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"Acupuncture for Low Back Pain and Knee Pain in Middle Age, an Anatomical Point of View"

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1. Introduction

The Japan Conference of Clinical Acupuncture & Moxibustion started out when in 1960 Bunshi Shirota and other motivated persons attempted to put acupuncture and moxibustion on a scientific foundation and gathered for that purpose under the guidance of professor Tachio Ishikawa at Kanazawa University to found its predecessor, the "Japan Acupuncture & Moxibustion Electrical Skin Resistance Study Group", which in 1983 was then given its current name. Based on the concept of "considering all treatment forms if they are based on modern medical comprehension of pathologies" the group strove to improve the qualification of clinical acupuncturists. Up to now it has actively exchanged information pertaining to case reports and clinical studies¹⁾ mainly among members.

Improving the qualification of acupuncturists, meaning enabling practitioners to properly comprehend pathologies, acquire appropriate therapeutic skills and pedagogic techniques requires first of all the acquisition of basic knowledge about modern medical diagnostics, understanding of pathologies and therapeutics to implement the aforementioned skills. The reason for this is the necessity to be able to communicate with physicians and co-medical staff on the same level. In this context a common medical record form for diseases designated as indications for acupuncture and moxibustion like neck-shoulder-arm pain, low back and leg pain, shoulder joint pain, knee joint pain etc. has been proposed. It has already been listed in text books and is currently used in the education of acupuncture therapists^{2,3)}.

Here I would like to briefly introduce the historical development of the Japan Conference of Clinical

Acupuncture & Moxibustion and outline its goals. For this purpose I present one case report of a patient with low back pain and knee pain.

2. Historical development of the Japan Conference of Clinical Acupuncture & Moxibustion

The society was founded in 1960 under the name of "Japan Acupuncture & Moxibustion Electrical Skin Resistance Study Group". It had the purpose of building a scientific foundation for acupuncture and moxibustion based on the viscerosomatic reflex theory and the use of the dermometer proposed by doctors Hidetsurumaru and Tachio Ishikawa.

1983: Based on the concept that improving acupuncture therapist qualification will also increase the value of the medical services by these therapists and establish a position of acupuncture and moxibustion in medical care, the study group was renamed into "The Japan Conference of Clinical Acupuncture & Moxibustion".

The conduction of clinical conferences seems to be the shortest way to improve the clinical capabilities of acupuncture therapists. In other words, the group was termed Japan Conference of Clinical Acupuncture & Moxibustion, because the understanding of pathologies based on bedside interviews and examinations, judging whether a given condition is an indication or contraindication for acupuncture and moxibustion, possible referral to medical specialists, assessing the prognosis and determining the best possible treatment form can be deduced from free discussions among acupuncturists based on case studies.

3. Case study: current situation of a patient with low back pain and knee pain and the acupuncture and moxibustion treatment

The Comprehensive Survey of Living Conditions conducted in 2013 reports the ratio of the five leading symptoms among person reporting to have symptoms classified by sex (several answers possible).

The leading symptom in men is low back pain, in second place followed by shoulder stiffness, in third place by nasal congestion, in fourth place by cough and sputum.

The fifth most frequent symptom was pain of joints of arms or legs. On the other hand, the leading symptom in women was reportedly shoulder stiffness, followed in second place by low back pain, in third place pain of joints of arms or legs⁴. Pain of joints of arms or legs should be understood as referring to the shoulder and knee joint. In other words, low back pain and gonalgia are considered to be a very common symptom among Japanese people.

Among the symptoms treated in acupuncture clinics many patients complain of low back pain and gonalgia and many of the patients over the age of 40 complaining of low back pain and gonalgia should be considered to suffer from osteoarthritis of either the spine or the knee (OA). Being characterized by irreversible elements these conditions are chronic diseases treated with acupuncture and moxibustion in order to slow down disease progression, alleviate pain and improve functional disorder^{5,6}.

