Chapter 32

The Man with Recurrent Jaw Pain

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Case History

A 38-year-old single male was referred by his physician with the diagnosis of a refractory temporomandibular disorder (TMD). The referral letter stated that, for the past 19 years, the patient had been experiencing recurring episodes of right jaw pain, varying from mild to severe. When severe, the pain could infrequently radiate into his right eye or right neck. The milder pains usually responded to 600 mg of ibuprofen. The pain was usually present on awakening as a dull ache that gradually intensified. When intense, the patient was unable to work, and was usually absent 4 days each month. The intense pain lasted 1 or 2 days. Occasionally, the pain woke the patient, presenting as a severe right jaw cramp. He believed that he was clenching as all his maxillary right, posterior teeth were extremely sore. He felt that chewing hard foods or gum could be a trigger. Stress was also a trigger. The patient often relied on moist heat applied to the area, with limited benefit. He had three different bite plates made to reduce nocturnal bruxism with no major benefit. Physical therapy seemed to help after 1 or 2 days. Because of the magnitude of the pain, he had temporomandibular joint (TMJ) and brain magnetic resonance imaging scans, both with negative findings. No TMJ noises were present. He also had two otolaryngologic evaluations with negative findings.

His physician included the results of his recent physical examination: 38-year-old Caucasian male, 5 ft 10 in, weighing 175 pounds, with a negative past medical history. He had no surgery and was not taking any medications. His blood pressure was 130/78, heart rate 70 bpm. Electrocardiogram was normal. Reflexes were normal. Basic neurologic examination was negative. Good cervical range of motion. All laboratory studies were negative.

The patient is single and a new partner in a well-known law firm. His jaw pain has been a major concern since college. The pain, when present, now interferes with important business meetings. The patient has requested pain medication so that he can continue to be productive and not have to leave the office. He is a nonsmoker and drinks 2 cups of coffee per day. He drinks alcohol socially and averages 2 glasses of wine per day. There was no known psychological reason for the symptoms.

The patient presented for his examination on a pain-free day. He felt embarrassed as 3 days earlier he had had to miss work. It was his first bad episode in 3 weeks, and he was not aware of any cause. In fact, he had just completed a major business contract. At the time of the examination, he had an acceptable jaw and cervical range of motion, and no tenderness along the cervical spine. No TMJ tenderness to palpation was present, nor head and neck muscle tenderness to palpation, with the exception of mild tenderness in the body of the right masseter muscle. The symptoms were mild and not characteristic of a myofascial trigger point. No deficits or neuralgia trigger areas were present. The patient's ears were negative for pathology. No lymphadenopathy or artery tenderness was present, nor salivary gland or pharyngeal pathology. Cranial nerves III–XII were grossly intact. Intraoral tissues were healthy with a complete healthy dentition.

Prior to the examination, the patient's history was reviewed. For the past 19 years, he has suffered from episodic right jaw pain. His first episode was during college. The patient went to the school infirmary and was referred to a dentist. Diazepam 5 mg was prescribed, and the symptoms left within a day. Since then, 2 or 3 times each month, the patient would wake up with a dull right jaw ache. Usually, the ache intensified so that jaw use was too painful. The pain was described as a level 7 to 8 severe

ache, accompanied by nausea. The pain could last 2 days, but even on the third day, the patient was tired and had to force himself to go to work. When the jaw pain was not present, he was symptom free. Although diazepam helped him fall asleep, he did not function well with this medication.

Questions on the Case

Please read the questions, try to answer them, and reflect on your answers before reading the author's discussion.

- What is the probable diagnosis?
- What is the differential diagnosis for this patient?
- Since muscle pains are the most common source of pains in the face, do his symptoms behave like a musculoskeletal disorder?
- Since dental pains are the most common pain in the mouth, do his symptoms behave as a dental pain? How should this case be managed?

Case Discussion

This patient's symptoms fulfilled the International Headache Society (IHS) criteria for migraine. He had several attacks lasting between 4 and 72 hours. The pain fulfilled 2 of the required 4 criteria by being unilateral and moderate to severe in intensity, and the symptoms were accompanied by nausea. No other medical cause was present.

Following the examination, a possible diagnosis of migraine was reviewed with the patient. The patient stated that activity also worsened his pain, and that he preferred a dark, quiet room when he went home from work. Migraine is believed to have a genetic relationship. In this case, although the patient and his physician were aware of the occurrence of migraine headaches in the family, they were not aware that the symptoms could present in different locations or behavior. In fact, the patient initially argued that he could not have migraine because he never had the pounding temple pain, nor had he ever vomited like his mother and aunt.

This patient suffers from episodic, morning, right jaw pain that may intensify to become disabling. He was referred with a diagnosis of TMD. TMD or TMJ disorders is a broad term used to describe a group of medical conditions with overlapping signs and symptoms. Between 5 and 15% of adults require professional management of their symptoms. The more common presentations include chronic pain and tenderness in the TMJ region, headache, neck ache, and/or ear ache. Symptoms may also include an abnormal jaw opening, with or without sounds. The significant finding was that this patient was symptom free when his jaw pain was not present. The diagnosis would have been further complicated if he also had some mild jaw or cervical muscle soreness from a separate cause. Episodic TMJ noises would also complicate the diagnosis.

