain) prophylactic. He reduced the methadone and Valium pain cocktail by approximately 20-25% in the blinded pain. Soma was reduced to 1 PO QD.

Psychological Treatment Session:

After reviewing the patient's diaries, the psychologist again delayed cognitive pain treatments and instead focused on the pain reductions she achieved during her session with the dentist from the Spray and Stretch and DHE-45 as well as dealing with her fear of injections. The psychologist, along with a nurse performed graded exposure with the immediate goal being not the reduction of fear but the tolerance of fear. Research suggests that fear toleration may be more important than fear reduction (Forsyth et al 2006; Gross & John, 2003) in graded exposure paradigms. The explanation of graded exposure and fear tolerance was discussed with the patient who consented to the procedure. The graded exposure involved gradual exposure to a syringe and culminated in a saline injection into the bicep. The patient performed the task well and was able to tolerate the injection. The patient reported sleeping better over the past week and that her mood was greatly improved and that she had periods where she felt very hopeful and could "see the light at the end of the tunnel." The psychologist reinforced the importance of complying with the stretching routine and she was also instructed to continue walking each morning increasing her distance by 20% per week and record this in her diaries. The importance of *working to quota and not to tolerance* was emphasized (Fordyce, 1976).

Based on her continued improvement with respect to her neuropathic pain and mood the psychologist suggested increasing the Lamictal to 25 mg Po Q AM and 50 mg PO Qhs. In addition her sleep continued to improve and we recommend that she maintain the Restoril at 15 mg but limiting it to only 5 nights a week. He also recommended that her father continue to dispense the medications.

Session Summary:

The psychologist and dentist met prior to ending the session and discussed her progress and medications. It was decided that she would meet with the psychologist prior to the dentist during the next session to do another graded exposure exercise surrounding her fear of injections. Thus, the shift of the psychologist's next session was to deal with her fear using graded exposure and thought stopping. The dentist was making progress and was able to produce significant reduction of her myofascial pain with Spray and Stretch. With the patient's mood and medications much more stable the patient was now able to better discriminate the subtleties of her different pain complaints and distinguish pain from suffering. This was not possible prior to this point in her treatment. Her inability to accurately discern her pain complaints was certainly at the core of her prior misdiagnosis and treatment failures.

Session #6

Team Conference: The patient called at her scheduled time and reported continued progress and increased activities. She reported being compliant to the physical medicine and exercise program as well as to the behavioral interventions. She reported no adverse drug events. She also reported a much improved and stable mood. Her father confirmed her progress. He continued to be responsible for scheduling the patient's medications. He reported that she had gone out with friends on two occasions during the week.

Current Medications:

Medication	Dose	Schedule
Pain Cocktail	10 ml	PO Q8h
Methadone	64 mg	PO Qwk
Valium	80 mg	PO Qwk
Soma	350 mg	1 PO QD prn
Restoril	15 mg	PO Qhs 5 nights/week
Orabase-Capsasian	Apply	Q6
Lamictal	25 mg	PO QAM
Lamictal	50 mg	PO QPM
Topamax	25 mg	PO QD
Frova	2.5 mg	PO QD

Qd= per day; Qwk= per week; Bid= twice a day; Q8h= every 8 hours; Tid= three times a day; Qid= four times a day; Qhs= at bed time; Prn= as needed; PO=orally administered; NS=Nasal Administration; IM= Intramuscular injection.

Psychological Treatment Session: The psychologist met with the patient first. He reviewed the patient's diaries and reviewed her walking program. Rather than walking alone the patient decided to go to a local gym with a friend and found this much more gratifying. She enrolled in an introductory group treadmill walking program at the gym and went almost daily with her friend. The psychologist reinforced her initiative. The diaries indicated continued overall pain reduction from the previous week. The shooting pain was dramatically reduced in intensity and frequency. She said that she was tolerating the medications well and that she no longer felt sedated all of the time but the Topamax was causing mild cognitive dysfunction. This was discussed briefly and normalized as a common side-effect to Topamax. She reported that her sleep and mood were greatly improved from last week. She said that irritability was greatly diminished, her depression improved and that she went out with friends three evenings. Her father confirmed her reports noting that her transformation was "remarkable". She felt the cue relaxation was benefiting for her sleep, pain and distress.