4. Case report

Patient: dull low back pain and knee pain

Male, 60-years old, acupuncturist, height 173 cm, weight 68 kg, BMI 22.9

Chief complaint: (1) left low back pain, (2) discomfort and pain of the left knee (ST35), low back pain (left > right)

Interest: jogging

• Medical history

(1) Since the age of 20 the patient experienced chronic dull low back pain and the muscle of the lumbar region often tended to be tense. The left leg was the patient's dominant leg and when he paid attention, he could feel shifting his body weight towards the left side. When tired, a table tennis ball sized muscle induration developed in the left lumbar region (BL52) and caused pain. Pressure was felt as pleasant. Since the age of 40 work related busyness gradually increased, working hours tended to be irregular and he slept only 4-5 hours, so that the chronic lack of sleep had already become the normal condition. Occasionally he experienced abdominal bloating from gastrointestinal gas

accumulation and diarrhea. At times of diarrhea he suffered from marked pain and tenderness in the left BL52 region. An x-ray taken during a visit to an orthopedist showed a mild degree of scoliosis, the formation of bone spurs and the physician also pointed out a mild degree of osteoarthritis of the spine (Figure 1). Therefore the physician diagnosed "fatigue induced low back pain". Later, the patient experienced acute low back pain attacks once or twice per year. Each time the condition improved after acupuncture and moxibustion treatment.

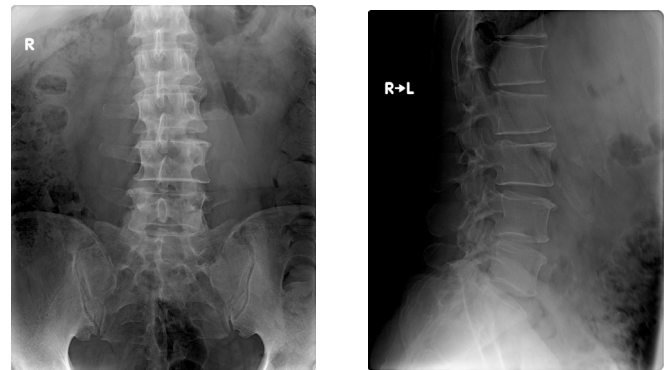


Figure 1: x-ray findings of the lumbar region (spondylopathy)

(2) Since his time in university the patient loved to run and formerly did jog and commuted 2-3 times per week to a gym for his health management, but now he is too busy and cannot find any time for sports, rendering exercises performed once every two weeks largely insufficient. His weight gradually increased from 60 kg to 68 kg.

Since the age of 30 he participated maybe a dozen times in full marathons. The gonalgia developed because he originally planned to run 100 km per month as training starting 4 months ago. However, being busy with his work kept him from actually implementing the training schedule and when he actually started training, discomfort and gonalgia developed after running a distance of approximately 5 km. An x-ray of the knee taken during a visit to an orthopedist was normal (Figure 2). From this time onward overuse induced pain was pointed out. He did not undergo any particular treatment. He decided to observe the course while being

treated with acupuncture and moxibustion. The acupuncture and moxibustion treatment provided some relief. Later he experienced some mild knee pain after excessive running. He also experienced some discomfort of the left knee while walking and jogging, aggravating after a certain distance and developing into pain during exercise. Climbing and descending stairs too resulted in mild pain. Due to injections into the thigh received during infancy there was a mild degree of quadriceps femoris muscle atrophy. Occasionally shoulder stiffness developed.



Figure 2: x-ray findings of the knee joint

General condition: The patient has appetite and excessive eating sometimes causes abdominal bloating or vomiting, sleep duration is short, about 4 hours, bowel movement frequency varies between once every 1 to 3 days.

The annual health check does not show any particular problems, but he had been advised to take precautions against hypertension and pneumonia.

• Past history

Surgery for left paranasal sinusitis, partial resection of bone because of a deviation of the nasal septum (at the age of 17), hospitalization for 17 days (at the age of 48) because of bronchiolitis obliterans organizing pneumonia, laser photocoagulation (at the age of 50) for right retinal tear, atypical pneumonia treated with Cravit, Carbocysteine (at age 58), diagnosis of hypertension (at age 58) and is since then treated with the antihypertensive agent UNISIA (Camshia) one tablet in the morning.

• General findings

Blood pressure 110/70 mmHg, pulse rate 72 bpm, brachial biceps tendon reflex, triceps tendon reflex, brachioradial tendon reflex, patellar tendon reflex, Achilles tendon reflex were all normal, abdominal percussion showed generalized tympanicity, muscle tension (left > right) in the lumbar region, loss of lumbar lordosis (Figure 3). A table tennis ball sized induration and marked tenderness were observed in the vicinity of the left BL52. Tenderness was also observed at CV12, ST25, ST26, BL17, BL18, BL25.

