

A New Therapeutic Approach to Dystonia

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Dystonia is a neurological disorder characterized by involuntary and uncontrollable muscle tonus abnormalities. It is a huge burden not only to the patients and their families, but also to the field of medicine, in that there has hardly been any substantial change in the concept of and approach to this intractable disorder and therefore no breakthrough to its diagnosis, evaluation and treatment. As an effort to solve the current impasse, this review briefly summarizes the current concept, etiology, diagnosis, treatment and management, and then suggests a rather new therapeutic approach to this disorder, based on the concept of neurological balance and TMJ integrative approach. These new approaches will provide a platform for the clinicians and researchers to have a leap in the concept, diagnosis and therapeutics.

Key Words: Dystonia, Concept, Diagnosis, TMJ neurological balance

INTRODUCTION

Dystonia is a neurological motor disorder characterized by involuntary and uncontrollable muscle contraction, tension, twist, and tremors regardless of one's will.^{1,2)}

Dystonia may generally appear in parts of the body or throughout the whole body, either only on one side, or simultaneously on both sides of the body, or only in specific activities. It may also appear depending on a specific position, such as lying, sitting, standing upright, etc. The most common site of invasion is the neck or shoulder area. It may occur throughout the body, including the face, lips, chin, torso, limbs, and eyes, eyelids, tongue, vocal cords, anus, genital. This intractable disease can be classified in various ways in accordance with the affected parts.²⁾

About 1% of people around the world are reported to have the disease. One in 10,000 Koreans have this con-

dition, meaning that there are approximately 50,000 patients with dystonia in Korea. It is known that there are about 250,000 patients in the United States and about 100,000 patients in the United Kingdom diagnosed with this condition. The disease is a rare neurological motor disorder difficult to control that appears in various forms, ranging from children to adults, regardless of age or gender. What is even more concerning is that the Western medicine has not yet succeeded to properly identify the cause and treatment methods for the disease.

This paper will examine the causes, symptoms, classification, diagnosis, and treatment of dystonia in the Western medicine and discuss how the author's approach to these matters differ, followed by a comparison between the two.

CAUSES OF DYSTONIA

1. Western medicine

Western Medicine explains dystonia by dividing it into two categories: dystonia of primary causes and secondary causes.

Firstly, in the case of primary causes, it is premised that the patient was born with some pathological predisposition of the central nervous system. It is speculated that

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there may have been problems in the brain, especially the parts related to motor functions such as GABA, which produces basal ganglia and Purkinje cells. In other words, the exact cause is not yet known. Primary causes refer to a speculative cause that some genetic factors that have not yet been identified by the Western medicine might be the cause of the disease.³⁾

The case of secondary (acquired) causes refer to all types of dystonia that are caused by some acquired factor. For instance, there are cases caused by a head injury from a car accident, cases that are induced by drugs, or associated with meningitis or encephalitis due to viral infection in the brain. Lesions in the soft tissue around the central nerves, brain nerves, and cervical spine can cause cervical dystonia. Moreover, posterior fossa tumors, colloid cysts in the third ventricle, brainstem lesions, syringomyelia and brain tumors, cerebellar lesion, and anomalies of the fourth and eleventh cranial nerves can cause cervical dystonia, too. It can also be caused by atlanto-axial or C2-3 rotatory dislocation. Only the process in which genetic effects or a history of trauma change the plasticity of the nervous system is known, and a satisfactory treatment for this has not been suggested.⁴⁾ In addition, work-related factors such as a violinist playing the violin with a tilted neck and environmental causes are the common acquired causes of dystonia. However, the acquired causes discovered so far amount to less than 5%, meaning 95% of the causes are not identified yet. Therefore, there is no treatment. However, the author sees 95% of the causes from a completely different perspective. The author's treatment rate and the full recovery rate through his treatment correspond to approximately 85% although the duration of treatment may vary depending on the severity of the disease.

2. Young-Jun Lee

The author sees the TMJ imbalance and the subluxation of the upper cervical spine, especially that of the axis, as the main causes. With more than 30 years of clinical experience, the author speculates that not only dystonia but also most incurable diseases of unknown causes are in close relationship with the subluxation of the upper cervical spine. This is because, the upper cervical spine is connected to the brain stem—the center of the central nerve, through foramen magnum and the spinal cord passing through it. The subluxation of upper cervical ver-

tebrae is believed to be the cause of torsion and tension in the brain stem & spinal cord, and destroying the central nervous system.²⁾

Then, what is the cause of the subluxation of the upper cervical vertebrae? The author predicts that it is due to an imbalance in the jaw joint that nobody had thought of. This is because, the pressure on the nine cranial nerves distributed in the temporomandibular joint (TMJ), especially the fifth cranial nerve, innervates most of the muscle groups connected to the Atlas and the Axis. So, if an imbalance occurs in either side of the TMJ, the muscle group distributed on the affected side becomes contracted or tense due to the pressure of the fifth cranial nerve distributed in that side, and the subluxation of the upper cervical spine also progresses towards that side.

