

The Liver In Chinese Medicine

By Leon I. Hammer, MD

Published in Medical Acupuncture, September 2009, Vol. 21, No. 3: 173-178

I. Abstract

The literature regarding the Liver has largely centered on Liver Qi stagnation and Liver Yang Rising, both of which I have found clinically highly exaggerated in importance in our time and poorly understood. Liver Blood deficiency, Liver Toxicity and the relationship between the Liver and other solid organs also requires re-examination and re-evaluation. Ignored is the pandemic of our time, Liver Qi-Yang deficiency and Liver Separation of Yin and Yang. This is one of the instances in which my teacher, Dr. Shen, would say 'book wrong'.

What follows is an attempt to enlarge our comprehension of these issues and in part to present a point of view that experiences the medicine less in terms of pathology and more in terms of positive and natural function, an important conceptual shift.

2. Key Words

Liver Qi Stagnation; Liver Yang Rising, Liver Blood deficiency, Liver Qi-Yang deficiency, Containment, Separation of Yin and Yang; toxicity; Liver 'attacking'; substances of abuse

LIVER QI-YANG DEFICIENCY and SEPARATION OF YIN AND YANG

In the recent literature from both the West and the East, nor in either the Nei Jing or Nan Jing have I found any reference to conditions that I find constantly increasing since first learning about it from Dr. Shen [John HF. Shen OMD] over thirty years ago. The conditions are Liver Qi deficiency, Liver Yang deficiency and the Separation of Liver Yin and Yang.

Liver Qi and Yang deficiency was associated by my teacher, Dr. Shen, [personal communications] with overwork [beyond one's energy over a lifetime] and found from late middle to old age. The principal consequence was easy fatigue and less stamina in performing daily tasks. The concept of 'beyond one's energy' means simply that we are not all created equal, and that work that might deplete one person might have little effect on another. Constitution and body condition [the 'terrain'] along with the 'stress' [overwork and over exercise] are the determining factors.

What I am about to describe differs from Dr. Shen's observations in that it presents with a greater degree of deficiency on the pulse. In addition, besides fatigue, there is lassitude, lethargy and procrastination always associated with varying degrees of a clear inability to follow through and move forward on plans and decisions about which there is endless discussion and little or no action. The consequence is that ideas rarely become reality. The most serious long-term outcome described by Dr. Shen is the development of a lymphoma of the Liver.

I wish to make it clear early in this discussion that as stated already we are not all created equal. Some people with very strong Livers will tolerate much more abuse than others with less substantial Liver function. There will be many who can honestly say that they have used and abused the cold substances with no obvious consequence. On the other hand there was the teen aged daughter of a friend to whose side I was called in the middle of the night in a psychotic state because she had for the first time had one puff of marijuana.

Liver Qi deficiency is identified on the pulse at the Left Middle Position by increasing degrees of deficiency by a Yielding and Diminished Qi Depth, Spreading [Absent Qi Depth and Separating Blood Depth], by a Reduced Substance and Pounding, and a Diffuse quality especially at the Blood and Organ Depth.ⁱ

Liver Yang deficiency is described as the entire Left Middle Position being Feeble-Absent, Deep and/or beginning to Separate at the Organ Depth. Separation of Yin and Yang of the Liver is found in various stages, first with Separating at the Organ Depth and later at the Blood Depth until there is a complete disappearance of the Blood and Organ Depths and retention only of the Qi depth [the Empty quality]. An even more serious pulse sign that indicates the Separation of Yin and Yang is Changing Qualities at the Left Middle Position.

Years before I studied Chinese medicine or met Dr. Shen I had observed the phenomena of easy fatigue, inability to recover energy and an inability to follow through on plans with hundreds of young college students who I encountered in the late 1960s and early 1970s in my capacity as a psychiatric consultant to a Student Health Clinic in a local college. During the 1970s I also observed this in friends and acquaintances. They all had one common lifestyle, though some were obviously more vulnerable; they all smoked marijuana fairly constantly.

During the time that Dr. Shen and I worked together he was unaware of the effect of 'substances of abuse' as an etiology of Liver Qi-Yang deficiency and Separation of Liver Yin and Yang. In my practice it was increasingly clear that this was becoming the major cause of the pulse findings described above.

When I began to teach the pulse in 1983 I used the student's pulses to demonstrate positions, depths and qualities. I found an alarming number of them to have an Empty quality at the Left Middle Position. It was incumbent upon me to share the interpretation with the class and soon found that rather than wanting to hide this widespread use of marijuana and LSD, the cold substances that were draining their Liver Qi, the participants were eager to share their stories. The pulse workshops were becoming group therapy sessions and the story from mostly health professionals was that they had turned to Chinese medicine in the hope of recovering their health. I began to use subjects referred by the practitioners for demonstration rather than the practitioners themselves. Gradually I realized that substances such as LSD and heroin were equally cold Qi-Yang draining substances leading to the same symptoms and pulse picture.

It must be kept in mind in the following discussions of Liver Qi—Yang deficiency and toxicity that the Liver is the detoxifying organ whose deficiency will greatly exacerbate the effect of any toxic condition. This includes substances produced and used by the body such as hormones whose by-products need to be excreted.

