The diagnosis and treatment of temporomandibular joint syndrome (TMJ) is becoming a greater and greater problem for insurance companies, physicians and dentists. This problem is difficult because there are so many definitions and so many points of view about the TMJ and the various syndromes that are attributed to it.

When we are talking about the TMJ syndrome, we are really talking about the problems around the joint and invoking the face. The problem is that a lot of symptoms are attributed to this joint.

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The TMJ is a joint that is found just anterior to the ear. The main components are the jaw, the fossa, the condyle and the disc that sits between them. There is a fibrous capsule that lies over the joint. When we look at an x-ray of the joint, we see a cavity behind the bony prominence. That cavity is the fossa of the temporomandibular joint. There is a disc that sits between the fossa and the bony prominence. When the jaw opens, the bony part moves down and forward. It has a hinging and sliding effect.

Less than 5 percent of patients who are diagnosed as having TMJ syndrome have any problems with the TMJ itself. The majority of patients have problems involving the muscles of the jaw joint. These muscles may be the temporalis muscle, the masseter muscle or two muscles on the inside of the jaw called the pterygoid muscles. Those four muscles are the main sources of pain in 95 to 98 percent of the patients with “TMJ syndrome.”

However, there are some patients who do have joint problems.

"Clicking and popping in the temporomandibular joint is one of the main hallmarks of the syndrome. Sixty percent of the normal population, meaning patients without symptoms of TMJ, have clicking or popping in the jaw joint."

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Making the diagnosis is difficult. Diagnosis of TMJ syndrome is made by findings of complaints of pain in the muscles of the jaw, headaches, tenderness in the jaw and a clicking or popping of the jaw joint. Each of the characteristic hallmarks of the TMJ problem, headache, face pain and clicking in the TMJ, can be found in the normal population at various times.

There are many reasons for muscle tenderness. There are medical problems and overuse problems such as clenching or bruxism of the teeth. Clenching is probably one of the major components contributing to the development of the TMJ syndrome. A very substantial portion of patients who have muscle tenderness can have another explanation. Muscle overuse problems also occur in the neck.

Chronic headaches can be derived from the neck, i.e., the chronic muscle tension headache. Headaches are a very common problem, as we know, and the vast majority of the population have headaches.

Clicking and popping in the TMJ is one of the main hallmarks of the syndrome. Sixty percent of the normal population, meaning patients without symptoms of TMJ, have clicking or popping in the jaw joint.

There are several causes of TMJ syndrome. Trauma to the jaw, prolonged overuse, over-stress to the joint that can occur with a dental procedure, oral surgery or the habit of bruxism (grinding of the teeth) cause the TMJ syndrome. In general, we expect a proximate injury as a definite cause. This means a blow to the jaw or an episode of prolonged opening of the jaw such is as extensive orthodontic or dental care. The patient can have a fall and receive a small glancing blow over the jaw joint as opposed to the front of the jaw, which may precipitate the symptoms. The general arthritic syndromes such as rheumatoid arthritis, Reiter’s syndrome and other arthritic syndromes can produce pain in the jaw joint. There is currently an effort being made to include the whiplash injury as an etiology for the TMJ syndrome. There are all kinds of explanations for how this comes about. Emphasis has been placed on the association between auto accident whiplash and TMJ syndrome. This injury is not generally accepted etiologically for the TMJ syndrome.

Over 50 percent of the patients who develop the TMJ syndrome will spontaneously resolve the condition in 6 months to one year, no matter what is done. This creates a question about therapy.

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There are physicians and dentists who are supportive of a variety of approaches. These include orthodontists who recommend orthodontics as a standard part of therapy and oral surgeons who use surgery.

Conservative therapy is the first step in the management of the patient with TMJ. There are many opinions about what conservative means. Conservative to one person means two weeks of physical therapy and if there is no response, surgery is indicated. Conservative therapy to another person means six months of physi-
cal therapy: the use of a splint, anti-inflammatories, muscle relaxants and observation for another six months before considering doing other things.

In 1983, the American Dental Association published some recommendations for therapy. These recommendations included the statement that no irreversible therapeutic process should be undertaken. This would include grinding the teeth to change the bite, orthodontics to change the bite, splints that move the jaw and bite around, oral surgery on the jaw joint, injections into the jaw joint and dental procedures that are going to change the jaw.

Basically, the therapy that was recommended was physical therapy followed by splint therapy with possible muscle relaxants or anti-inflammatory medication and biofeedback, if necessary. The aggressive programs of therapy using orthodontics and surgery were specifically not felt to be of value and were contradicted.