Along with the nurse another session of graded exposure was performed culminating in a saline injection in the bicep. The patient, though anxious, performed the graded exposure well and felt she could go through with a series of trigger point injections. The role of tolerating uncomfortable emotional experience and pain was discussed (Linehan (1993)). The patient was instructed to increase her relaxation exercises to at least 5 minutes three times a day and to practice cue-controlled relaxation throughout the day for very short period of times for one or two breaths when she felt tension or pain starting to increase or become bothersome. The psychologist met with the dentist prior to the patient's appointment with him and suggested increasing her Lamictal to 50 mg po Bid. He also recommended that the dentist ease into the trigger point injections and consider only injecting one or two trigger point sites and then assessing the patient's response over the course of the week. Frequently patients will experience immediate pain reductions with trigger point injections and later this is followed by increased pain and soreness.

Orofacial Pain Treatment Session:

After discussing the patient with the psychologist the dentist reviewed the patient's diaries and exercises with her. After demonstrating her proficiency with all exercises and the use of Spray and Stretch® the dentist proceeded with the trigger point injections into the temporalis and masseter muscle. Based on the psychologist's recommendation rather than injecting several trigger points, as would be the normal course of action, the dentist instead chose to inject only the one most active trigger point in the masseter and temporalis muscles in order to reduce her distress and to minimize post injection pain that might result in the patient becoming more fearful. The dentist instructed the patient to use the cued-relaxation and cognitive strategies that the psychologist had instructed her in. After fully informing the patient he applied moist heat to the injection sites and then injected the masseter and temporalis muscle trigger points respectively using a 5% lidocaine solution (Simon and Travell, 1986). The patient showed an immediate and dramatic 60% reduction in the aching myofascial component of her facial pain following the trigger point injections. The patient was instructed to apply ice to the injection sites and during the week to continue the stretching routine six times a day and use Spray and Stretch® twice a day. The dentist again decreased the patient's pain cocktail by 20% and discontinued the Soma. She was instructed to increase Lamictal to 50 mg po BID and increase her Topamax to 25 mg po BID. The dentist also reviewed her use of Frova, her side-effects to Topamax and answered any questions she had about the medications or her treatment. He noted that the patient's sleep was greatly improved using the behavioral strategies and the dentist reduced the Restoril to 15 mg, 4 nights a week.

Session Summary:

The patient's methadone, Valium and Soma had been decreased significantly without signs of withdrawal. The patient's sleep continued to improve using behavioral approaches as her Restoril had simultaneously been reduced significantly. Her mood and cognitive status was also improving and her activity levels significantly increased reflecting her mood stabilization, improved sleep and of course her reduction in methadone, Valium, Soma and Restoril. Moreover she reported good "compliance" to the stretching program and that the stretching was resulting in significant reductions of her myofascial pain. This reinforced her sense of self-control over important aspects of her pain and motivated her to comply. She also reported that she felt she was able to abort an escalation in her toothsite throbbing pain (Migraine) with the stretching independent of her Frova. She reported a significant decrease in the throbbing facial Migraine pain, nausea and vomiting. The sharp-electrical shooting pain down her right maxilla was responding to the Lamictal, and her mood was greatly improved since being placed on the Lamictal and using her coping strategies. Her sleep also improved significantly with sleep hygiene, relaxation and elimination of daytime napping. Since the patient was not showing signs of withdrawal it was decided to continue reducing the active contents of the pain cocktail at the same rate of approximately 20-25% per week. She called once during the week to report her progress. She reported difficulties doing the exercise program on a daily basis because the friend she was going to the gym with was out of town. She was doing the stretching 6 times a day since they reduced her pain and "felt good." The psychologist helped the patient problem solve the compliance issues and she was reinforced for doing as much as she had. At this point in the treatment the focus had switched from containment to reinforcement of active coping.

