

THE DYSGLYCEMIA TEST AND ITS CONNECTION TO TEMPOROMANDIBULAR JOINT DYSFUNCTION AND TINNITUS

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ABSTRACT

The temporomandibular joint (TMJ) is often a reflection of other problems gone awry in the body. Often the TMJ will present as a problem when there is an immune system impairment,¹ a cranial fault, or a subluxation somewhere in the spine. The TMJ, aside from local tooth and jaw problems, often compensates for these imbalances and is a symptom of some health distress. This author has found that the TMJ often reflects an imbalance of glucose levels in the body, commonly referred to as dysglycemia. Treating a patient for the cause of the dysglycemia, through dietary changes, nutrient therapies, and endocrine support often corrects, or helps to correct, TMJ dysfunction. Additionally, these common TMJ problems often have a strong link to the inexplicable tinnitus that many suffer from.

Key Words: dysglycemia, temporomandibular joint dysfunction, TMJ, tinnitus, dysglycemia, discomalleolar ligament, Pinto's ligament, ACTH, glycogen

INTRODUCTION

TMJ dysfunction is a common complaint for many people. For those who are symptomatic, a cracking, popping, tight or painful jaw may be a frequent discomfort or they may experience neck pain, sinus pressure, ear problems, or headaches stemming from the jaw dysfunction. Asymptomatically, the jaw may deviate to one side while opening or closing, without causing the patient any discomfort, or one or both TMJs may therapy localize (TL) and either strengthen or weaken a tested muscle. The latter would indicate a problem either in the jaw or perhaps somewhere distant from the jaw. This dysfunction, often a result of dysglycemia, is the purpose of this paper.

Dysglycemia is a disorder of blood sugar metabolism. An individual may have a normal blood glucose reading, whether fasting or not, yet present at the time of blood testing or even some other time during the day with symptoms resembling altered sugar handling, (headaches, shaky, unclear thinking, fatigue, etc). There are many factors contributing to balancing blood sugar, and although hormones such as thyroxine and growth hormone are involved to some degree, the majority of work lies with the balance between the pancreas and the adrenal glands.

The pancreas will release the anabolic hormone insulin to lower blood glucose levels by converting the glucose to glycogen in the liver and muscles. It will also release the catabolic hormone glucagon when blood glucose levels are low, pulling the fuel from the stored glycogen.

The catecholamines epinephrine and norepinephrine from the adrenal glands will also be released in response to low blood sugar. Although they do have an impact as catabolic hormones along with glucagon, they do not have as much of an influence as cortisol. Dysglycemic patients tend to have altered cortisol levels, leading to a low conversion ability of glucagon to glucose, so their blood sugar levels either tend to run low or they “feel” as if they are low (hypoglycemic). This can result in the pancreas producing more glucagon to make up for the lack of cortisol. Conversely, high cortisol levels can often increase blood sugar levels too much and stress the pancreas by increasing insulin in response to elevated blood sugar.

The pattern is all too common, yet often physicians are left with either focusing on the adrenal glands or the pancreas to balance this system. Dietary changes such as consuming foods low on the glycemic index and eating frequent meals throughout the day often help. Additionally, supplying any missing nutrients, such as chromium and zinc for pancreas support, B and C vitamins and various minerals for adrenal support, and calcium, magnesium and vitamin B6 for glucose to glycogen metabolism can also be beneficial. However, during the treatment process it is not always apparent when a dysglycemic problem should be addressed nor how it should properly be treated.

Additionally, dysglycemic patients may not actually be aware they are having blood sugar problems. Just because they don’t get headaches, dizzy, or moody after a prolonged period of not eating doesn’t mean they have stable and healthy blood glucose levels. The dysglycemia could be causing their back pain, their TMJ problem, or even the often heard complaint of tinnitus (no pun intended!).

