Clinical Application: Cerebrovascular Disorders

Cerebrovascular disorders were quite prevalent in Japan, but with the medical progress in recent years, their incidence began to decrease after 1965. Currently, they rank third as the cause of death, after malignant neoplasms and heart diseases. Yet, their prevalence is rising. Annually, one in 400,000 people have the disease in some form, and among these, 130,000 die from it. The number of patients with sequelae is approximately 1.4 to 1.5 million. Previously, the cause for stroke was often cerebral hemorrhage, but today the incidence of cerebral infarction increases[1,2].

This disease, regardless of whether it has been caused by hemorrhage or infarction, is an indication for acupuncture treatment. During the acute phase, modern western medicine is currently used for the treatment and acupuncture is not considered to be an indication. This treatment modality is administered in a small number of special cases.

However, in times when medical care was not as good as it is today, treatment during the early stages, often had to rely on acupuncture. Diagnosis had not been as exact as it is today so that the treatment of stroke was based on clinical symptoms. Patients, only a few days after their attack, presented an indication for acupuncture treatment. Before the concepts of rehabilitation were generally acknowledged, acupuncture had already been applied for such purposes[Note1]. The methodology applied at that time was a traditional Japanese one. Subsequently, therapies based on unique new views, were added. Concepts of modern medicine of the day were also integrated and thus a fairly coherent treatment proposed. Later, due to treatment increasingly centered on western medicine, the application of acupuncture gradually declined.

Completely new developments in the treatment of stroke occurred in the 1990's when Chinese "Xing Nao Kai Qao Fa" (activating the brain and opening the orifices method - Note2 and Zhu's scalp acupuncture - Note3) were introduced in Japan. At the same time, a renaissance of the application of acupuncture and moxibustion for diseases already being treated with western medical methods and rehabilitation, heightened the interest in this therapeutic modality.

A brief introduction to the treatment of these diseases with acupuncture and moxibustion as performed in recent years in Japan is presented below.

1. Acute stage

Western medical treatment receives priority during the acute stage of stroke. During this stage there will be almost no occasions to use acupuncture and moxibustion treatment, but Prof. Akao at the Gifu University Hospital, has treated many stroke patients during the acute stage and also performed acupuncture and moxibustion treatment when western medical treatment alone did not produce sufficient effects. He reported that he has observed comparatively quick improvement in consciousness among these patients[3]. For this purpose, the "Xing Nao Kai Qao Fa" method, in particular for GV26, appeared to be effective for people with impaired consciousness and blood letting performed at the well points traditionally performed in Japan, has also been found to be effective.

Bunshi Shirota (1900-1974), who had a great deal of experience with treating stroke patients during the acute stage, stated: "perform minimal blood letting at GV20 , BL7 , and additionally at the well points of both hands and feet. When patients feel irritated, the healthy side should not be moved, micropuncturing performed for blood letting at GB12 of the healthy side and the use of cupping to drain some blood should be performed. Many patients will calm down after this treatment." He indicated needling at GB20, GB12, LI10, LI4, GB34, ST36, LI3 (single insertion, depth 1-2 cm)[4]. The beneficial effects of blood letting performed at the well points during the acute stage has been pointed out by many acupuncturists, one of whom spent half of his life on research into the effects of blood letting, Kunimasa Kudo (1918-1889). He also recommended this method based on a wealth of clinical experience[5]. Generally this treatment form is not used.

2. Transition from the acute to the chronic stage

During this stage, one usually waits for the condition to stabilize and then initiates rehabilitation therapy, but it is also an indication for acupuncture and moxibustion treatment.

Shirota used the same treatment as applied during the acute stage several days after the attack and added his "Doshi" technique. He also described the application of moxibustion on GV20, CV12, LI10, GB34 and the Sawada style KI3[4].

Yet, the most efficient treatment during this stage appears to be the "Xing Nao Kai Qao Fa" method developed by Prof. Xue-Min Shi. This treatment should be initiated as early as possible and it is desirable to begin with the acupuncture and moxibustion treatment as soon as symptoms have been stabilized through western medical treatment. Prof. Shi frequently visits Japan and has instructed many Japanese acupuncturists in this technique. In several hospitals he has actually treated patients himself. Direct observation of the dramatic improvement has surprised Japanese acupuncturists. After receiving his tutelage, many acupuncturists in Japan perform this treatment.

Since the introduction of this treatment, the method today is applied in facilities with experienced acupuncturists. People observing for the first time how hemiplegic patients with complete paralysis of either an arm or a leg start moving the affected arm or leg immediately after the treatment cannot conceal their astonishment.

However, among Japanese rehabilitative medical societies and academic societies of acupuncture and moxibustion, a consensus has not been reached as to when acupuncture and moxibustion treatment should be started.