This session demonstrated the dynamic treatment process. Both the psychologist and dentist altered their normal course of treatment based on their collaborative input to one another. At the request of the dentist the psychologist focused on fear reduction using graded exposure and to this point still had not embarked upon an in-depth structured cognitive-behavioral pain management program, although aspects of cognitive-behavioral treatments were introduced to the patient to target specific issues. The dentist altered his routine trigger point injection protocol reducing the number of injections at the request of the psychologist in order to reduce her injection fear and post injection pain which would likely serve to reinforce her anxiety. Deciding medications and dosages continued to be a collaborative venture.

Treatment Sessions #7 through 12; Follow-up Sessions:

The patient continued improving and by session 10 was almost totally pain free, sleeping well without Restoril, and was actively using her stretching exercises on daily basis both on a prophylactic and abortive basis. By Session 12 she had been stabilized on Lamictal, 50 mg PO Bid, Topamax 150 mg po Qd, and Frova 2.5 mg po prn. She had also been completely withdrawn from Soma. Methadone and Valium were also completely withdrawn using the blinded pain cocktail format. The patient did experience some mild to moderate withdrawal symptoms after the reduction of methadone and Valium on Session 10. She was provided with a clonidine patch (0.1 mg) to reduce the withdrawal symptoms but did not like the lightheadedness (hypotensive) feeling on the patch. After discussing this with the psychologist she decided to "ride-out" the symptoms which were tolerable and lasted in varying degrees for about six days. By Session 10 the patient was also alert, with no signs of adverse drug effects, her cognitive status was normal and she was reading again and preparing herself go back to nursing school to become a nurse anesthetist. Her father was elated to see his daughter doing so well and reported that she was going out with friends and had resumed her social life. While her reductions in medications and pain were impressive, it was her mood that showed paramount gains. With her mood stabilized, she rarely got irritable, angry or acted out inappropriately and when she did, the intensity was greatly diminished. Upon reevaluation, the psychologist dropped the "Rule out Borderline Personality Disorder" from the list of diagnoses. It appeared that it was an undiagnosed Bipolar Disorder that was contributing to her life long unstable mood and interpersonal difficulties. Certainly, the diagnosis of Borderline Personality Disorder and Bipolar Disorder share many overlapping symptom clusters, and in fact, Borderline Personality Disorder is now seen by many as a member of the family of *Bipolar Spectrum Disorders* and not as a different diagnosis (Stone, 2006).

The patient was placed on a one month follow-up at Session 12 and continued on the pain cocktail, although there were no active ingredients in it. Often it is important to keep the patient blinded to the fact that the pain cocktail no longer contains active drugs for several weeks. This allows the physician to assess the patient's pain behavior when they are no longer taking active medications. Also when the dentist/physician discusses the possibility of discontinuing the active ingredients in the cocktail with the patient it is not uncommon for the patients to display significant anxiety and we have even seen pseudo-withdrawal symptoms, even though the

patient has not taken the active ingredients in two weeks. The act of taking narcotics or benzodiazepines to reduce pain and distress is a strongly reinforced behavior and independent of their actual physiological effects. It can be difficult to extinguish pill taking behaviors. Being able to tell the patient in a compassionate way that they have actually been functioning well off the narcotics and benzodiazepines in the cocktail for a period of time can be a transforming experience for the patient. Moreover, the most difficult phase of most narcotic detoxifications is trying to eliminate the last few milligrams/pills when using an open or non-blinded format. The blinded pain cocktail eliminates this challenge so when the physician and psychologist present the idea of coming completely off the active medications, the patient will have a history of having effectively done this, thus reducing their distress. The pain cocktail is a greatly underutilized tool in pain medicine.