The author has confirmed that most people with various intractable diseases, including dystonia, have subluxation of upper cervical spine, which is again associated with TMJ imbalance, through clinical trials for more than thirty years. Therefore, the author believes that in order to cure dystonia and other intractable diseases, the subluxation of the upper cervical spine must be resolved. The author, then, was convinced that it was impossible to restore upper cervical spine to its normal position without balancing the TMJ. The author was able to restore the abnormal structures to a normal state in cases where the correlation between the 'subluxation of the upper cervical vertebrae' and 'TMJ imbalance' was confirmed.

SYMPTOMS OF DYSTONIA

Symptoms of dystonia include involuntary muscle cramps, contractions, tension, tremors, pulling and twitching, regardless of one's will. The symptoms can be classified into several types depending on the affected body parts.

Its symptoms may appear on the head, neck, hands, feet, or on the face, eyes nose, ears, lips, tongue, chin, and vocal cords, etc.²⁾ In some cases, it appears throughout the body, abdomen, back, waist, anus, or genitalia. The symptoms may also be manifested only in certain positions or movements, such as when lying down, sitting upright, walking, running, or when writing, playing an instrument, speaking, eating or drinking. The symptoms may appear simultaneously in the upper and lower parts of the body, or may appear limited to either left or right side. Symptoms can occur in a certain area or several

parts at the same time. The types of dystonia in accordance with the symptoms are classified in a wide variety.

Patients with dystonia often experience muscle tension and contraction, intermittent or consistent pain accompanied by muscle cramps, twitching, and uncontrollable body twisting. In addition, symptoms vary depending on emotional changes caused by stress and fatigue, and there is a tendency to adopt an unbalanced or abnormal body posture depending on the form of dystonia or the body parts involved.

CLASSIFICATION OF DYSTONIA

In Western medicine, dystonia is classified according to its cause, site of invasion, focal myotonia, and genetic predisposition. This paper follows the classification in four major forms that are widely used around the world.

1. Classification by cause

The causes are classified into primary and secondary.²⁾

1) Primary dystonia

It is also called idiopathic or congenital dystonia, and refers to a classification based on the speculation that the patient may have been born with some pathological predisposition in the central nervous system. Primary causes also refer to cases where there are no other known causes of dystonia.

2) Secondary dystonia

It is also referred to as acquired dystonia. It includes all dystonia cases except the primary dystonia. Secondary factors include neurological diseases (e.g., stroke, infection), drugs such as neuroleptics, or brain damage caused by accidents.⁵⁾ Work-related or environmental factors such as in the case of writers and violists are also included in secondary dystonia, which is also named as musician's or writer's cramp.

2. Classification by invasion

It is largely classified into five categories, depending on which part of dystonia has occurred, whether throughout the body, in one or more areas, or in several related areas.²⁾

1) Generalized dystonia

Generalized dystonia is a neurological motor disorder that affects two or more body segments of the entire body.⁶⁾ It is also known as whole-body dystonia, ear-

ly-onset dystonia, and primary early-onset generalized dystonia.

Muscle contractions occur throughout the body, twisting the posture (especially that of the limbs and torso), and causing convulsions and abnormal gait. It is often accompanied by tremors and severe pain.

2) Focal dystonia

Focal dystonia is characterized by dystonic contractions appearing in certain parts of the body. Details will be introduced below.

3) Multifocal dystonia

Multifocal dystonia occurs in one or more (unrelated) areas of the body.

4) Hemi dystonia

Hemi dystonia is also called as 'One sided body dystonia' because it is confined to one side of the body, especially limbs on the same side.⁵⁾ It is characterized by abnormal and repetitive tension and contractions on one side of the body, being mainly on the arms, legs, and face.

5) Segmental dystonia

Segmental dystonia refers to a form of dystonia in which symptoms appear in several inter-related muscle groups, such as arms and legs.⁵⁾

3. Classification by focal myotonia

This refers to various types of dystonia that appear in different parts of the body. The type of dystonia is named according to the region where symptoms occur, such as whether it is the neck, eyeballs, jaw, vocal cords, or limbs, tongue, eyes, abdomen, back, or anus. This form can be classified into 10 categories as follows.

1) Cervical dystonia

Cervical dystonia is also known as neck dystonia and spasmodic torticollis. It is the most common form of dystonia with abnormal muscle tension, contractions and spasms in the neck and head.⁷⁾ The movements can lead to head and neck twisting (torticollis) or pulling forwards (anterocollis), backwards (retrocollis), or turning sideways (laterocollis). The movements usually involve muscle pain.⁸⁾

2) Eye dystonia

Eye dystonia is also known as blepharospasm. It is characterized by repetitive involuntary trembling or closing of the eyelids due to spastic contraction of the muscles around the eye.⁹⁾ It is called Meige's Syndrome if accompanied by mouth, jaw, and tongue dystonia.

