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Acupuncture for Musculoskeletal Disorders

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Ancient Art to Modern Medicine

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Acupuncture for Musculoskeletal Disorders

ALLEN M. SCHOEN

Musculoskeletal disorders are common in dogs and cats. They may be quite debilitating, especially in the geriatric patient. Often the animal's inability to walk without considerable effort and pain may be the factor that ultimately persuades the client to elect euthanasia.

Appropriate medication or surgery may resolve or ameliorate many musculoskeletal conditions. However, it is not uncommon to see patients for whom analgesic and antiinflammatory medications either are ineffective or are producing side effects and for whom surgical intervention either would not be beneficial or would involve risks associated with other preexisting conditions. These are times when acupuncture is indicated. In both human and veterinary acupuncture referral practices, a high percentage of cases involve musculoskeletal disorders.

Kaplan states that "there is good, although limited evidence for the efficacy of acupuncture in the treatment of myofascial pain syndromes."¹ One survey of physician acupuncturists found that myofascial pain was the second most common medical condition treated with acupuncture, and they rated acupuncture at 80% to 85% percent effective for the treatment of musculoskeletal pain.² There are numerous reports in the human medical literature on the benefits of acupuncture in musculoskeletal disorders. One study reported that 65% of the clients with chronic neck and shoulder pain achieved long-term improvement after electroacupuncture.³

Acupuncture is an excellent alternative to corticosteroid injections for tennis elbow.³ A study of 220 human clients with chronic low-back pain from various causes showed a 79.1% success rate in satisfactory and consistent pain relief.³ Clients who did not have surgery before acupuncture showed a significantly higher success rate.

Acupuncture was twice as effective as piroxicam, a nonsteroidal antiinflammatory agent, in treatment of osteoarthritis.⁴ In addition, acupuncture produced no side effects, whereas piroxicam caused pruritus, intestinal bleeding, or lethargy in 19% of treated clients.⁴ In a follow-up study

on clients with chronic pain, 73% were still asymptomatic after 6 years.³ In one controlled trial on 75 patients, acupuncture treatment twice weekly for 4 weeks was found to be an effective option for the treatment of patellofemoral pain syndrome in humans.⁷ This was one of the largest studies on this syndrome, and acupuncture demonstrated a clear, durable effect in reducing pain and improving function.⁷ Acupuncture was also found to be beneficial in the treatment of chronic elbow pain.⁸ Numerous other reports have documented the beneficial effects of acupuncture for musculoskeletal conditions in humans.⁴⁻¹⁵

In the veterinary literature, there have been reports on the effects of acupuncture on degenerative joint disease, hip dysplasia, immune-mediated arthritis, and intervertebral disk disease.¹⁶⁻²¹ One study found that 70% of dogs with chronic degenerative joint disease showed greater than 50% improvement in mobility and ambulation after acupuncture.¹⁶ Janssens found in one study on 61 dogs with degenerative joint disease that response to acupuncture was better in the hip, knee, and shoulder than in other joints.²¹ Chronic back pain and distal tarsal pain in horses were alleviated with acupuncture.^{22,23}

PHYSIOLOGIC EFFECTS

A comprehensive review of the physiologic basis of acupuncture is presented in Chapter 3.²⁴ There are several theories on the physiologic effects of acupuncture in treatment of musculoskeletal disorders. One of the primary signs of degenerative joint disease, in addition to pain and inflammation, is local stiffness caused by hypertonicity of the flexor and extensor muscles around the joint.²⁵ This is caused by an activation of the sensory A-delta and C fibers in the muscles and tendons, which is related to joint inflammation and locally released kinins. Activation of these fibers activates the gamma motor neurons of both flexors and extensors. This leads to shortened muscles with lower elasticity and thus to further joint trauma.²⁵ In addition,

degenerative joint disease may lead to development of myofascial trigger points.²⁶ Some trigger points are located at the origin of permanently shortened, stiff muscles.^{27,28}

Acupuncture activates central endorphin-releasing systems, resulting in analgesia. The “needling sensation” produced by manipulation or electrical stimulation of deep afferents from, for example, muscles and tendons may contribute to activation of the endogenous antinociceptive system.²⁹ Much of the pain associated with arthritis in humans is believed to be caused by muscle spasms around joints.