The patient was subsequently placed on a 3 month and then 6 month follow-up. At her six month follow-up the patient continued to maintain her therapeutic gains. She had been referred to a psychologist for dialectical behavior therapy and to a psychiatrist who continued to maintain the patient on Lamictal. Both reported that the patient was continuing to make excellent interpersonal progress.

Discussion:

In this chapter we present a session-by-session case tutorial demonstrating the implementation of a collaborative biopsychosocial relationship in diagnosing and treating a patient presenting with complex chronic orofacial pain. While we have provided some key details regarding the collaborative interactions and decision making process, we merely scratched the surface omitting many subtleties inherent in working closely with a colleague sharing the same model of disease. As shown in this case presentation, failure to consider psychosocial factors in diagnosing and treating complex orofacial pain is likely to result in treatment failure and iatrogenic complications.

To summarize, when the patient initially presented to her dentist she was, in all likelihood, experiencing facial migraine presenting as pain localized in tooth #4. Since this presentation is uncommon, the migraine was misdiagnosed as tooth pathology despite a lack of collaborating radiological and dental evidence. The tooth underwent a root canal by an endodontist and when this failed, it was followed by root canals to adjacent teeth #3 and 4. Persistent tooth pain and associated nausea and vomiting ultimately lead to extraction. The throbbing pain continued at the extraction site locations even in the absence of the three teeth. Shortly thereafter, the patient began also experiencing dull aching pain at the extraction sites when touched by the tongue or food. The dentist began prescribing narcotics for pain control and this increased the throbbing and associated nausea and vomiting, since medication overuse headaches or analgesic rebound headaches are a well documented result of analgesic use (Mathew et al., 1990; Mathew, Reuveni, & Perez, 1987; Von Korff, Galer, & Stang, 1995). The narcotics were also causing the spreading burning facial pain, termed secondary hyperalgesia (Vanderah et al., 2001; Von Korff et al., 1995) further complicating the multiple layered diagnosis. In addition, trigger points in the head and neck musculature were referring pain into the tooth-site and face,

contributing to her TMJ pain (Graff-Radford et al., 1987; Simons et al., 1999). The dentist also missed her capsulitis because of her overwhelming array of symptoms and her dramatic and demanding behavioral style. The dentist prescribed Valium to decrease her distress and Restoril for sleep disturbance—both contributing to her mood disturbance and further disrupting her sleep architecture. Thus, a cycle of poor sleep and poor mood was likely an on-going process. The dentist then referred her for a neurological evaluation following the failed extractions and escalating demands for drugs, coupled with her deteriorating mood. Diagnosing her with trigeminal neuralgia and agitated depression, the neurologist attempted several anti-seizure and antidepressant medication trials and, with the exception of escalating doses and strength of narcotics, the patient experienced intolerable side-effects to each of them. He also prescribed Soma as a muscle relaxant which further disrupted her mood. Frustrated, the neurologist sought a pain medicine consultation with an interventional anesthesiologist. After performing an occipital nerve block under sedation on the patient the patient experienced a severe flare-up. The anesthesiologist then wanted to perform a variety of other interventional and ablative procedures. The patient wisely refused and the anesthesiologist then began escalating her narcotic doses to the point where he accused her of being a “drug addict” and referred her back to the neurologist with the recommendation for a drug rehabilitation program. At this point the neurologist referred her to the UCLA Orofacial Pain Clinic.