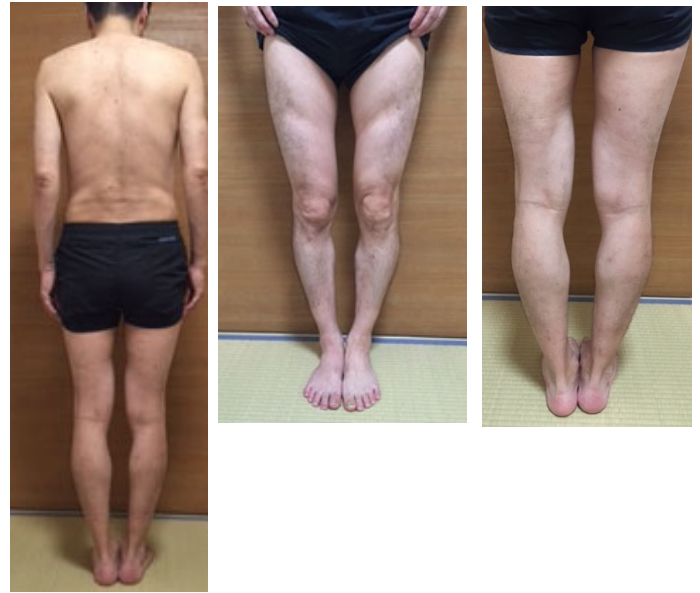


Figure 3: Findings of inspection of lumbar region and knee of a 60-year old man

• Findings of physical examinations

(1) Lumbar mobility (bending forward, backward, sideways, rotation) was normal. The finger-floor distance was 15 cm and although there was no pain, the body was stiff. SLR test (-), K-Bonnet test(-), Kemp's sign (-), walking on tip toe (possible), plantar and dorsal flexion of the first toe was normal on both left and right side, sensation too was normal on both sides, internal and external rotation test of the hip joint (-), Newton's test (-), normal pulse of A. dorsalis pedis, tibialis posterior, femoralis, no percussion tenderness, FNS test (-). Tender points: left BL22 (+), BL25 (+), left BL52 (+3), tension of the erector spinae muscles left > right⁷⁾.

(2) No rubor, warmth or swelling of the knee joint, no varus deformity, but there is a distance of 4 cm between both knees, no valgus deformity (Figure 3), no flexion deformity, atrophy of the left and right thighs. The circumference of the thighs (15 cm above the patella at sites of marked indentations) was 47.4 cm on the right and 47 cm on the left; at a distance of 10 cm above the patella these values were 42 cm on both left and right; circumference at the level of the patellar base was 37.4 cm on the right and 37 cm on the left, patellar ballotment (-), patella grinding test (-), varus / valgus stress test of the knee (-), Steinman test (-), McMurray's test (-), anterior drawer test (-), posterior drawer test (-), Lachman test (-), flexion impairment (-), quadriceps femoris power (-). Tender points: ST31, GB31, ST34, SP10, particularly marked at medial Ex21⁸⁾.

● Identifying the pathology

(1) The x-rays of the lumbar vertebrae showed some minor osteophyte development and based on the presence of scoliosis and rotation of the lumbar vertebrae as well as the medical history and the absence of positive pathologic findings, the condition was considered to be mainly due to age-related spondylopathy. Constant strain on the left lumbar region then led through overuse to hypertonic stress of the erector spinae muscles etc., which then probably resulted in myofascial low back pain.

(2) Knee x-rays were normal. Medical history and pathologic examinations allowed to rule out meniscus damage or lesions of either the anterior crucial ligament or the collateral ligaments. Injections the patient received during infancy into the thigh caused a mild degree of quadriceps femoris atrophy, but muscle testing did not reveal any problems. Exercises like walking and running etc. likely strained the patient's knee. A mild degree of soft tissue inflammation induced by overuse is also conceivable⁹⁾.