3. Chronic stage

Currently, treatment of this disease with acupuncture and moxibustion is restricted in Japan almost entirely to this stage. The introduction of rehabilitation concepts is a comparatively recent event and up to that time no such concepts had been available. Among them, acupuncture and moxibustion as well as shiatsu, were the only treatment forms that fulfilled this role. Rehabilitation is an independent therapeutic system and not related to acupuncture and moxibustion, but a combination of these treatment forms produces even better effects. Today, efforts are made to propose even better therapies achieved by a combination of these different modalities.

Methodologically there is no way that acupuncture and moxibustion can be applied to the site of the stroke lesion itself, and in practice, this is not possible either. Nevertheless, when symptoms typical for the affected region are observed, the therapy may be directed at those symptoms. In particular the "Xing Nao Kai Qao Fa" explains in detail the treatment of symptoms including impairment of consciousness, hemilateral motor or sensory paralysis, central facial paralysis, dysphasia, articulation disorders, disorders of deglutition, disturbances of vision (visual field defects), and urinary incontinence. Practical application of this method allows for treatment of these symptoms. The basic points used for the "Xing Nao Kai Qao Fa" method are as follows. On these points, lifting-thrusting, twirling, reinforcement or reduction techniques are used for the needling. For other associated symptoms, other necessary points may be added[6].

Main points: PC6, GV26, SP6

Supplementary points: HT1, LU5, BL40, GB20, GB12, BL10

Other points added depending on the presence of associated symptoms:

* central facial paralysis: GB20, EX-HN5, ST7, penetrating needling from ST4 to ST6, LI4 on healthy side
* pes equinovarus: ST41, penetrating needling from GB40 to KI6
* motor aphasia: blood letting at EX-HN12, EX-HN13
* receptive aphasia: penetrating needling from GV23 to GV20, GB20, HT7
* disturbances of vision: GB20
* hearing impairment (hearing loss): GB20, TE21, SI19, GB2

* disorders of articulation or deglutition (pseudobulbar paralysis): GB20 or TE176, GB12
* urinary incontinence: PC6, GV26 or EX-HN3, penetrating needling from GV23 to GV20, KI3, CV2.

Shirota reported increasing the number of therapeutic points used for acupuncture and moxibustion following the 10th day after the attack, also including important points on the paralyzed side. In patients with dysarthria, he added GV15 or GV16. Continued performance of micropuncturing for blood letting is also said to be beneficial. He further reported puncturing areas on the back of the neck or shoulders marked by blood congestion and the application of cupping to drain some of the blood, as well as the suitability of the use of well points GV20, or the "clearing of nutrient" method etc.

The treatment for the chronic stage recommended by Shirota is as follows[4].

Acupuncture: GV20, GB12, LI10, LI4, GB34, ST36, LR3, BL2, BL10, TE15, BL15, BL18, BL25, BL32, GB30 on the affected side
Moxibustion: CV12, CV9, GV12, TE15, BL25, LI11, GB34, GV20
Only on the affected side: LU1, ST27, SI11, SI10, LI15, LI10, LI4, TE4, PC7, GB31, Kampu, ST36, LR4, GB40 (half rice grain size, 3 to 5 cone on each point)

During this stage, moxibustion is also effective. Isaburo Fukaya (1900-1974), who dedicated his entire life to the research and clinical application of moxibustion, has written his treatment records in the form of a diary and published this as a book entitled *Stories About Healing Diseases with Moxibustion*. In this book, he recommended the application of moxibustion on the fingertips for stroke induced hemiplegia. For example, apply moxa for paralysis of the arm using points at the fingertips on the affected side (approximately 3-4 mm on the midline proximal to the edge of the nail). If the patient feels the heat, use only one moxa cone. If he/she does not feel the heat, use several cones. This treatment reportedly resulted in a comparatively quick recovery of motor function. However, at some point in time, the effectiveness of this method decreases and requires moxa treatment of specific points on the entire body. At that time, the use of 5 half grain sized moxa cones each on GB21, LI15, BL10, LI11, LI10, LI8, PC5, GB31, ST36, ST41 is indicated. The description includes records of the progress in stroke patients actually treated in this way including patients from one week to several years after the attack. These records contain descriptions that are noteworthy even today[7].

Many experiences with acupuncture and moxibustion treatment have been gathered and the above described example is definitely not unique.

Yamada stated that the three main purposes of acupuncture and moxibustion treatment during that stage are: (1) recovery of basic functions as a part of the rehabilitative measures like exercise therapy, (2) prevention of various complications, and (3) alleviation of pain[8].

The chronic stage is often associated with pain and patients frequently experience extremely severe pain. Acupuncture is effective for central pain like thalamic pain, but its efficacy for the various forms of peripheral pain on the paralyzed side in patients with hemiplegia, are an even better indication. In particular, pain of the shoulder joint is encountered frequently and many patients stop walking because of the pain that is triggered during walking. For this condition, Prof. Shi states that he needles LI15, Kengairyo and Kennairyo in order to promote the flow in the local channels and punctures painful spots for blood letting in attempts to dissolve blood stasis and alleviate pain. Kitamura needled "ashi" (tender) points to treat pain upon elevation of the arm and subsequently achieved an improved ROM through active and passive exercise. He did not treat just the shoulder simply because it is painful, but also needled points like BL62 or GB26, ST36, SP9 and GB34; and thus reportedly achieved alleviation of the shoulder pain[8].