3) Voice dystonia

Voice dystonia causes vocal impairment, vocal tremor, and voice disorders due to contraction and tension of vocal fold, resulting in language disorder in some cases. In this case, it is otherwise referred to as spasmodic dysphonia or laryngeal dystonia.

4) Hand dystonia

Hand dystonia is also referred to as focal hand dystonia, writer's cramp, musician's cramp, and musician's dystonia.⁶⁾ It causes muscle tension in the arm and hand muscles involved in activity of writing, playing musical instruments, or typing. It is also called as occupational dystonia as it is work related.

5) Oromandibular dystonia

Oromandibular dystonia causes uncontrollable twitching and contractions in the jaw, mouth, and tongue muscles, leading to problems in speech or swallowing. It is also called as mouth, tongue and jaw dystonia. Muscle contractions in the jaw may be accompanied by jaw tremors and pain, causing the mouth to open and close on its own. If muscle contractions occur in the tongue, this may cause difficulty swallowing and chewing.

Oromandibular dystonia accompanied by eye dystonia (blepharospasm) is referred to as Meige's syndrome.¹⁰⁾

6) Cranial dystonia

Cranial dystonia causes strong contractions in the face, jaw, and tongue muscles, often leading to difficulty opening and closing of the mouth. It especially affects the eye, jaw, tongue, and oral muscles. Its symptoms are a combination of blepharospasm and oromandibular dystonia. It is another name for Meige's syndrome, introduced above.^{11,12)}

7) Eye dystonia coupled with mouth, tongue and jaw dystonia

This is a typical symptom of Meige's syndrome, and has various other names such as Brueghel's syndrome, cranial dystonia, and oral facial dystonia.

Meige's syndrome refers to a neurological motor disorder with blepharospasm accompanied by oromandibular dystonia (OMD).¹³⁾ This neurological disease is a rare one characterized by muscle contractions that cause painful and repetitive movements in the mouth, tongue and jaw, as well as the eyes.

8) Anismus

Anismus is another name for pelvic floor dysfunction. It is also called paradoxical sphincter contraction. Anismus is an anal function abnormality that causes con-

stipation and fecal incontinence due to abnormalities in the muscle group that controls the rectum or anal muscles.¹⁴⁾ Albeit rare, it may occur in both children and adults irrespective of gender.

9) Paroxysmal dyskinesia

Paroxysmal dyskinesia (PD) is a neurological motor disorder manifesting as episodic attacks of abnormal movements in a part of the body or the entire body at certain times.¹⁵⁾ It is characterized by repetitive pain and involuntary movements in the face or body, either focally or systemically.

10) Abdominal dystonia¹⁶⁾

Also called as truncal dystonia, belly dancer's dyskinesia, and abdominal wall dystonia. As can be deduced from its name, it causes abnormal stretching, bending and torsion in the abdominal muscles and repetitive movements and tremors in the abdominal wall due to muscle contractions. Patients with this condition experience difficulty sitting, standing, and walking because of the convulsions occurring in the abdominal muscles. Therefore, its impact on daily life is significant. Interestingly, symptoms appear only when lying on the side or back, and in some cases, they do not cause any inconvenience in sitting, standing, or other daily activities.

4. Classification by genetic/primary predisposition

According to the type of protein enzyme gene that causes dystonia, it is subdivided into several different categories of neurological movement disorders caused by twenty-four genetic factors ranging from DYT1 to DYT24. These cases are manifested either focally or systemically.

1) Torsion dystonia

Torsion dystonia is characterized by muscle contraction and torsion mainly occurring in childhood. It is also called DYT1 dystonia because it was found that torsion dystonia may be inherited due to mutations in the DYT1 gene in the basal ganglia.¹⁷⁾

2) Dopa-responsive dystonia

Dopa-responsive dystonia¹⁸⁾ —also known as DRD, Segawa's dystonia or Segawa's disease, is regarded as a progressive and hereditary neurological motor disorder caused by the DYT5 gene mutation, hence referred to as DYT5 dystonia.^{6,19)} As it appears throughout the body, it is often included in generalized dystonia.

Dopa-responsive dystonia is generally characterized by

pain and involuntary muscle contraction in the feet and legs. For example, stiff leg folding, feet bending, outward turning of the ankles, toe folding, muscle twitching, tremors etc. are some of its symptoms.

3) Lower limb dystonia

Lower limb dystonia is also known as focal foot dystonia and focal leg dystonia. It is characterized by abnormal and involuntary muscle contractions and muscle pain in the legs, feet, and toes. Therefore, lower limb dystonia causes twisting of the feet, extension of the big toe, tension and pressure in the limbs, and gait disturbance.²⁰⁾

4) Myoclonus dystonia²¹⁾

Myoclonus dystonia (M-D) often causes myopia and muscle tension in the arms, torso, and neck. It is usually classified as generalized dystonia for it is characterized by symptoms appearing in two or more parts of the body at the same time. If psychological symptoms such as obsessive-compulsive disorder, anxiety, and depression are accompanied here, a mutation in the DYT11 gene can be suspected.