● Treatment plan

Being very busy with his work, a chronic lack of sleep, paired with irregular meal times and excessive eating and drinking caused gastric bloating or nausea. The gastrointestinal functioning was not really well and the

patient occasionally developed diarrhea, disrupting the regularity of his daily life. His current condition conceivably developed before this background. The low back pain and gonalgia were conceivably caused by these various forms of stress. The low back pain was also brought about by an accumulation of muscle fatigue, but is basically due to some minor degree of spondylopathy and muscle fatigue. Here I decided to alleviate the individual symptoms with acupuncture and moxibustion treatment and add some general conditioning.

(1) Relief of muscle tension in the low back area and over the back, administering some comfortable needle sensation at the point of maximal tenderness (BL52). I also added treatment to regulate the gastrointestinal function.

(2) Treatment to achieve relief of muscle tension in the thigh and lower leg to alleviate pain, administering some comfortable needle sensation at the point of maximal tenderness (Ex-LE4).

● Treatment

I used 40 mm No. 18 Seirin disposable needles and needled mostly sites of tenderness or indurations¹⁰⁾.

Needling sites were BL10, GB21, SI14, BL43, LI10, ST36, Ex-HN5. Each of these points were needled applying some thrusting and lifting manipulation to obtain a pleasurable needling sensation. Treatment duration was about 20 minutes.



Figure 4: Left BL52 needling and needling sensation 50 mm disposable needles, No. 24, insertion depth 4 cm perpendicular to the body surface, with maximal needling sensation

At GV20 a needle was retained until the end of the treatment to raise the pain threshold and promote sleeping. To regulate gastrointestinal function I made singular insertions at CV12, ST27 and ST36.

(1) On the back thrusting and lifting manipulation at BL17, BL18, BL20, BL22, BL25. Application of a pleasurable needling sensation at BL52¹¹⁾.

(2) Singular insertions on the thigh at ST31, SP10, ST34, Ex-LE4, ST36, GB31; on the posterior side BL37, BL40, KI10 and BL56. Needles were retained at ST31, ST34, Ex-LE4, ST36, GB31 and on the posterior side at BL37, BL40, KI10 and BL56.

Needle retention for 7 minutes at ST31, SP10, ST34, Ex-LE4, ST36, GB31¹²⁾.

Later acupuncture and moxibustion treatment was continued for maintenance at a rate of twice a week. During the treatments the quiet breathing of the sleeping patient could be heard and after the treatments he reportedly felt very refreshed. Even though he complained generally about occasional low back pain and stiff shoulders, acupuncture and moxibustion treatment administered early after the onset of those symptoms usually led to an early improvement. He is still very busy with his work and sleeps only about 5 hours, but since the acupuncture and moxibustion

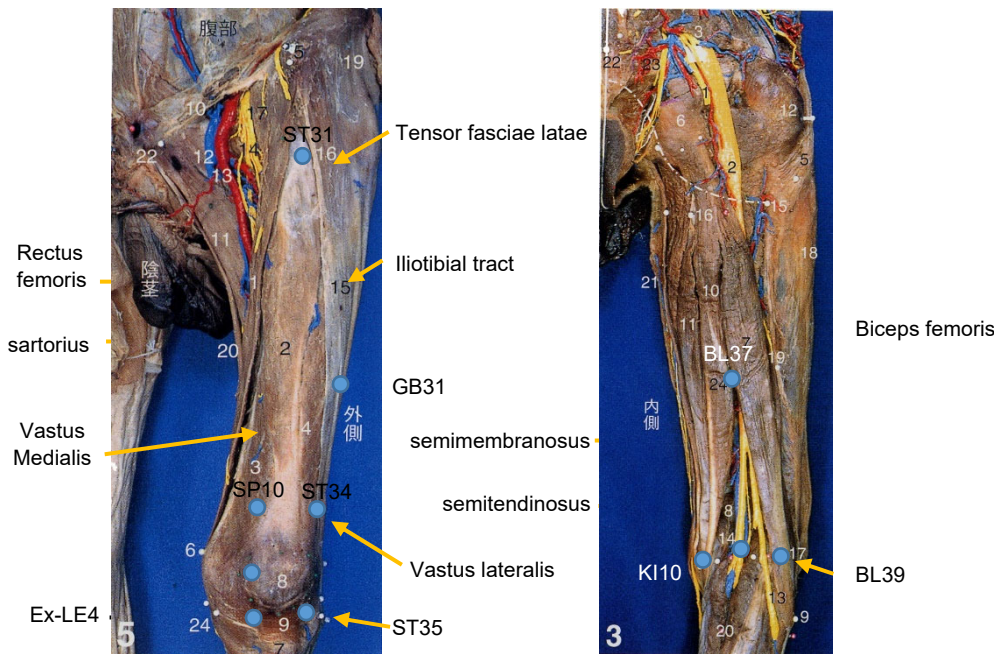


Figure 5: Basic acupoints for the treatment of gonalgia
Seiichiro Kitamura et al.: Color Atlas of Local Anatomy for Acupuncturists and Judo Therapist; Nanzando; 101-111