Spasticity too is a great problem. Prof. Xue-Min Shi has pointed out that slightly stronger stimulation of LI14 for flexion and contractures of hands and

fingers induces instant relaxation[6]. Moreover, in case of spasticity of the biceps muscle, Kitamura also used motor points of that muscle and applied electric current of an intensity that does not induce joint movements and a frequency of 30 Hz for a period of 5 minutes, followed by 2 minutes of rest and then repeated these cycles three times. Thus he reportedly achieved, although only temporarily, some relief of the spasticity. Based on the principle of reciprocal innervation, he stated that stimulation of the antagonist is also beneficial[8]. These therapies are effective immediately after their application, but the effects do not last very long and thus require repeated treatment and exercise therapy should preferably be performed while the therapeutic effect lasts. It is important that the patient remembers the relevant sensations.

Although the number of case reports describing stroke patients is not small, the number of such reports coupled with reports on detailed western medical examination is not high. Acupuncturists like Shirota of about one generation ago, published a large number of case reports, attesting to the abundance of clinical experiences, but many of these records are nevertheless incomplete by modern medical standards. Yet, in recent years, the number of reports providing findings of both medical systems has been increasing. For example, Yukimachi, et al. started to treat a 72-year old woman and a 76-year old man (both of which were diagnosed with lacunar infarction based on MRI findings) with acupuncture and moxibustion from the first week of hospitalization. Patient management was performed based on western medicine and these patients reportedly healed without any late effects[9].

There are not yet any clear statements regarding the long-term prognosis when acupuncture and moxibustion therapy are used for the treatment of patients with this disease. Shirota reported that persistent treatment resulted in patients regaining the power to power to write, and patients who had difficulties to walk, found it easier to walk. Also, treating patients with contractures and fixed joints in the same way as patients with RA or neuralgia, has reportedly led to an amazing degree of alleviation[4].

In the collection of essays by Shirota, *Records of Clinical Acupuncture and Moxibustion,* he emphasizes the importance of persistent and careful treatment, describing it as follows. "After a long time after a stroke, local treatment of the late effects is particularly important. The muscles, nerves and blood vessels that supply the affected area need special attention. In order to improve their function, careful treatment should be given. Treatment of the arms is important when the goal is to regain the ability to use a brush or chopsticks. Yet, treatment of the legs is also required. Even minor improvements in the condition of the legs help to make walking easier. When walking becomes easier, the maintenance of equilibrium improves and thus stabilizes the entire body. Even if 1 or 2 years have passed since the attack, treatment will gradually lead to improvements. Although it may not be possible to expect a full recovery, it should be sufficient to achieve a certain degree of improvement. The patient's joy will thereby be increased."[10]

Note 1:

The concepts of rehabilitation were clarified in Japan in the 1950s. Later, after many deliberations, the Japanese Association of Rehabilitation Medicine (JARM) was founded in 1963. In the same year, the first school for the training of physiotherapists and occupational therapists was opened. Three years later, in 1966, the first graduates left that school and the first state examination was held. This created the first generation of physiotherapists and occupational therapists and led to the foundation of the Japanese Physical Therapy Association and the Japanese Association of Occupational Therapists. Later, rehabilitation was integrated into medical care and played an important role in the various fields of medicine. Since acupuncture and moxibustion on the other hand remained outside the framework of medical care, the treatment of late effects of stroke that used to be an indication for acupuncture and moxibustion, fell into the category of rehabilitation, so treatment by acupuncturists decreased.

Note 2:

The **Xing Nao Kai Qao Fa** ("Xing Nao Kai Qiao" = XNKQ, activating the brain and opening the orifices) method was developed by Professor Xue-Min Shi at the First Teaching Hospital of Tianjin University of TCM. This therapy, which adds new views to the traditional theories and is applied from the acute stage of a stroke to the sequelae developing during the chronic stage, is an epoch-making technique allowing dramatic improvements immediately after the treatment. Professor Shi himself introduced this technique in Japan and there is a Japanese textbook which describes this method. It is being practiced in many medical facilities.

Note 3:

Zhu's scalp acupuncture is a therapy that has been developed by Professor Ming-Qing Zhu at Beijing University of Traditional Chinese Medicine (which has absorbed the former Beijing College of TCM). Various therapeutic areas are used on the scalp and stimulated by needling, applying a unique technique. The technique is applied not only for the treatment of stroke, but also for a wide spectrum of other neurological diseases. Professor Zhu himself has introduced this technique in Japan and there is a Japanese textbook which describes this method. It is being practiced in a number of medical facilities.

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