A simple tinnitus study in 1992 found that 19 of the 20 subjects had “one or more clinical, electromyographic, and radiographic indications of a temporomandibular disorder”, yet all were completely asymptomatic.² Other studies have shown that tinnitus can be a primary or secondary complaint of TMJ disorders.³

The evident connection between tinnitus and the TMJ has been investigated rather thoroughly. What is the link? Currently, the best explanation is the discomalleolar ligament, also known as Pinto’s ligament, named after its’ discoverer. This ligament is rarely described in the anatomy textbooks but was shown by Dr. Pinto in 1962 to be a ligamentous structure connecting the malleus in the tympanic cavity to the articular disc and capsule of the temporomandibular joint.⁴ As recently as October 2008, the International Journal of Oral & Maxillofacial Surgery published a study suggesting that “extreme stretching of the condyle in conjunction with the ligaments between the ossicles of the inner ear and the TMJ could be the reason for unexplained otological problems”.⁵

DISCUSSION

The discomalleolar ligament provides the connection from the malleus to the TMJ, most possibly resulting in symptoms such as tinnitus and vertigo, stemming from the TMJ. Yet often these otological problems exist without TMJ symptomology. Additionally, there appears yet another link between the TMJ and dysglycemia, effectively linking all three

problems together – TMJ (dysfunction), tinnitus, and blood sugar handling disorders. This link is the pituitary gland.

Adrenocorticotrophic hormone (ACTH) secreted from the pituitary increases production of cortisol from the adrenal cortex. Therefore, as blood sugar levels drop, ACTH levels increase to raise cortisol levels and in turn, bring the blood sugar back up. This occurs over and over again with dysglycemic patients. Often dysglycemic patients will not show a problem in the pancreas related muscles, (triceps, latissimus dorsi), or the adrenal related muscles, (sartorius, gracilis, posterior tibialis, gastrocnemius, soleus), to the extent that one would think they should. Having to treat these areas for more efficient blood glucose metabolism is not always evident and when it is, the treatment is not always successful. The barrage of ACTH on the pancreas, much like the barrage of cortisol on the pancreas and insulin on the adrenals is the piece to this missing puzzle.

Using homeopathic ACTH will create a neurological response to the pancreas resulting in an over-facilitation of the pancreas related muscles, (latissimus and triceps will not weaken with autogenic inhibition). This is easily seen by testing the long head of the biceps for inhibition (weakening) while testing with the homeopathic ACTH. If ACTH is not available, slight rubbing over the pituitary Chapman's reflex (glabella), will elicit the same response; patient therapy localization (TL) to the glabella will not.

The indication to test for the ACTH-pancreas dysglycemic pattern is when there is a positive TL to the left TMJ. Any weak muscle will strengthen when the patient TLs to the left TMJ regardless of another muscle, cranial, or immune involvement affecting the TMJ. (However, these problems should be dealt with first, if present.) The TL to the left TMJ will also weaken a strong [extensor] indicator muscle with the head in extension. This is a common injury-recall pattern (IRT), in which the doctor treats one of the jaw related muscles with origin-insertion technique, often the internal or external pterygoid. However, the muscle imbalances often reoccur over and over again – because of the dysglycemia. The weakening of the indicator muscle with the TL to the left TMJ will remain weak in any jaw position (open, closed, protrusion, etc.), and then patient TL over the pancreas Chapman's reflex (CR) will negate the weakening. This reflex, cofounded by this author and his colleague, Walter H. Schmitt, DC, appears to be slightly more lateral than the more commonly known pancreas CR. ACTH will weaken any indicator muscle when the patient TLs to this CR. No other pattern appears to exist for this dysglycemia test. Clenching, opening, or moving the jaw in any position which may create a weakness or strengthening of a tested muscle, or may create an illeo-cecal valve response or any other visceral or somatic response, will not provide the same information as the dysglycemic ACTH-pancreas pattern. If the TL is positive to the right TMJ, the patient is switched, (neurological disorganization), and this must be corrected accordingly.

The correction of the problem starts with an investigation as to what caused the problem in the first place. It could be a dietary issue where the patient is eating foods high on the glycemic index such as processed flours, sugars, soda, etc., or is skipping meals or going more than four or five hours without eating. Often there is an offender either creating or

driving the problem. Common offenders in the dysglycemic patient are artificial sweeteners such as aspartame (Nutrasweet) and sucralose (Splenda), as well as caffeine, food allergies, medications, and hormonal stress (cortisol and estrogen are very common). Very often there is a nutrient imbalance/deficiency that is causing or provoking the dysglycemia. Since a dysglycemic patient is constantly pulling glucose from glycogen stores, and both glycogen and glucose play a major role in ATP production, a homeopathic solution of ATP can often be used to screen for these deficiencies. When ATP strengthens the bilateral biceps weakness caused by ACTH or rubbing over the glabella, nutrient support, or glycogen/glucose support, is necessary.