A talented young woman presented herself with “weird emotional swings” that included being “nervous, anxious and jittery”. The swings were between confidence and lack of confidence to perform her work, to move ahead or retreat and procrastination was a prominent aspect of her problem. At this point she was more affected by the misery of retreat than the fear of moving ahead, and while she regarded pot as her friend that “made it possible for me to survive and function, it was now a matter of saying goodbye to a friend than as an enemy to overcome”. Furthermore, “pot is my excuse for not living up to my potential; if I leave out pot and fail, it will be devastating to my psyche.” Related symptoms included increasing fatigue during the day with extreme agitation and restlessness at the end of the day with an inability to focus on any one project. Apart from marijuana, bicycle riding at great speeds also helped her to “leave everything behind”.

While there were other symptoms, most relevant among them included nausea and abdominal discomfort with yellow phlegm, including a ‘plum pit’ sensation, and bowel movements that alternated between constipation and loose and floating. An earlier diagnosed Gallbladder Damp Heat condition [related to Liver function discussed below] was successfully treated [Warm the Gallbladder Decoction]. Most prominent on her pulse was the Left Middle Position that had Constantly Shifting Qualities, Empty quality, Flooding Excess and Slipperiness, indicating a Separation of Yin and Yang, and a Retained Damp Heat condition. Both the Constantly Shifting and Empty quality are signs of severe Separation of Yin and Yang of the Liver, and characteristic of people using large amounts of cold substances, marijuana in this instance.

Her dilemma reached crisis levels when she was offered by her family the possibility of leaving a profession she loved for one she did not want that would have brought her greater prestige and financial rewards, but separate her from her partner of whom her family did not approve. She agonized over this and finally took the advice to stop taking pot for 3 weeks to see what happened. She did this, with support from friends who were not ‘pot heads’, and realized for the first time her ability to sort out the issues and make a firm decision with plans for the future that she has successfully executed.

Engaging a patient in a caring, respectful and honest way is prerequisite to dealing with the awareness by the patient of the effect of the cold substance of choice as related to their problems [fatigue, lassitude, procrastination, inability to act]. This is a major challenge in a culture where marijuana use is considered the social norm.

The two most important individual herbs to recovery of Liver Qi-Yang deficiency and Separation of Liver Yin and Yang are Astragalus [Huang Qi] and Salvia [Dan Shen]. Other herbs in the formula would depend upon that individual’s other conditions. The most commonly used formulas are an altered Ginseng and Longan [Gui Pi Tang] and Ginseng and Astragalus [Bu Zhong Yi Qi Tang]. The latter tends to be too stimulating but is somewhat ameliorated adding the Linking Decoction [Yi Guan Jian].

With the many students alluded to above in the 1960s and early 1970s who used large amounts of marijuana and LSD the most frequent explanation that I heard regarding their use was the

inability to deal with anger and pain rather than fear of facing life and low self-esteem as with the above example thirty years later.

LIVER TOXICITY

It can be argued cogently that the cold substances described above are toxins as much as what follows. I make the distinction by the pulse picture and the fact that though they have fatigue in common, the toxins that follow do not include lassitude, procrastination and the inability to execute ideas that characterize the cold substances.

For some of these who were acquaintances first and patients later the issue was more complicated. Many were artists who had worked with solvents for years often in poorly ventilated spaces and were clearly toxic. Dr. Shen had described a pulse picture in which they fit that included a Deep pulse with “Blood Unclear” and a very Slow rate. Blood Unclear is a pulse that increases in volume very slightly as one releases one’s finger pressure from the Organ Depth to the Blood Depth rather than decreasing which is the normal progression. It was my impression that while the toxicity from inhalant solvents was occurring at the same time as the intake of cold substances [primarily marijuana], that the pattern of toxicity seemed to dominate the pulse.

The chief complaint of fatigue was greater with those afflicted with the inhalant solvents and the ambivalence less than those whose Liver dysfunction was from cold substances. These artists were the first people in my practice who would later be classified as Chronic Fatigue Syndrome. The geographic location in which I worked was the site of a famous artist colony [de Kooning, Pollack], in which the more successful artists hired lesser ones to do work that involved these solvents, especially sculpture and mixing paints.

In the late 1970s a 55 year old woman presented herself with pain in her left leg that within months had progressed to redness, swelling and increasing pigmentation. She seemed to associate this with painful Rolfing that she had had two years before that partially relieved her scoliosis.

She said that while her hands and feet had been stiff and gradually disfigured for twenty years, for the past three years they were now swollen and her hands and feet cold.

The patient was very wealthy and reported boredom relieved by her avocation at which she worked assiduously, metal sculpture primarily with welding. She was obviously very irritable and critical, especially of her husband, a quiet gentle man who she agreed performed well in satisfying all of her needs. She smoked.

Her pulse examination was summed up at that time as ‘general stagnation’ that was confirmed by Dr. Shen who saw her once at that time. There was Heart and Lung Qi deficiency. Later, increasing Liver Qi Stagnation and Stomach Heat and middle burner stagnation was confirmed by tongue findings. Labile hypertension was noted. She was seen intermittently because she lived only part time in my area.