DIAGNOSIS OF DYSTONIA

1. Diagnosis in Western medicine

Western medicine performs blood and urine tests along with diagnostic imaging tests like MRI and CT scan, which are used in identifying lesions, tumors, and stroke, in order to identify toxins and signs of the disease. If found to be caused by stroke, brain trauma, or a brain infectious disease, the relevant disease is diagnosed as a secondary causative factor. However, if a secondary cause is not identified, genetic testing and dopamine testing are performed to find out which specific gene is associated with it to determine whether it is of a primary cause.²²⁾ In addition, EMG tests are used to measure the electrical activity in muscles. If no abnormality is detected with these diagnostic tests, the dystonia will be diagnosed to be of unknown cause, that is, primary (congenital) dystonia.

a. Diagnosis

- ① Blood or urine tests
- ② MRI or CT scan
- ③ Electromyography (EMG)
- ④ Genetic testing, Dopamine testing
- ⑤ Diagnostic imaging tests (X-ray, MRI, CT scan)

In fact, in the case of dystonia, where no secondary causative factor has been found, it is difficult to identify even with diagnostic imaging tests as X-rays, MRI, and CT, because less than 5% of dystonia cases are caused by secondary causes. Therefore, accurate diagnosis of primary dystonia, except for cases with secondary causes, is done thanks to clinical features, i.e., symptom groups as in the case of Parkinson's diagnosis.²³⁾

Therefore, the diagnostic point of dystonia refers to the unusual clinical symptoms of numerous types of dystonia already classified in various ways. The clinical symptoms are a mixture of involuntary and uncontrollable muscle cramps, contractions, tension, torsion, tremor, and pain.

2. Young-Jun Lee's diagnosis

How does the author conduct differential diagnosis of dystonia? He diagnoses dystonia by referring to Western medical clinical symptoms, but makes a clear distinction from Parkinson's disease even if there is involuntary muscle tension, contractions, convulsions, and tremors. Dystonia and Parkinson's disease are similar. However, among the three common symptoms of Parkinson's, which are resting tremor (震顫), rigidity (剛直), and bradykinesia (徐動), bradykinesia is not present in dystonia.

1) Young-Jun Lee's diagnostic goals

The author confirmed most of the rare intractable diseases, including dystonia, to mutually have C2 subluxation, through clinical trials over 30 years. He also found that the cause of C2 subluxation was in the jaw joint. Based on this, the author designated two goals for the diagnosis of dystonia. The first is to check for the presence of subluxation in C2, and the second is to check whether the imbalance of TMJ and C2 subluxation are related or not.

a. 2 diagnostic goals

- ① Examining the presence of C2 subluxation
- ② Checking the correlation between TMJ imbalance and C2 subluxation

This is because, the author believes that most of the causes of intractable diseases, including dystonia, actually act as direct/indirect causes, and that most of the axial subluxations are caused by TMJ imbalance. In other words, C2 subluxation develops only when there is an imbalance in the jaw joint, and it leads to subluxation in the rest of the cervical vertebrae, including the atlas. It al-

so causes central nervous system anomalies.

TMJ balancing therapy recognizes the jaw joint as a functional cerebrospinal joint, a link that regulates the function of the brain and spine, analyzes the human body from the perspective of Yin and Yang balance, sets treatment plans, and sees the jaw joint as a key to brain-nervous system and cervical adjustment.²⁴⁾ Accordingly, the author sets main goal of 'diagnosis to confirm whether C2 is subluxated and whether TMJ imbalance is related to its subluxation' as the most important diagnostic point to determine whether dystonia is treatable.²⁾

This is because, if the correlation between these two objectives was identified, most patients with dystonia irrespective of the type of dystonia could be restored to normal by over 85%.

2) Young-Jun Lee's diagnostic method

What are the diagnostic methods for identifying these two objectives?

There are two main methods that the author uses to confirm the possibility of treatment: a primary diagnostic method and a secondary diagnostic method.

The author can immediately determine the possibility of treatment through the primary diagnostic method, and discuss the results with the patient. In most cases, these diagnostic methods can determine the possibility of treatment. However, even if confirmed, recovery is taking place in about 85% of patients. The duration of treatment varies depending on the severity of the disease and the frequency of sessions, along with the patient's posture and psychological state (positive or negative) undergoing treatment. There are three test methods as the primary diagnostic method: cervical palpation test, restricted cervical rotation test, and lateral cervical tension test. These test methods are introduced in the author's book titled 'TMJ Balancing Medicine' in detail.²⁾ The diagnostic methods were designed considering the neuromuscular principles in order to confirm the relationship between the cervical spine (especially the axis) and the jaw joint more objectively. The author applies these test methods for primary diagnosis. However, for a more objective assessment, secondary diagnostic tests are carried out complementarily.

a. Primary diagnosis

- ① Cervical palpation test
- ② Restricted cervical rotation test
- ③ Lateral cervical tension test

Imaging examination methods such as X-rays, CTs, and MRI are used as the secondary diagnosis method. These test methods are used as a means to reconfirm and prove the diagnostic results obtained by the primary tests and as diagnostic methods for objective structural comparison pre- and post-treatment. The results of first and second tests mostly match.

b. Secondary diagnosis

- ① X-Ray
- ② CT scan
- ③ MRI

TREATMENT OF DYSTONIA

How is treatment for dystonia being performed in Western medicine? What are the results? How is the author's treatment from a new approach being formed and what are the results?