PROCEDURE

1. TL to the left TMJ is positive (strengthens a weak muscle) and/or TL to the left TMJ with head in extension weakens a strong extensor muscle
 - a. There is no change with any jaw movement
 - b. Spleen and lower sternum immune involvement is not present or has already been corrected¹
 - c. * If the above pattern is found on the RIGHT TMJ then the person is switched, or there is some other problem, (such as a local jaw problem), which needs to be addressed
2. ACTH or rubbing the pituitary CR weakens both [long head] biceps
3. Both 1(head in extension weakness) and 2 will be negated by either ATP, glucose, or glycogen, and patient TL to the pancreas CR. The point tends to be slightly more lateral than the normal pancreas CR found on the patient
 - a. The TL to the pancreas [lateral] CR with ACTH will weaken a strong indicator muscle

Now the doctor must investigate – why does the patient have this pattern? There are three most likely scenarios:

- A) Some offender is causing the person to be dysglycemic. Common offenders include cortisol, trans fats, food allergies, caffeine, another hormone besides ACTH, ammonia toxicity, neurotransmitters, medications, or some excitatory chemical/neurotransmitter such as MSG, homocysteine, aspartic acid/Aspartame
- B) They are lacking a nutrient to help them effectively make ATP or glycogen. Investigate the glycolysis pathway, Citric Acid Cycle, and especially check for COQ10 as it is the main component in the electron transport chain. Since the thyroid helps modulate the CAC, it should also be checked. Simply having the patient TL to the thyroid CR will negate the ACTH-biceps pattern weakness.
*The need for COQ10 in high stress patients and/or athletes appears to be very common and overlooked. This author has recognized that supplementing patients

with 500 to 1500mg of COQ10 a day is often necessary for short durations, (2-4 weeks), and provides extraordinary results.

- C) Their diet is the problem. This could be from the following: too many refined carbohydrates, not enough [complex] carbohydrate intake during the day, going too long in-between meals or simply just not eating enough. If this is the case, the patient will strengthen with sugar (sucrose, not fructose), glucose, and/or glycogen. Obviously a patient like this does not need more refined sugar, but due to their dysglycemia and continuous blood sugar swings they will test positive for it. Most likely in this situation you will see cortisol to be the offender. However, glycogen stores could be depleted from a low carbohydrate diet or prolonged heavy exercise.⁶ Sometimes a person just simply needs to eat more carbohydrates.

4. Correction of the problem:

The correction is simple. After investigating the need for the respective nutrients, the doctor will treat the pancreas CR (parasympathetic activity – rubbing) with the offender, (unless the thyroid has been shown to need treatment). ACTH can be used if no specific offender can be found. Counseling the patient on their diet is a must, especially if the pattern reoccurs. Following the correction, the TL to the left TMJ should be negative and ACTH or glabella stimulation should not weaken the biceps.

CONCLUSION

Dysglycemia is a rampant functional disease process that can and often does lead to pathological diseases such as diabetes and cancers. The TMJ-dysglycemia link has been well observed by this author for over two years now, with estimates that this pattern occurs in approximately 75% of new patients and 30-40% of existing patients, (for reasons described above). Whether the TMJ is presenting a problem to the patient or not, its connection to dysglycemia cannot be ignored. Lack of proper glucose stability and/or glycogen depletion will result in a positive TL to the left TMJ. Additionally, the unpleasant need for origin-insertion technique to the pterygoid muscles will be greatly reduced, if not eliminated.

The link between the temporomandibular joint and the auditory system is evident by way of the discomalleolar ligament. The common reflection of this, tinnitus, is a prevalent complaint experienced by patients. Many patients of this author who have had intermittent spells of tinnitus, (once a day or a few times a week, lasting seconds to minutes), have seen remarkable changes from this treatment. The condition becomes significantly improved and in some cases is completely resolved. Patients will understand their tinnitus to be a blessing in disguise – a signal that their glucose levels are wildly imbalanced.

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