After about one year I noted besides stagnation on her Liver and Left Diaphragm, a Rough Vibration on the Left Middle Position [Liver]. Despite attempts with acupuncture and herbs to

move the stagnation in the Liver and middle burner in general my notes indicated an increase as well as an increase in the Cotton quality. Gradually the Left Middle Position lost all sensation and was described as 'dead' confirmed by Dr. Shen. Every past Dead quality has been confirmed cancer.

She was urged to consult her internist who wrote the following report: "I am pleased to report that your recent laboratory studies were normal. These include a complete blood count, hematocrit, erythrocyte sedimentation rate and urine analysis." All tests of liver and kidney function were normal, but he did say that "the stool specimen was very slightly positive when tested for hidden bleeding" which he attributed to the rectal examination. This internist resisted all attempts to have an ultrasound of the Liver-Gallbladder and when told of my concern simply leaned back in his chair and laughed. The patient was dead from cancer of the bile ducts within six months after the last time he refused. It is my impression that this cancer was the result of toxicity due to welding over many years. I was not privy to the autopsy report.

During these years, the late 1970s and early 1980s I encountered industrial welders whose complaints, extreme fatigue, were similar to the artists suffering from inhalant solvents with similar pulse findings described above. Obviously cessation of exposure to the toxin is primary. Reduction of the toxin can occur either very quickly with a combination of Golden Seal and Licorice [Gan Cao], four parts of Golden Seal to one part Licorice. This approach is very valuable when there is an urgency or emergency aspect to the situation.

A slower and safer approach worked out by Cynthia Gray, A.P. and myself is to use Lidan at individual recommended doses [it is draining] at night and in the morning and sip bentonite [clay] all day to prevent the toxins leached by the Lidan from being reabsorbed by the Intestine. The bentonite, a natural detoxifier by itself, is available in health food stores and on the internet under different trade names.

During the past ten to fifteen years, especially since the first Gulf War, we have noted a consistent increase in the appearance of the Choppy quality on the entire pulse. Whereas in the first edition of Chinese Pulse Diagnosis; A Contemporary Approach, [2001] the quality was listed as uncommon, in the last edition [2005] it is listed as common. The quality has also increasingly appeared in the O-B; O-O positions associated with Retained Pathogens. Traditionally the Choppy quality is a sign of Blood stagnation.ⁱⁱⁱ While at first a puzzling association, the Choppy quality and toxicity, further investigation revealed that the cause of death in poisoning is often fatal pervasive irreversible Blood stagnation with a cessation of sufficient Blood circulation. Our first patients were veterans of the Gulf War [Gulf War Syndrome] complaining of extreme debilitating fatigue similar to the complaint of other people found to be toxic as described above.

I repeat here for emphasis what I have written below in the 'Discussion', that toxins exist increasingly in every phase of our existence, air, food, water, clothing, electromagnetically so that it is estimated that between fifty and one hundred and seventy substance are in our blood that were not there sixty years ago. To a large measure these are fragments of long chain hydrocarbons derived from petro-chemical [oil] compounds manufactured by huge and powerful chemical companies

LIVER QI STAGNATION

Liver Qi stagnation is associated in the `system of correspondences' with repressed anger. Contrary to this `system,' repressed emotions will instead affect the most vulnerable organ. In fact anger is generally the result of frustrations of which there is abundance everywhere in life, at home and at work, in school and everywhere between. The attempt to contain the angry responses to this frustration exercises one of the Liver's principal functions, to contain emotions and live in relative safety and harmony in society. All of the Ten Commandments and almost every law and rule that regulates society requires the Liver to contain negative and dangerous responses to frustration. In excess we call this Liver Qi stagnation. Chapter 9 of the Su Wen reads: "The Liver is the root of stopping extremes."iv

It is therefore incumbent upon us to regard the Liver's ability to stagnate Qi and contain emotion and response as a normal necessary function rather than automatically associated with pathology. In fact, in our time, the problem is not too much containment [stagnation] but too little. Partially, and I emphasize only partially, this is the result of the ubiquitous use of the cold substances, especially marijuana, that has weakened the ability of the Liver to contain emotions and actions. The explosion of greed that followed the `flower children' into adulthood that has characterized capitalism in our time is a direct descendant of "if it feels good it must be good".

Even more important with regard to the Liver's ability to contain and stagnate is the loss of the ability to tolerate the frustration that accompanies long term projects that do not seem to have a quick outcome. We are more and more a society that requires instant satisfaction rather than one based on distant satisfaction achieved through long-term effort. Witness the failure of up to seventy percent of children to graduate high school in many parts of this country. Their parents do not have the ability to tolerate frustration and cannot teach it to their children. In fact, today a large number of children are introduced to drugs by their parents. Again, I do not wish to minimize the other factors that contribute to this failure: poverty and discrimination, television and computer games for example as well as the consumer-credit card culture. However, the use of the cold substances has reached into every level of the educational system, into small towns as well as into the cities with children as young as nine years old smoking `pot' as a daily habit.