1. Treatment in Western medicine

Treatment in Western medicine is mainly based on approaches using muscle relaxants, Botox, analgesics, and tranquilizers in the early stages. In general, a combination of drug therapy and surgery is recommended to manage muscle contraction and tension.²⁵⁾ Drug therapy uses a method of improving abnormal posture by reducing or removing muscle contraction by injecting botulinum toxins (Botox, Dysport, etc.) into certain muscles, and injections are generally repeated every three to four months.²⁶⁾

In addition, dopamine levels, neurotransmitters, are increased through Carbidopa-levodopa (Duopa, Rytary), which affects muscle movement, and Trihexiphenidyl and Benzotropin (Cogentin), which act on neurotransmitters other than dopamine, are also used in therapy. Physiotherapy, stretching, massage, and various other exercise therapies are also utilized to relieve and improve symptoms. Selective neuroblocking surgery is recommended if symptoms are severe, and deep brain stimulation (DBS) is recommended in the last stage. However, the effect is temporary or insignificant and extremely limited. Surgical procedures are rather risky with potential risk factors and side effects lurking. Moreover, except for treatment when secondary cause is identified, most of the drugs or surgical procedures do not have satisfactory effects. This is because, even if it is diagnosed as a primary or secondary cause, in fact, more than 95% of the causes

are not even known and even if they are, there is no clear treatment method.

The author's treatment is completely different. It is non-surgical and activates pathological functions as physiological functions through normalization of spinal and nervous system structures, resulting in full recovery rate of 85% or more. The remaining 15% shows significant improvement, as well. The results of the successful treatment cases are updated weekly on the author's YouTube channel named YJ Care Clinic.

2. Young-Jun Lee's treatment

What is the author's treatment for dystonia and how are these methods being performed? The author performs treatment from three perspectives simultaneously.²⁾

The author considers the structural treatment as the most significant one among these methods, followed by treatment from functional perspective and psychological perspective respectively. Only then can faster treatment be performed and the treatment rate can be increased. As a result, the author would like to say that jaw joint and surrounding tissues are directly linked to the brain, and all meridians of the human body gather here, and that it is an ideal structure to observe the body's responses to the stimuli while adjusting the Yin and Yang properties. The author would like to add that TMJ Balancing Therapy observes the state of the integrated Yin and Yang balance throughout the body and uses various Yin and Yang properties according to the results to apply integrated stimulation to the brain and systemic meridians.

1) Treatment from structural perspective

(1) Young-Jun Lee's treatment methods

① Balance recovery of TMJ

What therapeutic approach should be taken to restore the balance of the jaw joint? It is the therapeutic method that evaluates the TMJ balance or imbalance and restores the TMJ balance. It is the TMJ balancing therapy. C2 re-alignment is possible only with TMJ balancing therapy.

② Re-alignment of the C2 subluxation

What is the most important thing in the treatment from structural perspective? It is 'realignment of the subluxated C2'. Then, what approach should be taken to align the C2? Since most of the causes of C2 subluxation are due to the TMJ imbalance, the balance recovery of the jaw joint must take precedence.

Only when the C2 subluxation is aligned to its normal

position, the subluxated C1 can be restored to its normal position, and C3 and the rest of the vertebrae can be aligned to the normal balance position. Only then the unbalanced central nervous system can be stabilized and dystonia can improve.

(2) How is TMJ balancing therapy being conducted?

As mentioned above, the subluxated axis can be re-aligned to its normal position only through TMJ balancing therapy. If so, in what way is the TMJ balancing therapy taking a therapeutic approach? The answer is treatment approach using the balance measuring sheets and "customized and standard intraoral balancing appliances".²⁾ In order to apply these appliances, doctors must first learn the three test methods introduced in Dr. Young-Jun Lee's Diagnostic Methods.

Doctors must master these tests to determine the presence of C2 subluxation as well as the TMJ imbalance. Furthermore, these tests allow the practitioners to find the exact balance height of the customized intraoral balancing appliance and identify the deviation occurrence and treatment progress. An accurate intraoral appliance can be fabricated by utilizing these tests. For such reasons, the author uses 'TMJ Balancing Therapy' as the main treatment in the treatment from structural perspective, and calls it the 'primary therapy'. For a detailed introduction of this, refer to the book "TMJ Balancing Therapy".