One of the most effective therapeutic uses of acupuncture is for muscle pain relief. Pain relief by needling may be induced by improved circulation in the spastic muscle. Activation of a muscle vasodilator could be induced by an axon reflex caused by needling of the spastic muscle or a somatoautonomic reflex caused by needling of the distant area that corresponds to the pain-producing muscle, to improve reduced circulation.³⁰

The impulses originating from the somatic nerve endings of the needling site ascend to the contralateral anterior hypothalamus, the center of this reflex, and then descend to the contralateral cholinergic vasodilator nerve innervating the blood vessel in the pain-producing muscle.³⁰ The dilated blood vessel then eliminates the pain-producing substance to relieve the pain. In addition, release of acetylcholine is facilitated by needle insertion, which produces dilation of the blood vessel in the spastic ischemic muscle.³⁰ Acupuncture also stimulates an anti-inflammatory effect by causing release of endogenous corticosteroids.³⁰ In addition, acupuncture may act as a regulator of the alpha and gamma motor neuron activity. This reduces joint swelling, pain, and inflammation and thereby secondary activation of the motor neurons.²⁴ The beneficial effects of acupuncture for treatment of musculoskeletal disorders is not associated simply with analgesia secondary to endorphin release but is also related to increased local vasodilation and anti-inflammatory effects in addition to release of trigger points and relief of stiffness.

TRADITIONAL CHINESE MEDICAL THEORY

The theories of traditional Chinese medicine (TCM) are discussed in Chapter 4.³¹ *Rheumatology in Chinese Medicine* presents a comprehensive discussion of TCM theory and practice as it relates to musculoskeletal conditions.³² It is interesting to note that Chinese physicians described different types of arthritis based on naturally occurring phenomena a few thousand years ago. These definitions correlate quite well with present-day conventional Western medical practice. We should not be so ethnocentric as to ignore 3000 years of knowledge and clinical trials simply because the terminology is unfamiliar and the vocabulary strikes us as a bit peculiar. These descriptions are offered here to further an understanding of the correlation between TCM and Western medicine.

According to TCM, osteoarthritis is analogous to *Bi* syndrome in TCM.³³ *Bi* means obstruction. It is caused by a blockage of *Qi* and Blood in the meridians as a result of “attacks of external pathogenic factors, such as wind, cold, and dampness.”³³ In terms of Western diagnoses, this syndrome includes, among others, osteoarthritis, rheumatoid arthritis, sciatica, and spondylitis. It is manifested as pain, soreness, numbness, or swelling of joints, bones, muscles, and tendons. *Bi* syndrome can be divided further into wandering *Bi*, painful *Bi*, fixed *Bi*, febrile *Bi*, and bony *Bi*. Wandering *Bi* is caused by Wind, according to TCM. It has a rapid onset and the pain “wanders,” changing quickly. An example of this may be panosteitis. The treatment principle is to select points to eliminate Wind.

Painful *Bi* is characterized by severe pain that worsens with cold weather and improves with warmth. The treatment principle is to eliminate Cold and warm the body. Acupuncturists frequently use moxibustion to treat this condition.

Fixed *Bi* syndrome is typically worse in damp weather. Stiffness rather than pain is more in evidence. It appears to be worse with weather changes. The treatment principle is to eliminate dampness. In febrile *Bi*, heat predominates. There is severe pain, redness, and swelling of joints. An example of this is infectious arthritis. The treatment principle is to eliminate Damp-Heat.

Bony *Bi* is the most advanced condition and is characterized by severe deterioration of the joints from chronic arthritis.³⁴

According to TCM, arthritis may be due to the following³²:

1. Cold, damp invasion of the joints
2. Disruptions in the movement of *Qi* and Blood
3. Channel disorders
4. Organ pathologic conditions
5. Disruption of one of the Five elements

The most common organ pathologic condition is Kidney *Yang* deficiency. This is why animals may have a history of degenerative joint disease, chronic renal disease, and geriatric deafness. The kidney *Yang* deficiency is the underlying cause and should be treated in addition to treating local acupoints around affected joints. Based on TCM principles, the goal of treatment is the following³²:

1. Eliminate painful obstructions
2. Tonify *Qi*
3. Promotion of circulation of *Qi* and Blood
4. Unblock channels
5. Support original *Qi*
6. Disperse Wind and dispel Damp

TCM may be applied quite easily in a small animal practice in treatment of degenerative joint disease. For example, in a dog with a history of arthritis that is worse in damp weather, acupuncture points would be chosen to eliminate dampness and invigorate the Spleen meridian.