The classic TCM pulse mistakenly described as Wiry or more correctly as String Taut [Tense and Excess Pounding in my system (CCPD)] was ubiquitous in mainland China when I studied and traveled there in the 1981. This was amidst cultural conditions in which everyone was spying on everyone else and deviations were rewarded by a bullet behind the head. The fear, rage and repression was so great at that time that every pulse was explosively contained in the form of an extreme `String Taut' quality often accompanied by signs of severe shock, and confirmed by the patients who had seen their parent killed before them. Loss of containment there and then meant death.

It should be noted here that excess heat almost always accompanies Liver Qi stagnation [thus the Robust Pounding]. This is at first metabolic heat that the body brings to the Liver to overcome the stagnation. The fate of this Excess Heat is expounded below under the rubric Liver Yin Deficiency and Rising Liver Yang.

There is a condition described as Nervous System Tense described by Dr. Shen, and called by me the 'vigilant pulse'. This is a pulse that is uniformly Tense at all times despite other qualities and conditions that may exist concomitantly. It is associated with constitutionally endowed persecuted people as a survival mechanism that kept them in a constant state of alert for danger. There are distinctions described in the above references, between the centuries long ethnically oppressed-genetically determined Nervous System Tense [Jews for example] and that as a response to transiently dangerous situations such as moving into a dangerous neighborhood or going to war. In the former constitutionally determined condition the tenseness is constant and the pulse rate normal or low. With the situational type the tension is there only when there is stress and the pulse rate higher. The 'Nervous System Tense' condition is relevant here because it affects the Liver more than any other organ. It will affect other vulnerable organs due to deficient terrain, but always works through the Liver to affect those organs. The result is similar to Liver Qi stagnation with similar consequences for the Liver and for other organs described below.

The principal characteristic of Liver Qi is that it needs to move, not only itself, but Qi in many functions, especially the digestive tract, as we shall see later. When Liver Qi moves from the contained to the repressed and the pressure to move overcomes the forces of resistance [the irrepressible force meets the immovable object] the Qi can break loose and will move to the most vulnerable organ, Liver 'attacking'. It almost always carries with it the Excess Heat that has accumulated from failed attempts by the body to have metabolic heat move the Qi.

The term 'Liver attacking' is unfortunate since the escaping Liver Qi is simply moving to the area of least resistance, the most vulnerable area or organ. There are internal pathological consequences as well as external, some of which are discussed below, Liver Blood stagnation for example [the Qi moves the Blood] that can be the result of either Qi stagnation or Qi deficiency.

The Liver can 'attack' the Lungs in at least two ways with which I am familiar. In either instance the Lungs are vulnerable because of previous disharmony. The first is the acute attack most often associated with a sudden severe emotional stress, such as a piece of unexpected bad news with which the person is unable to cope. Acutely, the person is unable to take a deep breath and stress becomes panic. Feeling that they are going to die, exacerbates the inability to take a deep breath.

The mechanism of action is related to the Liver's control of the autonomic nervous system [not in the books] in which the bronchial tubes and bronchioles are temporarily in spasm and in which Liver Qi can activate [see below]. This is relatively easily relieved by strongly stimulating simultaneously Sp-6; Liv-8; P-6 [requiring three people] while the patient attempts to take three deep breaths three times with three breaths between stimulation. An alternate method requiring only one person is strongly stimulating P-6 and TB-4.

Asthma is a chronic condition that is less easily relieved and is characterized with relatively little of the usual symptoms of asthma, tending like Yin deficient asthma to be dry rather than wet. It is an asthma that characteristically begins in adolescence rather than childhood and is very stress reactive. It is not appropriate to address the mysteries of the relationship of the Liver to the autonomic nervous system except to say that spasms of the bronchi and bronchioles is a

parasympathetic function obviously activated when Liver Qi escapes the Liver and `attacks` the vulnerable Lungs.

Palpitations at rest are associated with Liver Qi dysfunction, especially Liver Qi stagnation that leads to Excess Heat brought by the body to overcome the stagnation. When Liver Qi leaves the Liver to `attack` the most vulnerable organ or area it brings Excess Heat with it, as explained above. Both the erratic Qi and the Excess Heat stimulates the vulnerable Heart unable to maintain homeostasis with palpitations and sometimes tachycardia or Atrial Fibrillation. Palpitations on exertion are only Heart related and are the result of effort beyond the Heart's ability to meet the circulatory demands of the action.

Interstitial Urethritis or Non-specific Sterile Urethritis is an inflammation of the bladder and urethra with no signs of infection. I have encountered this condition many times in my practice and treating it as `wandering` Liver Qi as a result of Liver Qi stagnation has successfully relieved the condition along with herbs to reduce inflammation in the Lower Burner, diminish acidity and dilute the urine to reduce irritation.

Perhaps the most vulnerable of all organs to `attack` are those associated with digestion, especially the Stomach. This is due to many factors including poor nutrition, the pressures of the information age in which people eat too quickly and irregularly. People eat to live rather than live to eat, consuming `fast foods` and replacing an event that was once primarily social and an art with stress.

One important issue is the role of Liver Qi in the digestive process. It is said that Stomach Qi moves downward. The driving force for this downward movement is Liver Qi. If Liver Qi is deficient either because the Qi is stagnated in the Liver or because Liver Qi is deficient, food and Stomach Qi will become stagnant in both the Stomach and Intestine.