Of critical importance in this patient’s failure to respond to prior treatments was her increasing mood disturbance and concomitant somatization. Her mood disturbance was grossly affecting her ability to provide accurate symptom information. Her mood acted to amplify her symptoms. It resulted in a poor ability to discriminate pain from suffering and accurately discriminate pain levels, as evidenced by her constant pain ratings of 10/10 on the Visual Analog Scale (VAS) with 10 indicating “The most intense pain ever imaginable.” When attempting to address her mood using psychotropic medications, the patient became hypomanic and anxious. This reaction is pathognomonic for bi-polar disorder which had gone undiagnosed and instead was viewed as agitated depression. This is not surprising since there is ample evidence showing the ineffectiveness of physicians and dentists in diagnosing and treating common mental disorders. In fact, one study showed that primary care physicians met the minimal standard for treating depression only 53% of the time and less than 10% for substance abuse (McGlynn et al., 2003). In another study, dentists were shown to have great difficulty identifying depression in their pain patients (Oakley et al. 1993). Physicians working outside of the context of a collaborative relationship with a psychologist will more often than not fail to adequately identify and address psychological factors that can profoundly impact the diagnosis and treatment of their pain patients. Clearly her mood disturbance was the critical factor confusing her diagnostic presentation. It was not until the health psychologist evaluated the patient that the psychosocial factors impacting her diagnosis and treatment were identified and addressed. Once the patient’s mood began to stabilize and her acting out was contained, a clearer picture of her multiple problems emerged.

In the present collaborative treatment plan, structure was the main factor leading to the successful treatment outcome. The patient was seen weekly by both the dentist and psychologist. The dentist and psychologist emphasized self-management on aspects of the treatment where the patient was capable of compliance. The dentist provided the patient with a

home stretching and exercise program, not just to address the pain, but to engender a sense of self-efficacy. However, her father was charged with delivering all medications due to the patient's labile emotional status and tendency to rapidly escalate medication dosages in times of distress. The offending medications had to be withdrawn and the orofacial pain specialist and the psychologist decided that the most effective means of achieving this was by utilizing a blinded methadone pain cocktail. The prescriptions were written for only one week at a time. This is not only an issue of safe prescriptive practices but tends to ensure compliance with regard to maintaining her appointment schedule. It was expected that once the narcotic, Valium and Soma were withdrawn, the migraine component of the pain would become less refractory to treatment and would respond to both prophylactic medications and an abortive triptan and, in addition, help to stabilize her mood. The extraction site pain and tenderness was blockable with topical and local anesthetics, indicating a peripheral neuropathy. The orofacial pain dentist and psychologist collaboratively decided to use Lamictal to treat the pain and provide an added benefit of stabilizing her mood. Lamictal is a sodium channel blocker and has shown efficacy in treating trigeminal neuropathic pain, as well as functioning as a mood stabilizer.

A unique and critical aspect of the collaborative relationship is the dynamic treatment process. That is, both the dentist and psychologist alter and constantly fine tune their respective treatments based on the input and interventions of the other. The pain medicine and psychological treatments build on each other. For, example, the dentist chose Lamictal instead of other antiseizure medications with greater proven efficacy in controlling trigeminal neuropathy based on the psychologist's input. Importantly the dentist did not prescribe an array of antidepressant medications, specifically a tricyclic antidepressant (TCA), that would normally be included in the treatment plan because of the psychologists input and concerns that they might switch the patient to mania. In the present case the psychologist never delivered a systematic course of cognitive-behavioral pain management. Instead, the psychologist acted more as a navigator, guiding the patient through the dentist's pain medicine treatments, tagging on aspects of cognitive-behavioral treatments as they were needed to facilitate the patient's journey through the pain medicine treatment program by targeting side-effects, difficulties with the narcotic and benzodiazepine tapering, and disruptive behaviors and sleep disturbance.