For instance, SP-6 and SP-9 would be chosen because they are both used to eliminate Damp and strengthen the Spleen. In addition, moxibustion might be used. It is especially useful in cases for which either cold or damp weather makes the conditions worse. Avoid moxibustion when there is heat in the joints.

In general, local acupuncture points around affected joints can also be added to the acupuncture formula based on the traditional Chinese medical diagnosis to improve results.³³ Treating the underlying TCM disease pattern may improve acupuncture results as well.

TECHNIQUES AND INSTRUMENTS

Before acupuncture therapy, patients should have a comprehensive examination and diagnostic workup. Radiographs, computerized tomography (CT) scans, myelograms, blood chemistry profiles, and any additional tests are performed as indicated to confirm a diagnosis. Once a diagnosis is made, all therapeutic options, including medicine and surgery, are reviewed with the client. Acupuncture may be used in conjunction with medication and surgery, postoperatively, or instead of other modalities, if appropriate. Acupuncture is used primarily when medication is ineffective or causing side effects and when surgery is not feasible because of the nature of the condition or preexisting conditions that preclude surgery. Some clients prefer to try acupuncture first, before proceeding with higher-risk approaches.

Once acupuncture has been selected as the treatment for the patient, the mode of stimulation and the therapeutic points must be chosen. The decision regarding which technique to use depends on the condition being treated, whether the patient requires stimulation or sedation, the type of animal being treated, and the acupuncturist's personal preference based on experience. For instance, I sometimes use traditional needle techniques, electroacupuncture, aquapuncture, or gold implants for hip dysplasia, depending on the dog's personality and age and the severity of the condition.

MODES OF STIMULATION

The following modes of stimulation are commonly used to treat musculoskeletal conditions.

Acupressure

I teach acupressure to my clients as an adjunct to acupuncture therapy. It can be beneficial between acupuncture treatments.

Needling

Most commonly, 25- to 34-gauge filiform stainless-steel needles, 1.25- to 5-cm long, are used. In equine acupunc-

ture, 30-cm needles are used for certain conditions. Needle length is determined by the size of the animal and the points being treated.

Moxibustion

Moxa is a Chinese herb, *Artemisia vulgaris*, that has been used for centuries to heat the acupuncture points (see Chapter 7). Moxa is used either directly over the acupuncture point without touching the skin or indirectly attached to the top of a needle. It is used until an area of erythema develops at the point. I use moxa primarily in cold, damp weather or for tonification in geriatric patients. Extreme care must be taken with direct or indirect moxibustion so as not to burn the patient or singe the hair. I usually hold two fingers on the skin next to the point being treated. Another disadvantage of moxa is that it has an odor similar to marijuana. Proper client communication concerning its use is imperative.

Aquapuncture

This consists of injections of various solutions into the point. It is easily accomplished in most cases. Solutions injected include vitamins (especially vitamins B₁₂ and C), distilled water, physiologic saline, anesthetics, and analgesics, among others. Amounts injected range from 0.25 to 5 ml (equine) subcutaneously or intramuscularly.

ELECTROACUPUNCTURE

Electronic devices have been developed to augment the stimulation given to acupuncture points (see Chapter 7). They may be used with or without needles. Numerous instruments are available. I use electroacupuncture locally, around affected joints. Occasionally, it may be too strong a stimulus in initial treatment of a geriatric patient.

In applying electrical stimulation to acupuncture needles, release of different kinds of neuropeptides in the central nervous system (CNS) can be induced simply by changing the frequency of electrical stimulation without moving the needle position. Whereas low-frequency (2 Hz) stimulation activated release of β -endorphin and met-enkephalin in the central nervous system, high-frequency stimulation (100 Hz in the rat) accelerated release of dynorphin in the spinal cord.³⁵

Laser Therapy

Use of cold, low-intensity lasers to stimulate acupuncture points is quite popular with equine practitioners. The term *laser* is an acronym for Light Amplification by Stimulated Emission of Radiation. Low-intensity laser has been defined as a "form of intense light therapy using various frequencies and wavelengths which promote positive physiologic changes assisting in healing and reducing or alleviating pain."³⁶

I found the infrared lasers (wavelength, 902 nm) to be the most effective. Infrared lasers penetrate 10 mm to 5 cm. There are many claims as to the effects of cold lasers. Clinically, I have found them to be quite effective in cats when placement of needles may be precarious.