There are exceptions to everything but anytime a patient receives recommendations for

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what would be considered irreversible therapy, that patient should be referred for a second independent opinion.

There has been a recommendation or suggestion. that a splint, which is a standard of TMJ therapy, should not cost over $600. It is very typical for splints to cost $1500. There may be diagnostic workup and follow-up appointments over and above the $1500. There are several experts with long term experience who charge $600 for the evaluation, splint manufacture and follow-up. That is a very reasonable charge. There are proposed bills exceeding $1500, $2000 and $5000. There are some cases of $15,000 to $20,000 for proposed therapy. For the most part, this cannot be justified.

At this point, there are no good controlled studies on therapies other than physical therapy, the use of splints and biofeedback therapy for TMJ syndrome. There is no good controlled study on surgery for TMJ. There are some studies of small groups of patients without any kind of control or subscancial long term follow-up. Some of the studies that have looked at patients who have had oral surgery have found that in one co five years, the majority are back where they were before surgery. There is no good criteria for who should have surgery. It is clear that some patients benefit from surgery but it is hard to identify them. When these patients are analyzed, the physician or dentist who has a particular perspective finds that what they see seems to fit into their analysis and what they have to offer.

The majority of patients with TMJ get better within 6 months whether they are treated for not. It is difficult to know what the motivations are for people who make a lot of the recommendations for treatment. It may be misguidance or it may be that they truly believe what they are doing will help the patient.

Physicians at the U.C.L.A. Pain Clinic, the Massachusetts General Headache and pain Clinic, The University of Washington and the American Dental Association say that there are problems with diagnosis, overtreatment inappropriate treatment and treatment that results in patients doing more poorly in the long run than they might have otherwise.

One of the problems is that dentists have no outside control over their behavior. The dentist is independent and does not come under review for their actions. Physicians treat patients within a hospital or office setting. In the hospital setting, there are reviews of their activity and behavior. A

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significant portion of their behavior comes under the review of other physicians. That does not apply to the dentist. As a result, dentists may drift off into treatments that bear no relationship to what other people are doing. There is no board certified program for TMJ.

There is no recognized training program because many people have different opinions. There are people in New York who say that 95 percent of the patients have arthritis in their jaw joint. They believe that because it exists, TMJ problems and pain problems are due to the arthritis. Therefore, they believe that 95 percent of the patients have arthritis as a cause of their jaw joint problems. However, 90 percent of the population are going to have arthritis problems as they get older. It is part of aging.

The majority of TMJ patients are people who are in their 20’s and 30’s. Overwhelmingly, the majority are young, greater than 60 percent are female (some studies have said greater than 80 percent) and the majority of cases appears to be related to stress. Even in association with trauma, there are other factors. Clicking and popping in the jaw joint occurs in 60+ percent of the normal asymptomatic population at some time.

The medical community should be cautious about any a patient who has been diagnosed as having the TMJ syndrome. There should be a good second opinion.

Examining these patients in a setting where a panel of physicians can set up a team approach is excellent.

In summary, this is a brief perspective on the anatomy, the diagnosis, the management and some of the problems connected with the TMJ syndrome. It is a difficult problem. There is going to be an increasing amount of money spent on this problem and many patients are going to be fit into this diagnosis.

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OMAC Thanks Dr. Overfield for the time & effort involved in writing this article.

OMAC HAS LISTED A FEW OF THE MOST COMMON QUESTIONS REGARDING TMJ:

QUESTIONS AND ANSWERS:

Question: Is the clicking and popping objective or subjective?

Answer: It is an objective finding. The patient can hear it, the physician can hear it and the physician can feel it when putting his fingers over the jaw joint while the patient opens and closes his mouth.

Question: Is TMJ the result of tension more than anything?

Answer: The most common cause of the TMJ syndrome is tension. The habit of bruxism, (grinding the teeth while sleeping) or grinding and clenching the teeth during the day is the main factor. The classic TMJ patient has jaw muscles that bulge out. Trauma to the jaw is also very common. However very few boxers have TMJ syndrome. Less common are primary problems in the jaw joint.

Question: Some patients say that they did not have any grinding of the teeth until after they got the TMJ. They believe that the cause of the grinding at night was when they had to wear the brace.