The history, as presented by the patient and the referring physician, is indicative of masseter muscle pain. Generally, acute muscle soreness results from spasm, guarding, inflammation, or myofascial pain. The unusual finding, that the symptoms were only present a few days per month, raises a red flag, especially after 19 years. Primary muscle problems would have gradually worsened. The history also implies that nocturnal bruxism (NB) is the cause. NB is the nocturnal clenching, grinding, or gnashing of the teeth during nonfunctional movements of the mandible, and rarely occurs in deeper stages of sleep. NB is often present when a person is transitioning from a deeper to lighter sleep and is believed to occur as part of an arousal mechanism. Unless this patient had joint pain secondary to NB, it is difficult to explain why the symptoms worsened throughout the day. In this scenario, the patient's symptoms were totally gone within 2 or 3 days. Recurrent TMJ pain and inflammation would not have maintained such a consistent behavior.

Trigeminal neuralgia could also be considered, except that in this patient, the pain was continuous for a minimum of 1 day, rather than presenting as the characteristic episodic paroxysms of tic. Neuralgia refers to an intense, often stabbing, pain in the distribution of a nerve. The most common form of neuralgia is trigeminal neuralgia, which may occur in the distribution of any or all three branches of the trigeminal nerve. Sometimes, trigeminal or glossopharyngeal neuralgia may present with few stabbing episodes, but have a background ache experienced in the jaw muscles. Regardless, this patient was symptom free most of the time.

Upper cervical problems may also cause ipsilateral pain at the angle of the mandible or ipsilateral masseter muscle tightness. Cervical muscle myofascial pain, deep posterior cervical muscle inflammation, and pharyngeal pain are all capable of causing facial pain, believed to be via convergence. The behavior of the patient's symptoms was not consistent with the above causes. The dermatomes of C2 and C3 may also encompass the ears, angle of the mandible, and mandibular border, as well as innervate the infrahyoid and some suprahyoid muscles, but the history was not descriptive of an upper cervical cause.

Management Strategies

Triptans are the treatment of choice for episodic migraine, and this patient only experienced a few pain episodes per month. The patient was given a sample of 2

triptan tablets with the instructions to take one tablet when he experienced his next his jaw ache. He was allowed a second tablet, if needed, after 2 hours. The triptan tablet was very effective until he woke up at night with a severe jaw pain. His teeth were also very sore. Since the triptans were prescribed, his jaw pain never became intense, but when he woke up with the severe pain, the intensity took 90 minutes before decreasing, and a second tablet was needed. When the symptoms finally subsided after 3 hours, all tooth pain also subsided. He was shown the use of injectable sumatriptan and given a prescription. The injection was very effective for his infrequent nocturnal severe jaw and tooth pains.

Case Summary

Migraine is not just headache. Rather, it is an episodic, primarily neurologic disorder. Although migraine is generally viewed as a throbbing hemicranial headache, the pain of migraine may be localized to the neck, sinuses, teeth, jaw, or ears. In the above presentation, the location of the patient's pain, rather than the history, appears to have established the diagnosis, resulting in many years of unnecessary pain and lost work. Secondary muscle symptoms are not uncommon in migraine and may appear as neck, face, or head muscle pain. Jaw use would certainly worsen the symptoms, and any TMD findings would be secondary to the headache. As the clinical examination showed, when the headache was not present, no TMD findings were present. Physical therapy could certainly appear beneficial for two major reasons: 1) therapy could decrease secondary muscle tension, and 2) the migraine only lasted 2 days. Many times, a migraine follows stress, possibly because vasodilation follows a period of prolonged vasoconstriction. His recent episode of pain may have been due to this reason. As with most medical diagnoses, the patient's history usually supplies the answer. In this case, the focus was improperly placed on the patient's symptom location rather than the symptom behavior.

Selected Readings

Barbanti P, Fabbrini MP, Vanacore N, Cerbo R. Unilateral cranial autonomic symptoms in migraine. Cephalalgia 2002;22:256–9.

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Bittar G, Graff-Radford SB. A retrospective study of patients with cluster headaches. Oral Surg Oral Med Oral Pathol 1992;73:519–25.

Cady RK, Schreiber CP. Sinus headache or migraine? Considerations in making a differential diagnosis. Neurology 2002;58 Suppl 6:S10–4.

Kaniecki RG. Diagnostic challenges in headache. Migraine as the wolf disguised in sheep's clothing. Neurology 2002:58 Suppl 6:S1–2.

Editorial Comments

Dr. Gross has provided us with one of the most profound aphorisms in the proper diagnosis of migraine: "Location does not determine diagnosis." One of the most common misconceptions in diagnosis of headache is that the location of symptoms leads to diagnosis. In this case, jaw pain led to a misdiagnosis of TMD, when the symptoms were actually referred pain in migraine. Jaw pain can, of course, occur in cluster as well (lower-half syndrome). In a study done at the University of Pittsburgh by Dr. Robert Kaniecki, neck pain occurred in 75% of migraine patients, and 82% of these patients with migraine were previously given a diagnosis of tension-type headache. The neck location led to the diagnosis of tension headache, rather than migraine (Kaniecki R. Migraine and tension-type headache: an assessment of challenges in diagnosis. Neurology 2002;58 Suppl 6:S15–20). Migraine is bilateral at least 40% of the time, and frontal and maxillary bilateral location often leads to a diagnosis of "sinus headache" in the United States, which turns out to be IHS migraine or probable migraine more than 90% of the time. Once again, location leads to misdiagnosis.

Dr. Gross uses common sense to explain why this patient had migraine and not TMD. Not only did the patient's attacks meet IHS criteria for migraine, but his symptoms were also episodic, not continuous, and responded to migraine therapy.

Final diagnosis:

Migraine without aura, misdiagnosed as temporomandibular disorder