Implants

More prolonged stimulation of acupuncture points can be achieved by implanting various materials. Implantation of gold beads into acupuncture points is being used quite successfully for treating hip dysplasia and ventral bridging spondylopathy, as well as for equine back problems and bone spavin.^{18,22,37} In small animals the technique is used under general anesthesia with a complete surgical scrub and preparation. It is discussed in more detail in Chapters 7 and 25.

In the treatment of osteoarthritis in humans, the following techniques have also been found to be beneficial³⁸:

1. Periosteal needling of osteophytes
2. Superficial needling of joint capsule
3. Superficial needling over tender muscles
4. Stimulation of tendon origins and insertions

Point Selection

The numerous laws governing point selection are discussed in other chapters of this text. Each method has its indications and its proponents.

Physiologically, point selection is based on locating points on the body where stimulation will produce a beneficial change in the CNS by modulating ongoing physiologic activity. The most common approach for musculoskeletal disorders is to treat local points around the affected joint, in combination with major distal points. For instance, mandibular pain may be treated with points around the jaw and on the toes. Distal points may have beneficial effects via their somatoautonomic-reflex effects.

Occasionally I use only a single point known to have a specific action for a specific condition. For instance, LIV-3 is an excellent point for hip dysplasia. Most of the time I use bilaterally symmetric points. Occasionally I use only master points on all four extremities. Trigger points are beneficial for local muscle spasms (see Chapter 15). Acupuncture of an extra meridian point, *Zhong Ping*, on the lateral aspect of the femur is beneficial in treatment of arthritis of the scapulohumeral joint in humans.⁴¹

The simplest approach for novices is to choose local points around the affected joint and appropriate distal points. Distal points may be chosen based on somatoautonomic reflexes or on TCM. For instance, in cases of wandering *Bi* syndrome, BL-11 and LI-11 might be chosen to dispel Wind, in addition to local points. According to TCM, BL-23 is frequently used to strengthen the lum-

bar vertebrae. It is also the association point for the Kidney and is located paravertebrally between the second and third lumbar vertebrae.

Point selection may also be based specifically on underlying TCM patterns as well. One might choose KI-3 or KI-6 to treat an underlying Kidney *Yang* deficiency. Certain command and meeting points may be considered as well, including the following:

BL-11: Meeting point for bones

GB-34: Meeting point for the sinews; strengthens tendons and ligaments

GB-39: Meeting point for the bone marrow

BL-57 : Command point for muscles

ST-38: Influences all the joints

The choice of appropriate distal points comes with further study and experience. Also treating the underlying TCM disease patterns may improve treatment results.

Treatment Protocol

Most musculoskeletal conditions treated with acupuncture are chronic, having been treated with conventional medicine or surgery before acupuncture. For a chronic problem, my initial protocol consists of acupuncture treatments 1 to 2 times a week for 3 to 5 weeks. Clients are requested to make an initial commitment to eight treatments for a dog or cat and four treatments for a horse to evaluate properly the results of acupuncture.

It is not uncommon for a patient with a chronic condition to be unresponsive until the sixth or seventh treatment, though some response is often seen within the first two to four treatments. As soon as the desired response is observed, and lasts from treatment to treatment, I taper the schedule to as few treatments as necessary to maintain the effect. That number varies a great deal. Some patients do not require further treatment, and the problem is resolved. Others require long-term management ranging from one treatment per month to one or two per year. Evaluation of response in chronic musculoskeletal conditions is based on a number of factors, similar to the ones used in evaluating the response to conventional analgesic and antiinflammatory medications and to surgery. The response is evaluated by improvement in degree of mobility of the entire animal as well as individual joints, increased activity levels, and alleviation of certain behavior patterns associated with chronic pain. These include ability to walk up and down stairs, standing up, sitting down, and desire to participate in play behavior.¹⁶

Most animals respond quite favorably to acupuncture; many relax and almost fall asleep during the treatment because of endorphin release during treatment. Few animals require sedation for treatment. Occasionally an extremely high-spirited or ill-tempered dog requires physi-

cal restraint, a muzzle, or mild sedation. This may be appropriate as long as one avoids barbiturate anesthetics; they appear to inhibit some of the effects of acupuncture. Some dogs come into the office and lie down waiting for their acupuncture. I believe that this is due to physiologic conditioning.