Answer: since most of the grinding of the teeth occurs during sleep, frequently the patients are not aware that they do it. Patients may start grinding their teeth in response to neck pain, other pain or stress. Most of these patients are involved in stressful situations. They may start grinding their teeth in response to the issues that are going on. This would suggest that the patient does not need to have extensive reworking of their jaw or teeth. They simply need to deal with their stress and some management techniques applied to prevent it from getting worse. The only way to be sure that the patient was not grinding their teeth before wearing the splint is to have a competent dentist look at their teeth to see if there are wear facets. Wear facets do not appear overnight or even in a few weeks. It takes a long time for the teeth to get worn down so that the large flat spots appear. The patient should not have wear facets on their teeth a month after they start grinding.

Question: Is there an interrelationship between the neck muscles and those of the face as some chiropractors say there are?
Costin syndrome. Some patients may get some popping or clicking in the jaw joint. The opening and closing of the jaw joint is a complex monomeent. It involves a hinge action, sliding forward and different compartments (the top compartment, a disc, a lower compartment and the condyle of the jaw). There are muscles that attach at various places in the jaw. These muscles may produce disorganization in the way that a person opens and closes due to the neck being stiff or the jaw and neck muscles being tight. Hence, they may get clicking and popping. So there is a relationship between the neck muscles and jaw muscles. There are also chiropractors who can tie the jaw joint muscles to posture, leg length and foot muscles. They have a complete program of foot supports, arch supports, leg supports, hip therapy, back therapy, shoulder therapy, neck therapy and jaw therapy.

Question: Have you ever heard of loss of hearing from TMJ?

Answer: The TMJ patients should not have objective hearing loss. There is no good explanation for hearing loss. Anatomically, the inner ear is near the TMJ but the bone separate the structures from each other. The nerve for hearing is substantially inside as is the inner ear. A man named Costin in 1937 or 1938 produced the first contemporary paper on the TMJ syndrome. He said that there was tinnitus (ringing in the ears) and pain in the ear. He described the Costin syndrome. Some patients do appear to develop some ringing in the ears. The relationship of tinnitus and the TMJ syndrome is in some question.

Question: After patients have gone through the irreversible therapy and the condition is worse, what happens to all of those people? I went to a TMJ seminar where the doctor said that after you are 40 years old, TMJ usually goes away by itself.

Answer: Some of the patients who have had irreversible therapy continue to have problems that are iatrogenic, i.e. they have had treatment and now they really have problems. The majority of the patient’s problems do go away after they are 40 whether they were treated or not. That is why taking an aggressive program of therapy has to be done very carefully. The patient’s best interest is to get well as quickly as possible with as little chance as possible of being made worse by the therapy. That is the point of getting second opinions before a surgical procedure or orthodontics. Some of the splints the dentists are using force the patient into having orthodontics. Some patients have had reasonable orthodontics completed 18 months before they had an injury. They get put into one of these splints and have to have orthodontics again.

Question: Briefly, what are they trying to accomplish by a surgical procedure?

Answer: In theory, the symptom that is most often being approached is the clicking and popping with pain in the jaw joint. There has been nothing shown that will eliminate clicking and popping on a consistent basis. Pain can be relieved following surgery for at least 6 months because of some of the nerves that supply the area are cut as the incision is made. Very commonly, the patients that are followed up for 6 months to a year have reduced pain. There is a lot of surgery done in the United States. One of the heart bypass procedures that was done a few years before the coronary bypass graft was an internal mammary vein transfer. It was done very popularly for quite a period of time but was of no value. A surgery &at was done for pancreatic cancer is of no value. Possibly a lumpectomy for breast cancer is questionable. The other procedures, the very radical procedures, may be of no value. Surgery is a real problem in treating TMJ. Somebody comes up with an idea, they devise a surgery, they do it the patient gets better for whatever time period they elect to follow, they report that it is a great procedure and people start doing it. Physicians cannot even agree on what x-rays are reasonable to do diagnostically for TMJ. This is a magnetic resonance imaging (MRI) to look at the TMJ. This is $1000 x-ray! Computed axial tomodography (CAT) scans are being done. Probably an x-ray and possibly tomograms could help diagnose TMJ. All of these other procedures add nothing to the management of the patient but do add to the bill. It is not clear that extensive evaluations are indicated. There is a machine called the myomonitor that has become
very popular and has achieved some notoriety in Southern California and the East Coast. This is muscle monitoring and they tell you what you need to do for a particular condition. The only double blind study that has been done on this procedure was done in Sweden. It showed no advantage of this over a simple evaluation by a competent dentist. There is no advantage in using this over using simple physical therapy and/or biofeedback.

Question: I have a dentist who is suffering from this affliction as a result of an automobile accident. He is treating himself, $14,000 worth. What should be done about this?
Answer: That person should have a panel examination. The physicians should receive an outline of the problem and would be able to recommend how this should be approached.