Primary therapy: TMJ balancing therapy

a. Direct diagnostic methods used in primary treatment.

- ① Cervical palpation test
- ② Restricted cervical rotation test
- ③ Lateral cervical tension test

b. Indirect diagnostic methods used in secondary treatment

- ① X-Ray
- ② CT scan
- ③ MRI

(3) Secondary treatment methods from structural perspective

Can most intractable diseases be treated only with primary treatment of structural approach? No. That is why various types of secondary treatments were supplemented.

In addition to the primary treatment, TMJ Balancing Therapy, there are many other types of secondary treatments approached from structural point of view. Several other treatment methods approached from functional and

psychological perspective are included in the category of secondary treatment in a broad sense.

Another secondary treatment from a structural point of view will be introduced now.

It was introduced that the primary treatment from structural point of view could restore the TMJ imbalance and axial subluxation the fastest. However, since the imbalance problem of skull that is made of 22 bones, the imbalance problem of the vertebrae except the axis, and the imbalance problem of the pelvis have progressed slowly over a long period of time and accumulated, the primary treatment from a structural perspective alone has limitations. In order to restore the balance of the remaining structures, various treatments that solve structural problems are required, which will be introduced now.

The author has already confirmed these facts one by one through clinical experience for 30 years. Therefore, in order to compensate for these shortcomings, the author began to re-research and systematize several new treatments and develop appliances needed for that purpose. There are several purposeful devices and treatment methods to be introduced here. For instance, 'CST pillow, C-spine' are utilized for cranio-sacral stabilization, 'spine balancer' is used for normalization of the twisted spine, 'cervical tractioner' is used for balance recovery of the cervical distortion, and 'pelvic balancer' is used for rapid alignment of the pelvic tilt.²⁾

These are briefly introduced in this paper, but a detailed introduction can be found in the author's book "TMJ balancing medicine, TMJ balancing therapy".

- a. Secondary therapy from structural perspective
 - ① Cranio-sacral therapy using CST pillow, C-spine
 - ② Spine balancing therapy using 'spine balancer'
 - ③ Cervical traction therapy using 'cervical tractioner'
 - ④ Pelvic balancing therapy using 'pelvic balancer'

(4) Can structural treatment alone have sufficient therapeutic effects on intractable diseases?

No, not at all.

Primary and secondary treatments of structural approach require exercise and training therapy to have proper effects and also to speed up the effects. For example, unless poor postural habits, bad walking habits, running habits, behaviors, and oral habits that have not been corrected over the years must be fixed first to achieve a rapid recovery of spinal imbalance and TMJ imbalance.

Moreover, stretching and exercises are essential for the rapid recovery of the TMJ and axis.²⁾

To briefly introduce these methods:

- a. Complementary therapy to accelerate cure rates of the primary and secondary therapies from a structural perspective
 - ① Exercise Therapy: Power walking, running, full spinal exercise (a.k.a. Meditation exercise)
 - ② Stretching Therapy: Jaw stretching, neck stretching, body stretching, walking in place, cervical gravity stretching, yoga
 - ③ Training: Training therapy for good spinal posture (sitting, standing, running, walking), training for proper posture

Young-Jun Lee's treatment from a structural perspective were introduced above. Can all intractable diseases be solved only with the primary and secondary treatment methods? Of course not. They are not enough on their own.

The treatment is possible only when functional treatment and psychological treatment that are secondary therapies are also performed. It is difficult to expect perfect and quick treatment results without these treatments being combined. So, what are these treatments and what function and role do each of them have?

2) Secondary treatment from functional perspective

Can refractory diseases that accumulated and progressed over years or decades be resolved only with structural treatment? No, definitely not. We need to take a closer look at the functional anomalies of each organ and resolve their problems, which were resulted from prolonged structural defects of the skull, cervical spine, thoracic spine, lumbar spine, pelvis, and jaw joint. Failure to do so will pose a number of obstacles to treatment.

Therefore, doctors must combine functional treatment with structural treatment because recovery of the internal organs (five viscera and six bowels) that have collapsed over a long period of time due to prolonged structural imbalance is also a part of the refractory disease treatment. Here, the strengths of Korean medicine stand out.

For this reason, the author combines several other secondary treatments for functional treatment. To stabilize the imbalance of five viscera and the brain and nervous system, Korean medical treatments such as acupuncture,

herbal medicine, Chuna therapy, and cupping therapy, which are the best treatment methods of Korean medicine, are performed together.²⁾ Herbal medicine therapy is a traditional Korean medical treatment unique to Korea with a history of 5,000 years. Only in South Korea do the doctors specializing in Oriental medicine and Western medicine coexist.

Secondary treatments of functional approach are as follows. Their detailed explanation can be found in “TMJ balancing medicine, TMJ balancing therapy”.