ACUPUNCTURE FOR SPECIFIC CONDITIONS

Degenerative Joint Disease

Chronic degenerative joint disease usually responds well to acupuncture in clinical practice. One study found that 70% of dogs with chronic degenerative joint disease showed greater than 50% improvement in mobility and ambulation after acupuncture.¹⁶ The 65 dogs in this study were no longer responding to conventional medication or surgery and were recommended for euthanasia or consigned to a life of pain. Treatment of chronic degenerative joint disease with acupuncture can be very rewarding for both the veterinarian and client, in addition to the dog or cat.

The simplest technique to start with is to use traditional Chinese acupuncture needles alone in local points around the affected joints and a few distal points. Distal point selection should be based on treating the underlying TCM pattern. A dry needle technique is used, for which the needles are left in for 15 to 20 minutes. Occasionally electroacupuncture may be used on local points. Aquapuncture, moxibustion, and laser therapy may also be effective.

For degenerative joint disease in the distal foreleg, points that are beneficial include LI-4, LI-11, BL-11, BL-23, ST-36, and GB-34. In hindleg lameness, I include BL-23, BL-25, BL-40, BL-60, GB-34 and ST-36. These points are located in the atlas included in this text (Chapter 9). Local points around the affected joints include the following.

Carpus: LI-4, TH-5, LI-6
 Elbow: LI-4, LI-10, LI-11, LU-5, HT-3
 Shoulder: LI-15, LI-16, TH-14, BL-11, LI-11
 Coxofemoral joint: GB-29, GB-30, BL-54
 Stifle: BL-21, ST-35, ST-36, SP-9, GB-30, GB-31,
 GB-32, GB-33, GB-34, eyes of knee (subcutaneously
 lateral and medial to the patellar ligament)
 Tibiotarsal joint: BL-60, KI-3, LIV-3
 Vertebral column: Bladder meridian points cranial and
 caudal to lesions, BL-23

Clinical significance

ACUPUNCTURE POINT SELECTION RATIONALE FOR COXOFEMORAL DEGENERATIVE JOINT DISEASE

Local points: GB-29, GB-30, BL-54, local trigger points
 Distal points: BL-60, BL-40, ST-36, GB-34, KI-3

Back association points: BL-23, BL-25, BL-28
 Governing Vessel points: GV-20, GV-3, GV-4
 Points to treat underlying TCM patterns

Clinical significance

ACUPUNCTURE APPROACH FOR DEGENERATIVE JOINT DISEASE IN THE STIFLE

Local points: ST-35, ST-36, BL-40, GB-34, eyes of the
 knee, SP-9, SP-10

Distal points: BL-60, ST-45

Additional points: BL-21, KI-3, tender and trigger points
 Mode of stimulation: electrical, manual, aquapuncture,
 laser

Precautions: Do not use instead of surgery for anterior
 cruciate ligament ruptures if surgery is indicated.

The needle insertion depth varies from point to point and from animal to animal. Techniques used and needle insertion time vary from animal to animal, based on experience.

Vertebral Disorders

Acupuncture is used quite successfully to treat animals with hyperpathia associated with chronic cervical, thoracolumbar, and lumbosacral disk disease. A comprehensive review of the diagnosis and treatment of disk disease has been published.⁴² Use of acupuncture for intervertebral disk disease is discussed in Chapter 14.⁴³

A proper diagnosis must be made before treating conditions of the vertebral column. For example, in cases of diskospondylitis, acupuncture is beneficial as an adjunct to antibiotic therapy, but conventional medications are still required. Acupuncture is beneficial in certain cases of cauda equina syndrome. The pain usually resolves quite rapidly, and the animal returns to normal function. Each case is unique: some require periodic treatments indefinitely, whereas others resolve after four to eight treatments. Electroacupuncture with needles usually is the most effective approach in these cases. Cervical vertebral instability (wobbler syndrome) in dogs, whether from ligamentous hypertrophy, hypertrophied dorsal annulus, or disk compression, warrants a very guarded prognosis.⁴⁴ Long-term conservative treatment is usually unrewarding, and surgery offers a guarded prognosis.⁴⁴ Acupuncture is beneficial in about 40% of these cases. There is minimal improvement in conscious proprioception but some decrease in paresis and ataxia. If disk compression is the primary cause, the response to acupuncture is superior. If there is dorsal and ventral cord compression, the prognosis is poor.