The collaborative relationship is most optimal when the collaborating parties share the same model of pain, in this case the biopsychosocial model and the collaboration is conducted in an atmosphere of mutual respect. It is here that the psychologist must take the initiative. It is up to the psychologist to educate the dentist and physician what it is they have to offer. This is done by providing the referring dentist and physician with a prompt phone call and dictation following their assessment of the patient. The dictation must be written specifically for the dentist and physician, providing them with practical information that will directly impact their ability to diagnose and treat their patients. This must be free of psychobabble. The dentist and physician do not care if the patient had an abusive childhood, history of substance abuse or a bipolar disorder. What they care about is *specifically* how these issues will impact their diagnosis and treatment and what they need to do to address these issues most effectively in order to optimize their pain medicine interventions. The psychologist must also participate in grand rounds with their referring physicians and actively provide meaningful information in a brief and concise manner. These are critically important and adaptive behaviors for the psychologist in

terms of maintaining a collaborative relationship. Such collaborative interactions provide the patient with a consistent message and also serve to calibrate the dentist/physician and psychologist's respective views of the patient and how they are progressing. The vast majority of physicians and dentists welcome any input that will make them more effective and reduce risk to both the patient and themselves. It is in the area of risk management that the psychologist has a considerable amount to offer the orofacial pain dentist and pain medicine physician. Identifying how the patient's psychosocial status can foster a potential for adverse events in regard to medications and interventions is the main "selling point" for dentists and physicians to enter in to a collaborative relationship with the psychologist. In many respects it is important to understand that in many ways it is the *physician* the psychologist is "treating" more than the patient.

While it is rare to find a setting using the integrated collaborative relationship, it offers many advantages not only for the patient but also the professionals alike. There are three key benefits inherent in the collaborative relationship for the professional: First, collaboration offers a means to *diffuse patient-related responsibilities* thus reducing work load. Working with a complex pain patient, such as the patient described in this chapter, is demanding, time consuming and difficult work. Professionals working in isolation are simply not equipped to address the many challenges that these patients present with, especially within the context of a busy practice. Second, and perhaps most important is that the collaborative relationship *diffuses the emotional distress* involved in working with these challenging patients. The importance of this cannot be underestimated. Collaboration helps to prevent patient burnout which is at the root of most "dumps," that is, referral of a patient simply to get rid of them because working with them has become frustrating and intolerable to the clinician. Collaboration allows the professionals to offer support to one another and to avoid patient splitting, miscommunications, and to contain the difficult patient, all sources of distress to the clinician. These difficult patients should not and cannot be effectively treated in modality based clinics where the goal is to choose the appropriate interventions or medications targeting proposed pathophysiological mechanisms viewed as "causing" the pain without also accounting for psychosocial contributions. These patients should not and cannot be effectively treated solely through the use of psychological treatments which fail to account for and address pathophysiological mechanisms through the use of modalities and medications. These patients must be treated in a truly comprehensive pain medicine setting where they have access to both appropriately trained dentists, physicians and psychologists working in a collaborative relationship and acting in the best interest of the patient.

Finally, the collaborative relationship serves as an important *form of risk management* with the physician ensuring that critical pathophysiological factors are not missed by the psychologist and the psychologist ensuring that critical psychosocial factors are not missed by the physician.

In summary, increasingly like pain medicine physicians, dentists trained in orofacial pain and psychologists trained in clinical health psychology are entering into collaborative relationships to treat their difficult pain patients. However, like pain medicine physicians, the orofacial pain dentist has little to no training in psychology and psychopharmacology. The crux of the matter is that in the majority of situations, it is up to the psychologist to initiate the collaborative

relationship with the dentist and physician. It is up to the psychologist to learn the language and needs of the physician and dentist, and to provide in-depth education to the physician and dentist about what it is that they have offer them to enhance their patient care. These relationships take work and constant refinement. There is always a period of proving ones worthiness. Openness to mistakes and poor calls is critical and should be viewed as an opportunity to learn from and strengthen the collaborative relationship. Unlike the present case, these patients frequently do not improve, or show only little improvement. A collaborative biopsychosocial relationship optimizes the chances of a successful and safe outcome. Once such a collaborative relationship is established, it is certainly a professionally gratifying experience for both the patient and healthcare professional alike.