Secondary therapies from functional point of view

- ① Dr. Young-Jun Lee's balance acupuncture therapy using needles
- ② Cupping therapy
- ③ Traditional herbal remedy using medicinal herbs
- ④ Chuna manipulative therapy

3) Psychological treatment

The author believes that refractory diseases are caused by a combination of structural and psychological problems. Several types of treatments were introduced above in order to solve structural problems. However, the author thinks that it is difficult to achieve rapid and complete recovery without psychological treatment being implemented. So, it is important to understand that psychological treatment plays a significant role in the treatment of refractory diseases.

How is the psychological treatment being performed?

We all know that different types of hormones are secreted from our brain depending on our positive and negative thoughts/attitude. When positivity becomes the dominant thought, endorphin hormones that boost immunity and healing power with analgesic and anticancer effects are released. On the contrary, when negativity is the dominant thought, noradrenaline hormones, which have the opposite function, are released. The author is actively applying this principle to his treatment from a psychological point of view.²⁾

The author calls it ‘positive thinking therapy’. By combining this psychological treatment, the brain and nervous system is stabilized and the secretion of healing hormones such as endorphins is enhanced. To that end, the author educates all patients with refractory diseases on the importance of ‘psychological therapy’. Each patient is encouraged to experience changes in their body in accordance with positive and negative thoughts, and to practice

positive thinking therapy at all times.²⁾

Moreover, in the case of more severe refractory diseases, patients are referred to a professional counselor to stabilize their mind and body. Through this, complementary treatment is also being performed so that they can recognize their problems on their own and have courage and confidence in treatment.

The author would like emphasize that rare intractable diseases like dystonia can be resolved quickly only when various treatments from a structural perspective along with functional and psychological perspectives are combined.

CONCLUSION

After more than 30 years of clinical practice, the author found that most of the causes of diseases that Western medicine considers as intractable disease are actually in the closest place to our brains. That place is the upper cervical spine (axis) and the jaw joint.

When examined in the numerous works of Korean medical literature including Dongui Bogam, many records of Korean medicine having developed and used chopsticks and coins as an oral appliance (also known as *Il Lip Keum* 一粒金) in the treatment since the 12th century can be found. The records of treating the rare intractable diseases through the balance control of TMJ can be found in the Korean medical literature.^{2,27)}

Therefore, the author tried to find a solution to the disease with a new therapeutic approach based on the above classical treatment records of Korean medicine. By continuing to develop his treatment method through thirty-years of research and clinical practice, he has achieved 85% recovery rate in his patients for the past three decades with the treatment based on his hypothesis that upper cervical subluxation and its cause are related to the TMJ imbalance.²⁾ This paper presents the treatment results, and a number of treatment results have already been introduced on the author's YouTube channel named YJ Care Clinic.

More than 200 cases of dystonia, tic disorder and Tourette's syndrome have already been introduced on the author's YouTube channel. Furthermore, treatment cases of TMD patients, including those with severe spinal disc hernia, trigeminal neuralgia, fibromyalgia, epilepsy, Parkinson's, severe headache and migraine of unknown

cause, and vertigo can also be found in YJ Care Clinic YouTube channel. In addition, introductory videos of numerous cases of non-surgical treatments applied and succeeded in patients who were recommended double jaw surgery by a specialist can also be viewed in the channel.²⁾

The author was not interested in the importance of upper cervical spine and temporomandibular joint at first. He did not really bother to pay attention to them. However, at the end of 1987, the author experienced idiopathic paralysis of his right arm, which led him to expand his interest in the importance of TMJ and upper cervical vertebrae. His interest deepened as he witnessed incidents where most patients with refractory diseases showed rapid recovery. From then on, the author thought that the upper cervical subluxation might be the main cause, and it has already been more than thirty years since he started his research on this matter. As a result of his intensive research, the author found that he had sufficient evidence in neurological, muscular, and structural terms.²⁾

In the case of dystonia and other diseases like tic/Tourette's syndrome treated by the author so far, successful results were achieved in 85% of the cases, while the causes of these diseases have not even been identified yet in Western medicine. It is to note that the number of treatment sessions and duration of treatment differed depending on the severity of disease. The author believes that at least 85% of the causes for intractable diseases (e.g., dystonia, tic and Tourette's etc.) consists of the 'subluxation of the upper cervical spine due to the imbalance in the jaw joint'.²⁾

P.S: This manuscript is a part of comprehensive study for dystonia out of my specialized book titled with 'Dystonia'. Therefore, I legally notice that it may be used in whole or in part in the future.