Cervical hyperpathia secondary to cervical spondylosis, radiculopathies, or infectious organisms may respond to acupuncture. I have seen cases referred as cervical disk disease that manifested as cervical hyperpathia that were actually

Lyme disease. Cervical hyperpathia is a common presentation of Lyme disease in humans and should be considered part of a differential diagnosis in animals in regions where Lyme disease is present. Points to consider treating for cervical hyperpathia secondary to spondylosis or radiculopathies or chronic disk disease include the following:

1. Local points: BL-10, BL-11, BL-13, TH-15, TH-16, GV-14, GV-16, GB-20; local trigger points
2. Distal points: SI-3, BL-62, LI-4, LI-11, TH-5, GB-39
3. Points based on underlying TCM disease patterns

Acupuncture techniques should be chosen based on the animal's condition.

Thoracolumbar hyperpathia should be treated based on the cause. Hyperpathia secondary to spondylosis can be treated with local bladder meridian points, *ah shi* points, *Hua Tuo Jia Ji* points, Governing vessel points, and distal points to treat the underlying TCM pattern. *Hua Tuo Jia Ji* points may be quite beneficial. These points are located 0.5 to 1.0 cm lateral to the lower end of the dorsal spinous process of the vertebrae. Techniques include dry needle, moxibustion, electroacupuncture, and aquapuncture depending upon the patient's condition.

Rheumatoid Arthritis

The treatment of rheumatoid arthritis is very complex. It involves different stages, and the key is to treat the underlying cause. Acupuncture is often used as an adjunct to conventional medical and nutritional therapy, allowing a decreased dosage of medications, thereby limiting toxicity and side effects.³² Treatment of root causes as discussed above for any musculoskeletal problem and symptomatic treatment are indicated.

Symptomatic treatment should address elimination of external pathogenic factors, restoration of free circulation of *Qi*, and alleviation of pain.

Point selection would include treatment of local points for affected joints and distal points for the underlying conditions. Association points for underlying deficiencies should also include BL-23 for kidney deficiency and BL-20 for deficient Blood. KI-3 and KI-6 should be considered for treating a Kidney *Qi* and *Yin* deficiency.

Rheumatoid arthritis may also be considered a *Bi* syndrome. Because rheumatoid arthritis is considered an immune-mediated disorder, I use points with immunoregulatory effects.⁴⁵ These include LI-4, LI-11, GV-14, and ST-36, in addition to local points around affected joints. In comparing the results of recent research documenting the effects of these points on immune function, it is interesting to note that the same points might be chosen according to TCM. Again, we are all speaking the same language.

Clinical significance

ACUPUNCTURE POINT RATIONALE FOR TREATMENT OF RHEUMATOID ARTHRITIS

1. Treat local points around affected joints.
2. Treat points for immune-mediated disorders (LI-4, LI-11, GV-14).
3. Treat distal points for underlying TCM disease patterns.
4. Treat association points for deficiencies.

Rheumatoid arthritis or chronic degenerative joint disease may also be a sequela of Lyme disease (borreliosis). Acupuncture can be a successful adjunct to appropriate antibiotic therapy in human and canine patients with Lyme disease. According to Western medicine, one would select points to support the immune system in addition to local points.

An example is a 6-year-old male golden retriever brought to our hospital with a history of chronic, recurrent Lyme disease. During the 2-year illness, the dog showed left hindleg lameness and lethargy despite appropriate antibiotic and antiinflammatory therapy. The dog showed dramatic improvement in energy and attitude after the first acupuncture treatment. Lameness resolved after the third treatment. No further treatment has been required, and there has been no recurrence of Lyme disease.

Soft Tissue Conditions

Soft tissue conditions that can respond to acupuncture include myositis and other immune-mediated myofascial syndromes, tendinitis, repetitive strain injuries, and acute soft tissue trauma such as musculotendinous sprains and strains.

Myositis

Several clinical cases of eosinophilic mandibular myositis responded well to acupuncture. I use electroacupuncture with needles on local points SI-17, SI-18, SI-19, TH-17, ST-3, and ST-6. Distal points used include GB-20, LI-4, LI-11, GV-14, and ST-36. A 4-year-old yellow Labrador retriever had a 4-month history of difficulty opening its mouth. Laboratory tests showed elevated eosinophil and total white blood cell counts. It responded only to corticosteroids. When corticosteroid therapy was discontinued, the dog could not open its mouth at all. Eosinophilic myositis was diagnosed by the referring veterinarian. After four acupuncture treatments, it was possible to wean the dog off corticosteroids, and the dog could open its mouth completely. After the fifth treatment, the dog was clinically normal. On 6-month follow-up, the dog was completely normal.