The digestive conditions associated with the Liver's dysfunction are several. If Liver Qi cannot move food downward the hydrochloric acid in the Stomach accumulates leading to an environment favorable to organisms such as H. Pylori and the associated gastric and duodenal ulcer. If Qi and food does not move downward and Liver Qi is erratic they may move upward [regurgitate] into the esophagus along with Stomach acid causing Barretts's syndrome, a pre-cancerous condition of the esophagus. Regurgitation can also occur with Spleen Qi deficiency. The differentiating factor is that with the Liver `attacking` there is often nausea while with regurgitation due to Spleen Qi deficiency there is rarely nausea. Liver Qi `attacking` the Intestine is characterized by only occasional explosive diarrhea, usually associated with acute stress. Again, for the Liver to `attack` the intestines they must be vulnerable. The reasons for the vulnerability are not the subject of this paper, but highly underestimated chronic parasites must be considered.

The causes for Blood stagnation in the Lower Burner are manifold, the Heart and Circulation trying to overcome gravity being the most important. However, the pervasive function of the moving aspect of Liver Qi in the human body is a factor when Liver Qi is stagnant or deficient. This is especially important during the menstrual cycle when the Liver is responsible for

releasing the blood it stores to the uterus. Again, while this is for another discussion, Blood Stagnation during the menstrual cycle and Liver Qi are intimately related.

In terms of the relationship of the Liver and the Gallbladder we consider the larger relationship between the solid and hollow organs. The hollow [fu] organs function primarily to remove pathogens from the Solid organs and in some instances to supply the solid [zang] organs. I have observed this primarily in the first function. The primary pathogen seems to be heat and this is clearest in the removal of the excess heat that builds up in the Liver that attempts to move stagnant Liver Qi [though it is also observed less often when the Small Intestine removes Heart heat to the Bladder [another etiology of interstitial urethritis]. The heat is removed with the bile, a partially Yin substance, to the Gallbladder that then discharges it into the Small Intestine through the Sphincter of Odi.

With regard to the Liver the well being of the Gallbladder depends on how much heat it must remove and how fast it can discharge it. When it cannot maintain a steady flow the Heat then builds up in the Gallbladder, the bile becomes stagnant and we have a Damp Heat Gallbladder condition with the settling out of bile salts to become gallstones and break-down of the wall of the Gallbladder with micro-bleeding and necrosis. It is incumbent upon us to keep Liver Qi moving in a functional [rather than `attacking`] fashion to spare the Gallbladder and move the Qi and Blood for all their many functions.

Liver Blood stagnation is a less well recognized condition that develops as a result of Liver Qi not moving because of excess [classic Liver Qi stagnation from repression] and the related drying from excess heat or from deficiency from the causes described above. It is detectable on the pulse in the Engorged Positions. The Liver `stores' the Blood and if either of the conditions mentioned above develop, the Liver cannot perform its normal function of moving the Blood both within and outside of the Liver [discussed below]. Ongoing Blood stagnation can lead to tumors.

LIVER YIN DEFICIENCY AND RISING LIVER YANG

Liver Yang Rising is a deficient condition. This is one of the most misunderstood conditions in Chinese medicine. It is regarded by the majority of Chinese medical students and practitioners as an excess condition, and treated as such, with undesirable effects. As indicated by the title of this section of this paper, Rising Liver Yang is a deficient condition, a result of the Separation of Liver Yin and Yang due to Yin deficiency rather than from Yang deficiency as described above.

One type of Liver-Wind is associated with Rising Liver Yang. While I am familiar with its ancient history, I find the current concept of Wind in Chinese medicine confusing and misleading, consisting of a series of symptoms that seem related to the Western concept of the `nervous system' and sometimes the skin [one avenue available to the body for the discharge of excess heat]. Excess or deficient heat [as in this case] always seems involved. Apart from the fact that heat in the body seems to act erratically and out of control when either truly or relatively excess [Yin deficiency], the relationship to Wind seems ready to be updated [to be discussed in a separate paper]. Dr. Shen [personal communication], called it "the fastest moving energy in the body" [nervous system electrical] gone askew.

The two principle etiologies of Liver Yin deficiency, the Separation of Yin and Yang and rising Liver Yang are described as follows. Metabolic Heat is required to relieve chronic Liver qi stagnation. If it fails to overcome the stagnation Excess Heat accumulates. The Liver mobilizes its Yin to balance the Excess Heat and over time, possibly years, the Yin is depleted. Eventually the depleted Yin cannot hold onto Yang, Yin and Yang Separate and Yang, without the centrifugal force of the Yin, becomes out of control and dysfunctional. Yang is a lighter energy and rises becoming the condition, Liver Yang Rising whose consequences are well known. This is a deficient condition, a severe Yin deficient condition. It is not an excess condition simply because the symptoms, intermittent high-pitched tinnitus, throbbing headache, etc. may have excess characteristics. When fluids [Yin] decrease there is only an apparent, not real excess, not a true excess. The remedy is to nourish Yin. Do not drain heat.