REFERENCES

1. Albanese A, Bhatia K, Bressman SB, DeLong MR, Fahn S, Fung VS, Hallett M, Jankovic J, Jinnah HA, Klein C, Lang AE, Mink AW, Teller J K. Phenomenology and classification of dystonia: a consensus update. *Movement disorders*. 2013;28(7):863–73.
2. Lee YJ. *TMJ Balancing Medicine*. 1st rev. Korea:Fishwood. 2019.
3. Tanabe LM, Kim CE, Alagem N, Dauer WT. Primary dystonia: molecules and mechanisms. *Nature Reviews Neurology*. 2009;5(11):598–609.
4. Dauer WT, Burke RE, Greene P, Fahn S. Current concepts on the clinical features, aetiology and management of idiopathic cervical dystonia. *Brain: a journal of neurology*. 1998;121(4):547–60.
5. De Carvalho Aguiar PM, Ozelius LJ. Classification and genetics of dystonia. *The Lancet Neurology*. 2002;1(5):316–25.
6. Berardelli A, Rothwell JC, Hallett M, Thompson PD, Manfredi M, Marsden CD. The pathophysiology of primary dystonia. *Brain: a journal of neurology*. 1998;121(7):1195–212.
7. Tomic S, Petkovic I, Pucic T, Resan B, Juric S, Rotim T. Cervical dystonia and quality of life. *Acta Neurologica Belgica*. 2016;116(4):589–92.
8. Erbguth FJ. Pain in cervical dystonia. *Botulinum Toxin in Painful Diseases*. Karger Publishers. 2003;(14):54–70.
9. Torres JAKL, Rosales RL. Nonmotor symptoms in dystonia. *International review of neurobiology*. 2017;134:1335–71.
10. Gray AR, arker GR. Idiopathic blepharospasm- oromandibular dystonia syndrome (Meige's syndrome) presenting as chronic temporomandibular joint dislocation. *British Journal of Oral and Maxillofacial Surgery*. 1991;29(2):97–9.
11. Pandey S, Sharma S. Meige's syndrome: History, epidemiology, clinical features, pathogenesis and treatment. *Journal of the neurological sciences*. 2017;372:162–70.
12. Kraft SP, Lang AE. Cranial dystonia, blepharospasm and hemifacial spasm: clinical features and treatment, including the use of botulinum toxin. *CMAJ: Canadian Medical Association Journal*. 1988;139(9):837–44.
13. Jahngir MU, Ameer MA, Patel BC. Meige syndrome. *StatPearls [Internet]*. 2021.
14. Mathers SE, Kempster PA, Swash M, Lees AJ. Constipation and paradoxical puborectalis contraction in anismus and Parkinson's disease: a dystonic phenomenon?. *Journal of Neurology, Neurosurgery & Psychiatry*. 1988;51(12):1503–7.
15. Latorre A, Bhatia KP. Treatment of paroxysmal dyskinesia. *Neurologic clinics*. 2020;38(2):433–47.
16. Gupta A, Kushwaha S. Belly dancer's dyskinesia: a glimpse of a rare phenomenon. *Cureus*. 2017;9(7).
17. Ozelius LJ, Hewett JW, Page CE, Bressman SB, Kramer PL, Shalish C, De Leon D, Brin MF, Raymond D, Corey DP, Fahn S, Risch NJ, Buckler AJ, Gusella JF, Breakefield XO. The early-onset torsion dystonia gene (DYT1) encodes an ATP-binding protein. *Nature genetics*. 1997;17(1):40–8.
18. Phukan J, Albanese A, Gasser T, Warner T. Primary dystonia and dystonia-plus syndromes: clinical characteristics, diagnosis, and pathogenesis. *The Lancet Neurology*. 2011;10(12):1074–85.
19. Wijemanne S, Jankovic J. Dopa-responsive dystonia—clinical and genetic heterogeneity. *Nature reviews neurology*. 2015;11(7):414–24.
20. Pont-Sunyer C, Marti MJ, Tolosa E. Focal limb dystonia. *European journal of neurology*. 2010;17(1):22–7.
21. Kinugawa K, Vidailhet M, Clot F, Apartis E, Grabli D, Roze E. Myoclonus-dystonia: an update. *Movement Disorders*. 2009;24(4):479–89.
22. Albanese A, Giovanni MD, Lalli S. Dystonia: diagnosis and management. *European journal of neurology*. 2019;26(1):5–17.
23. Elia AE, Lalli S, Albanese A. Differential diagnosis of dystonia. *European journal of neurology*. 2010;17:1–8.
24. Yin CS, Koh HG, Lee YJ, Chun SI, LEE YJ. Functional Cerebrospinal Therapy (FCST), a New Physiologic Therapeutics Developed as Meridian Yin-Yang Balance Approach. *The Korean Journal of Meridian & Acupoint*. 2005;22(4):169–74.

25. Lee HJ. The threshold of clinical severity of cervical dystonia for positive 18F-FDG PET/CT study). Master's thesis. Ajou University, 2013.
26. Prudente CN, Zetterbeg L, Bring A, Bradnam L, Kimberly TJ. Systematic Review of Rehabilitation in Focal Dystonias: Classification and Recommendations. *Movement disorders clinical practice*. 2018;5(3): 237-45.
27. Lee YJ, Lee SB, Choi GW, Yin CS. Intraoral Appliances in the Medical Classics of 12th to 19th Centuries. *Journal of TMJ Balancing Medicine*. 2014;4(1):1-4.