According to TCM, myositis may be considered an invasion of external pathogenic factors of Cold and Wind.

The TCM treatment would then be to choose points to eliminate Cold and disperse the Wind. These points would include GB-20, LI-4, LI-11, GV-14, similar points as would be chosen to treat an immune-mediated disorder. Moxibustion would be considered the technique of choice. Clinically these dogs respond quite well to moxibustion.

Clinical significance

SOFT TISSUE CONDITIONS THAT CAN RESPOND TO ACUPUNCTURE

Myositis
Tendinitis
Repetitive stress injuries in working dogs
Acute musculotendinous strains

Tendinitis

Acute or chronic tendinitis related to acute or repeated trauma is traditionally treated with steroidal or nonsteroidal antiinflammatory medications. Acupuncture and local trigger point therapy can be extremely effective in the specific treatment of the injury (see Chapter 15). Trigger points should be located and treated in the related muscles. Repetitive strain injuries are now being identified in working dogs such as greyhounds, hunting, agility, and obedience trial dogs. Though no research has been conducted on the use of acupuncture for these conditions in working dogs, clinical experience by the author and other colleagues suggests acupuncture and specific trigger point therapy can be quite beneficial in resolving the problem.

PRECAUTIONS AND SIDE EFFECTS

The most important concept to remember when considering acupuncture is that a correct diagnosis is needed before treatment. For instance, if arthritis is being treated and an undiagnosed malignancy is present, the tumor may grow faster because of increased circulation. Acupuncture should not be used if conventional medicine is more appropriate. It is important not to mask pain while the animal deteriorates and when surgery might have been more appropriate. For example, in a 1½-year-old male golden retriever with a 1-year history of right foreleg lameness, panosteitis was diagnosed by another veterinarian. Acupuncture is often beneficial in cases of panosteitis. However, no radiographs had been made. I recommended radiographs before acupuncture. Radiographically, advanced osteochondritis dissecans in the right front shoulder was diagnosed, and the dog was referred for surgery. Surgery was successful. However, 3 months postoperatively, the dog was still limping on the right front leg. Acupuncture was then recommended by the orthopedic surgeon. On reexamination, there was ev-

idence of a knot in the triceps trigger point. After three treatments, the dog was 100% sound and has remained that way without further treatment. Acupuncture can be quite beneficial postoperatively. However, it was fortunate that a thorough examination was performed, because surgery was certainly the initial treatment of choice.

Occasionally an animal's condition may deteriorate temporarily before improving. This usually lasts for only 24 to 48 hours. If an animal's condition consistently worsens after each treatment, the diagnosis should be immediately reevaluated.

Acupuncture may be used in conjunction with nonbarbiturate analgesics and nonsteroidal antiinflammatories. It does not appear to work as well clinically in conjunction with corticosteroids. Corticosteroids tend to inhibit release of endogenous corticosteroids and endorphins, minimizing some of the beneficial effects of acupuncture. However, acupuncture will still relieve the muscle spasms. When acupuncture is used in conjunction with corticosteroids, it appears to take more treatments to observe the desired effects. I do not usually begin acupuncture simultaneously with analgesics and antiinflammatory agents because this makes it difficult to evaluate the efficacy of acupuncture. I add acupuncture subsequently only if there are insufficient results from medication or when we are trying to taper the dose of corticosteroids.

For example, a 12-year-old castrated German shepherd had severe degenerative joint disease in both coxofemoral joints and stifles. Both stifles had been operated on 3 years previously for ruptured cranial cruciate ligaments. The owner was unable to decrease the dose of corticosteroids to alternate days during more than 2 years. Early signs of iatrogenic Cushing's disease were evident.

Acupuncture therapy was performed to treat the degenerative joint disease. After 6 treatments, corticosteroid use was reduced and then eliminated, and the patient improved considerably in attitude and ambulation. Polyuria and polydipsia decreased, and the muscles showed increased tone and strength. On a 6-month follow-up examination, the dog continued to do well without corticosteroids. Acupuncture can be used in conjunction with conventional medication and surgery, if done properly. Continuous reevaluation is important. If acupuncture is no longer helping, the condition must be reevaluated to seek other possible problems.