Associated conditions are hot flashes and sweats. While these are often considered Yin deficient conditions the commonly used formula for this condition is Two Immortal Decoction [Er Xian Tang], a formula that has as three Yang nourishing herbs and one blood nourishing herb. Hot flashes and sweats are not due to Yin deficiency. [Though outside of this discussion and my experience, they are also due to blood stagnation in the lower burner according to Zhang Zhong Jing]. Hot flashes occur when either Yin or Yang are sufficiently deficient to cause a Separation of Yin and Yang. More often in our time the deficiency is in Yang, and while the heavier Yin tends to remain in the body, the lighter Yang rises and leaves the body as a hot flash. When the Separation becomes very severe the Yin follows the Yang and we have hot [Yang] sweats [Yin].

Why do these hot flashes and sweats occur most during the evening and night? During the day when the sun is rising and has its maximum effect on the earth it inhibits the body's Yang from separating from the Yin and rising. Later in the day, in the evening and at night the Yang of sun is no longer able to inhibit the Yang of the body which 'wanders' 'aimlessly' [according to the Japanese]. When the Separation of Yin and Yang is profound even the Sun cannot control the escaping Yang and Yin. [Cold day sweats are associated with Heart Yang deficiency]. The role of the sun in Chinese medicine regarding health and disease is poorly understood and is the subject of another discussion.

According to Dr. Shen, while overworking the body drains Yang, especially of the Liver, overworking of the mind drains Kidney Yin, and over a life time leads to a Kidney Yin deficiency. Since the Yin-jing, the fluids of the body, is supplied by the Kidney to all organs, the entire body and mind is affected. Increasingly as the urban industrial and information [beginning with the printing press] ages have succeeded those ages in which people were closer to nature and the earth the mind has become increasingly overtaxed. Rural people used their minds. We are considering use beyond capacity.

The principle symptom of this general Yin deficiency is extreme dryness of the entire body, irritability and agitation [agitated depression]. Water satisfies thirst for only a short time. Tinnitus with a cricket sound is common. (The texts list extreme symptoms such as 'five Hearts Hot [Chest, palms and soles]' that a practitioner might encounter once in their career and malar flush with extreme Yin deficiency in the aged. Night sweats as described above are due to a Separation of Yin and Yang often due to Yang deficiency ('book wrong').

All of the organs are secondarily affected by the Yin draining aspects of mental activity, depending upon vulnerability and upon the nature of the activity and the degree of the 'overworking'. Shock, worry and obsessive-compulsive disorder [OCD] depletes Heart Yin. The classic formula for treating Heart Shock that accompanies all trauma, physical and emotional, is a modification of Sheng Mai San consisting of three herbs that provide or protect Yin, American Ginseng (Xi Yang Shen), Schizandra (Wu Wei Zi) and Ophiopogonis (Mai Men). The principle symptom is agitation with constant thinking and obsessiveness.

Rumination about ideas while eating depletes Stomach Yin. The principle symptom is becoming easily full and constant snacking, dry stools and constipation and a dry mouth and throat. Another etiology is overwork of the stomach from eating too many processed foods and especially in the form of protein powder supplements. Grief, especially with tears, drains Lungs Yin. A dry cough and dryness of the nose and throat might develop. Repressed resentment, impotent rage and the attempt by the body to overcome the concomitant Liver Qi stagnation as explained above, gradually exhausts Liver Yin. Liver Yin deficiency is noted for ongoing agitation and irritability with great difficulty in relaxing and resting [naps make them feel worse].

LIVER BLOOD DEFICIENCY

Liver blood deficiency is associated with the Liver's inability to store the blood and deliver it to the tendons, ligament, muscles and peripheral nerves, including the autonomic nervous system, and nerves to the skin as well as to the uterus at the onset of menses. The books state that Spleen Qi is responsible for muscles. Dr. Shen disagreed ['book wrong' again]. My experience has been that the Spleen is responsible for connective tissue and that the accumulation of fluid due to a Damp Spleen and dysfunctional Triple Burner (non-pitting edema) accounts for some obesity and to the difficulty in losing weight especially in women.

Where Blood is concerned there is not only the amount of Blood, the amount produced by the bone marrow [Kidney Jing] and by digestion [Spleen Qi and the Triple Burner (Internal Duct)], the capacity of the Liver to store it that depends upon the integrity of Liver Qi, but also the ability to move it to where it must go that depends upon the movement of Liver Qi and especially upon the Heart Qi's ability to circulate it. Clinically, what often appears like a true Blood deficient condition is actually the Heart's inability to deliver it to where it must go.

There is a constant competition for Liver Blood by the above-mentioned functions throughout life. Premenstrually, this competition is exacerbated since the stored Liver Blood's principal function is the preservation of the species, the ability to get pregnant. Especially when the Liver Qi's priority is to move Blood down, and if it is not storing sufficient Blood to supply its other obligations or cannot move it due to insufficient or stagnant Qi, musculo-skeletal symptoms will develop. This is especially so for areas that require Liver Qi to overcome gravity such as to the head. Symptoms can include a dull headache, visual problems such as blurry vision, diminished night vision and orthostatic hypotension [dizziness], all blood deficient symptoms.