Bibliography

- Buckley, F., Sizemore, W., & Carlton, J. (1986). Medication management in patients with chronic non-malignant pain: A review of the use of a drug withdrawal protocol. *Pain, 26*(2), 153-165.
- Fordyce, W. E. (1976). *Behavioral Methods for Chronic Pain and Illness*. St. Louis: The C. V. Mosby Company.
- Graff-Radford, S. B. (1991). Headache problems that can present as toothache. *Dental Clinics of North America, 55*, 155-170.
- Graff-Radford, S. B., Reeves, J. L., & Jaeger, B. (1987). Management of chronic head and neck pain: effectiveness of altering factors perpetuating myofascial pain. *Headache, 27*(4), 186-190.
- Mathew, N. T., Kurman, R., & Perez, F. (1990). Drug induced refractory headache--clinical features and management. *Headache, 30*(10), 634-638.
- Mathew, N. T., Reuveni, U., & Perez, F. (1987). Transformed or evolutive migraine. *Headache, 27*(2), 102-106.
- McGlynn, E. A., Asch, S. M., Adams, J., Keesey, J., Hicks, J., DeCristofaro, A., et al. (2003). The quality of health care delivered to adults in the United States. *N Engl J Med, 348*(26), 2635-2645.
- Melzack, R., & Wall, P. D. (1965). Pain mechanisms: a new theory. *Science, 150*(699), 971-979.
- Merrill, R. (2004). Intraoral neuropathy. *Current Pain and Headache Reports, 8*, 341-346.
- Padilla, M., Clark, G., & Merrill, R. (2000). Topical Medications for orofacial neuropathic pain: A review. *Journal of the American Dental Association, 131*, 184-194.
- Penarrocha, M., Bandres, A., Penarrocha, M., & Bagan, J. (2004). Lower-half facial migraine: A report of 11 cases. *Journal of Oral and maxillofacial Surgery, 62*(12), 1453-1456.
- Ralphs, J., Williams, A., Richardson, P., Pither, C., & Nicholas, M. (1994). Opioid reduction in chronic pain patients" A comparson of patient-controlled reduction and staff controlled cocktail methods. *Pain, 56*(3), 279-288.
- Sammons, M., & Schmidt, N. (2001). *Combined Treatments for Mental Disorders: A Guide to Psychological Interventions*. (1 ed.). Washington, DC: American Psychological Association Press.
- Simons, D. (1994). Neurophysiological basis of pain caused by trigger points. *Journal of the American Pain Society, 3*(1), 17-19.
- Simons, D., Travell, J., & Simons, L. (1999). *Myofascial pain and dysfunction: The trigger point manual*. (2nd ed.). Baltimore: Williams and Wilkins.

Reeves, J. L., Merrill, R. L. The complex orofacial pain patient: A case for collaboration. In Roger Kessler, Dale Stafford (Eds) Collaborative Medicine Case Studies. Springer Publications. In Press.
Page 36 of 37

Stone, M. H. (2006). Relationship of borderline personality disorder and bipolar disorder. *Am J Psychiatry*, 163(7), 1126-1128.

Thorn, B. E. (2004). *Cognitive Therapy for Chronic Pain: A Step-By-Step Guide*. New York: The Guildford Press.

Vanderah, T. W., Suenaga, N. M., Ossipov, M. H., Malan, T. P., Jr., Lai, J., & Porreca, F. (2001). Tonic descending facilitation from the rostral ventromedial medulla mediates opioid-induced abnormal pain and antinociceptive tolerance. *J Neurosci*, 21(1), 279-286.

Von Korff, M., Galer, B. S., & Stang, P. (1995). Chronic use of symptomatic headache medications. *Pain*, 62(2), 179-186.

Woolfolk, R., & Allen, L. (2006). *Treating Somatization Disorder: A Cognitive-Behavioral Approach*. New York: Guildford Press.

Figure 1

Location of teeth numbers 3, 4 and 5.