Many patients being treated with acupuncture are older than 10 years of age and may have multiple problems. For example, while degenerative joint disease is being treated, the animal may be developing other problems as well. When acupuncture is performed, caution must be used not to penetrate too deeply over the thorax and cause pneumothorax. Care must also be taken not to penetrate any joints. Sterility is important, and all precautions should be taken to prevent infection from lack of sterility. The advantage of acupuncture for treatment of muscu-

loskeletal problems is that it is relatively safe and has few side effects. This cannot be said for corticosteroids and many nonsteroidal antiinflammatory agents. If surgery is not immediately essential, acupuncture can be tried first if indicated. If it does not produce satisfactory results, the surgical option is still available. The disadvantage of acupuncture for chronic degenerative joint disease is that it often requires continued treatment, which may prove difficult for some clients. Solid client commitment and good communication skills on behalf of the veterinarian are essential. Acupuncture is not a cure for arthritis but a valid treatment to help alleviate pain and improve the patient's quality of life.

The American Veterinary Medical Association warns that the potential for abuse exists with acupuncture. The AVMA recommends that acupuncture be performed only by veterinarians with advanced training. Advanced training is definitely necessary for veterinarians who are interested in incorporating acupuncture into their practice.

CASE STUDIES: CASE 1

A 9-year-old castrated male collie was referred for acupuncture by an orthopedist for treatment of bilateral chronic degenerative joint disease in the carpal joints, elbow, and tarsal joints. Rheumatoid factor, antinuclear antibodies (ANA), direct and indirect Coombs', and Lyme titers were all negative. Corticosteroids caused polyuria and polydipsia. Because of the breed predisposition for rheumatoid arthritis, the animal's nature, and the number of joints affected, I chose to treat general points for immune-mediated polyarthropathy. I treated LI-4, LI-11, ST-36, BL-40, BL-11, BL-23, GB-34, and BL-60, using traditional Chinese needles for 15 minutes. The dog showed dramatic improvement in attitude, mobility, and walking after the second treatment. By the sixth treatment, the patient showed 100% improvement. The owners claimed that the dog had not exhibited this behavior in 5 years. The dog was maintained with one treatment every 2 months and finally died at 15 years of age from unrelated causes.

CASE 2

A 12-year-old castrated male German Shepherd became non-ambulatory after completion of treatment for heartworm disease. After consultation with an internist, it was concluded that lameness was caused by severe degenerative joint disease secondary to Grade-4 hip dysplasia. The patient was nonresponsive to analgesics, corticosteroids, and nonsteroidal antiinflammatory agents. Because of cardiopulmonary problems secondary to heartworm disease, surgery was not recommended. Acupuncture was elected. After four acupuncture treatments the dog was ambulatory, and after six treatments the dog showed 75% improvement in mobility and ambulation. The dog continued to improve and lived to be 17 years old. He required acupuncture treatment 6 times per year after the initial series. Treatment consisted of electroacupuncture locally around each coxofemoral joint for 15 minutes. Acupuncture points used included BL-23, BL-25, BL-54, BL-40, BL-60,

KI-3, GB-29, GB-30, GB-34, and ST-36. Electrical current was applied to GB-29 and GB-30.

Some of the points chosen also represent the TCM pattern of a Kidney *Yin* and *Qi* deficiency (BL-23 and KI-3).

CASE 3

In a 6-year-old black Labrador Retriever with an 8-month history of severe right foreleg lameness, radiographs showed severe degenerative joint disease in the right front elbow. Medication did not resolve the lameness.

After five electroacupuncture treatments, the lameness resolved completely. At this writing, the patient is receiving preventive maintenance acupuncture 4 to 6 times per year and has shown no evidence of lameness for the past 2 years. Acupuncture points used included L-14, LI-10, LI-11 HT-3, BL-11, and the triceps trigger point. Electroacupuncture was applied across the elbow from LI-11 to HT-3 for 15 minutes per treatment.

CONCLUSION

Acupuncture is an excellent treatment alternative for certain musculoskeletal conditions in veterinary medicine. It is relatively safe and effective. However, it does not appear to prevent the deterioration of the overall condition or to treat arthritis systemically. Surgery should be considered when it may be more beneficial for long-term resolution of a condition. Acupuncture should be used as an adjunctive therapy in an integrative approach including nutritional supplements, botanical medicine, and conventional medications where appropriate.

As veterinary care and nutrition improve, our patients are living longer and there are more geriatric animals with chronic degenerative joint disease. As our patients age, there will be increased demand for safe, alternative therapies to maintain the quality of their lives. Acupuncture is proving to be a beneficial therapy in the treatment of geriatric patients, especially those with degenerative joint disease.

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