Similarly, there can be muscular spasms, numbness and tingling due to the deficiency of Blood to the muscles, ligaments and tendons. Palpitations and labile emotions and problems with concentration ensue from deficient Blood to the Heart as well as not being comfortable in the moment, receptive and responsive, reduced softness and self-awareness. vi Insomnia, marked by

awakening after about five hours sleep and returning to sleep within an hour is another symptom of Heart Blood deficiency. This is a paradoxical condition since the Heart rests best when there is less Blood. However, there must be enough to maintain life throughout the night and when what is used for that purpose depletes the Blood to maintain Heart muscle the Liver urgently releases Blood to the Heart and causes temporary waking until homeostasis is restored.

Over the past twenty-five years Fibromyalgia is a common presenting symptom often associated with Chronic Fatigue Syndrome. From the beginning I found that the condition involves the nourishment of nerve endings ordinarily supplied by Liver Blood that also nourishes all peripheral nerves including the autonomic nervous system, as well as ligaments, tendons and muscles. [I find that the Spleen controls the connective tissue (hence non-pitting edema) and not muscles as the literature indicates]. This deficit in the supply of Blood to the peripheral nerves makes them more sensitive and irritable, experienced as pain when these nerves are stimulated by pressure. The decreased circulation can lead to accumulation of fluid and pressure on nerve endings.

Also significant is that the supply of Blood to the surface is more often due to a Heart-circulation deficiency. There may be enough Blood stored by the Liver but not a sufficient delivery system to adequately supply this Blood to the superficial nerves. The solution I found consistently effective is enhancing either Heart qi and/or Liver Blood. This is most effectively done with an herbal formula such as the following that also includes surface releasing pain reducing herbs: Panax (American) [xi yang shen 9gm], Ophiopogon [mai men dong 9gm], Schizandra [wu wei zi 6gm], Zizyphus Seed [suanzaoren 9gm], Biotae Seed [bai zi ren 3gm], Polygonum [ye jiao teng 6gm], Euphoria [long yan rou 6gm], Albizia [he huan pi 9gm], Poria Cocos [fu shen 10 gm], Craetegus Fruit [shan zha 6gm], Succinum [hu po 1gm], Glycyrhiza [gan cao 5gm], Zizyphus Fruit [da zao 5-20gm], Panax [ren shen 9gm], Panax (Korean) [ren shen 4.5gm], Codonopsis [dang shen 15 mg], Aconitum [fu zi 0.25gm], Cinnamomum [rou gui 3gm], Salvia [dan shen 6gm], Curcumae Tuber [yu jin 6gm], Ligisticum [chuan xiong 9gm (circulation to the brain)] Notopterygli [Qiang Huo 6gm], Corydalis [Yan Hu Suo 6gm]

This formula treats Heart shock and offers several herbs specifically for Heart qi, not all of which are always needed and from which one could pick one or two depending upon the degree of the deficiency, such as ren shen, codonopsis and Korean ginseng. Fu Zi is also optional, indicated especially where there is Heart yang deficiency. Other herbs take out damp generally and phlegm blocking the Heart orifices. Acupuncture would include the points for Blood including BL-11, BL-17; ST-37 ST-39; GB- 39, and for circulation of Blood and for the Heart extra channel, the Chong Mai [especially useful with the upper Kidney Points and Heart-Kidney disharmony]. The Yin Wei and Yang Wei help when people feel stuck and the latter is useful for exterior conditions [for concomitant CFS other treatments are indicated]. Moxa on the back-shu points are especially useful.

Another consideration is a Retained Pathogen that is diverted from vital organs by the divergent channels [mostly to joints] and the Muscle-Sinew channels to muscles, ligaments, tendons and the connective tissue. Again, the nerve endings in these tissues become inflamed and

hypersensitive. Here the extra channel the Yang Wei is especially useful provided one has first eliminated the retained pathogen.

LIVER AND MENSTRUATION

The Liver stores the blood and is responsible for supplying blood to muscles, ligaments, tendons and peripheral nerves as well as supplying it to other organs, especially the Heart. The Liver is also known to begin the menstrual cycle when it moves some of its stored blood to the uterus.

The Liver is also the master of Qi both for moving Qi, as well as containing it, and as explained in Dragon Rises, Red Bird Flies it also controls the direction of Qi. The Liver recovers the Qi and is known as the 'second wind', when at the end of the day one is tired [around four PM] and experiences a resurgence of energy. It is my contention that the exigencies of this premenstrual period are primarily a function of the integrity of Liver Qi.

Premenstrual symptoms include tension, anxiety, irritability, crying, mood swings, parietal headaches, abdominal bloating and cramps, breast tenderness, insomnia, joint and/or muscle pain, fatigue, acne and eye problems. Let us examine them from the perspective of Liver function whose role in moving blood to the uterus in the premenstrual time supercedes all of its other functions since from nature's point of view, the perpetuation of the species is paramount.

With regard to its role as the detoxifier we note that toxins that cannot be easily excreted become Retained Pathogens. One of the principal places that toxins, physical and emotional, are retained is in the blood that is stored in the Liver. And is the movement of the Qi that continues to eliminate it from the body. All of these functions depend upon the integrity of Liver Qi.