Results

The muscle tension in the lumbar and femoral regions decreased after the acupuncture and moxibustion treatment and the patient reported a VAS 10 → 1 improvement for the low back pain and a VAS 10 → 5 improvement for the knee pain. The treatment effects lasted for 2-3 days. After 3 days a similar treatment resulted in a VAS 5 → 1 improvement for the low back pain and a VAS 5 → 1 improvement for the knee pain. After the third session the VAS score improvement of 3 → 0 was achieved for both low back pain and knee pain.

treatment has improved his general condition, the treatment frequency was changed from twice a week to once a week. Even though the sleep duration has not changed, he reported to sleep better recently and both appetite and bowel movements are well regulated. This gives the impression of a good health management.

5. Discussion

1) Necessity for an accurate assessment of the pathology

Acupuncture and moxibustion is a treatment form with a long history and has been handed down as an unbroken tradition. When acupuncturists practice based on modern medical examination methods and with an understanding of pathology, they can accurately assess the pathology of their patients, assess whether

acupuncture and moxibustion treatment is indicated or contraindicated, the question of whether the patient should be referred to a specialist, and holding discussions with physicians and co-medical staff enables them to cooperate in medical care. Also, in case the condition is considered or suspected to be a contraindication for acupuncture and moxibustion treatment, it is necessary to recommend seeing a specialist¹³.

2) Tender points and needling points

The needling sensation elicited at the left BL52 induced in this patient marked improvement. Acupuncture and moxibustion comprises many different techniques. We as acupuncture therapists use tender points or indurations, motor points, trigger points etc. for therapeutic purposes based on an anatomical point of view. Treatment point locations often coincide with acupoints, but their selection is not restricted to oriental medical examinations, but local tender points also constitute useful sources of information for an assessment of the condition at hand and the actual needling requires a search for the point of maximal tenderness and identification of its accurate anatomical location¹⁴.

3) Acupuncture and moxibustion treatment for local and general symptoms

Three years ago this patient had suffered from pneumonia and thus was worried about his health. While being in general confident about his health, he was kept very busy and thus had to deal with chronic feelings of fatigue. On this occasion an extended period of acupuncture and moxibustion treatment led to improved sleep and bowel movements, helping to relief accumulated fatigue. The treatment also increased the patient's awareness pertaining to health management and daily efforts related to health maintenance. Clinical acupuncture and moxibustion is characterized according to Hirohisa Yoneyama¹⁰ and Sakae Yoneyama¹⁴ not only by treatment form for diseases, but also as a form of health management, in other words for regular maintenance (reconditioning treatment) and the author too is convinced, that this is where the real value of

acupuncture and moxibustion treatment lies. However, the therapists should inform the patient prior to the acupuncture and moxibustion treatment of the importance of a regular daily life. Medical care basically strives to bring about improvement of symptoms or healing, but the essence of acupuncture and moxibustion treatment does not restrict its attention to specific body regions or conditions, but rather aims at health management (maintenance) and the prevention of diseases. Health is sleeping well, eating well and pleasant bowel movements. Acupuncture and moxibustion treatment can maintain these three health factors¹⁰⁻¹⁴.

5. Conclusions

Above I briefly described The Japan Conference of Clinical Acupuncture & Moxibustion and offered my opinion about the merits of Japanese acupuncture and moxibustion by presenting a case report. The basis for a correct understanding of pathologic conditions by acupuncturists is the acquisition of knowledge pertaining to modern medical examination techniques, assessment of pathologies and available therapies as well as the careful observation of tender spots and indurations on the body surface. Acupuncture and moxibustion treatment is not restricted to local treatment, but can treat the whole body and thus presents a holistic medical care allowing to include health management and maintenance (reconditioning treatment).

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