Skin problems during the PM time are a function of the Liver's role in detoxification. Again, if the Liver is unable to eliminate toxins, they will stay in the blood or in other tissues [joints, muscles]. From the blood the body tries to excrete toxins through the skin causing skin rashes. If there is also a damp condition the rash will have some pus as with acne, which is common premenstrually.

Prior to the menstrual period, the Liver, in addition to all of the above, has another heavy assignment, to move blood to the uterus. If Liver Qi is sufficient, if it is not stagnant and can move the blood with ease and force, there is little physical or mental premenstrual discomfort.

Breast tenderness is attributed to stagnant Liver Qi escaping and 'attacking' [harassing] vulnerable organs and areas. While this symptom implies Liver Qi stagnation, the escape of Liver Qi can be attributed either to a surfeit of repressed Liver Qi or to an inability to contain what there is, however little, due to Liver Qi deficiency.

The predominant headache is dull primarily from blood deficiency, and the deficiency is due to the urgent need for the Liver to move blood to the uterus, leaving less for other functions. Other symptoms such as muscle pain have the same source since they also depend upon Liver blood for efficient function. Likewise, Liver Blood nourishes the ocular muscles and its deficiency can account for ocular difficulties during the premenstrual phase.

The movement and direction of Qi is a function of Liver Qi that stimulates peristalsis, so that abdominal bloating and cramping in the PM stage is again attributable to Liver Qi deficiency. Since the Liver recovers the Qi, when it occupied with moving the blood to the uterus there is less for this purpose and fatigue comes more easily.

Migrating joint pain is due either to deficient Heart-Circulation improved with rest and exacerbated by fatigue or due to Liver Qi deficiency-stagnation. The latter is made worse with stress and again is due to either to a surfeit of repressed Liver Qi or to an inability to contain what there is, however little, due to Liver Qi deficiency.

Insomnia is a common complaint at this time associated with Liver blood deficiency in which people wake up after four to five hours of sleep and then return to sleep fairly quickly, within a half-hour. Difficulty getting to sleep is usually due to Heart Qi Agitation that can be due to the Liver Qi being unable to serve the Heart with sufficient blood when the Qi is deficient and the blood is going to the uterus.

Finally there are the emotional issues listed above most of which I believe occur or are exacerbated at this time due to deficient Liver Qi being, so drained by it's work moving blood to the uterus, that it is unable to serve one of it's main functions of containment of emotion and their appropriate expression through the medium of Heart Qi and Blood.

It is impossible to live in this world without some daily frustrations that cannot be directly confronted without some unacceptable consequence that requires them to be contained. Liver Qi is so pressed during the PM time frame moving blood to the uterus that any Liver Qi deficiency will manifest itself in a lesser ability to contain emotions and therefore more frequent and greater experience of anxiety, irritability and mood swings.

As expressed in an earlier paper the principal Liver problem in Chinese medicine in our time is Liver Qi-Yang deficiency and not Liver Stagnation^{vii}. Liver Qi, as with the Qi in any organ will determine the viability of all of its other functions. Even the capacity to stagnate Qi depends upon the strength of Liver Qi.

And in fact the commonly used formula for Liver Qi stagnation, xiao yao san consists primarily of nourishing herbs including dang gui, bai shao, bai zhu, fu ling and gan cao and contains only one herb to move stagnant Qi, chai hu. It is primarily a Qi and Blood nourishing formula. This reinforces the thesis that the real concern regarding Liver function concerns Qi-Yang deficiency.

If Liver Qi is deficient it cannot store the blood or supply it to the other organs, perhaps most importantly the Heart that depends on the Liver for this aspect of its function than the other organs. The Kidney makes its own blood through the marrow; the Lungs blood function is to aerate it and depends on Lung and Kidney Qi to grasp the oxygen; the Spleen creates blood through its digestive function.

We have described how the process of moving blood to the uterus in the premenstrual phase of the cycle supercedes on all other Liver function at that time and depends on the integrity of Liver Qi, and how, if that Qi is deficient, blood does not move sufficiently to the uterus as well as to all

of the other areas that depend on Liver Blood. We have also discussed the symptomatic consequences.

RELATED OBSERVATIONS

The 'Split Pulse', wherein the radial artery actually bifurcates in an individual position (or entire side) is commonly encountered clinically in the Left Middle position in recent years.^{viii} First reported by Efrem Korngold in the Right Middle Position in a patient with a fatal brain tumour, it has been observed by me and others numerous times and reported in a recent paper.^{ix} This finding is often associated with a preoccupation with death, frequently with suicide, and one's own or loved one's own serious illness. Some have reported the 'Split Pulse' after a 'near death experience'. The amazing and puzzling phenomenon is that when the obsession with death ends the pulse returns to a single vessel, described in the article cited just above. As for the mechanism of this mysterious and understandably unbelievable experience I have no explanation. If I and others had not experienced it clinically many times I would not believe it possible. It defies physiology as I learned it as a physician, yet it happens. An explanation by my colleague Ross Rosen who has extensive experience with this finding is included in the endnotes and is one which I cannot deny or is a reflection of my own thoughts.^x

DISCUSSION

The modern literature of the Liver in Chinese medicine is primarily preoccupied with Liver Qi stagnation as a pathological condition to be overcome. The fact is that Liver Qi stagnation and its consequences are a poorly understood phenomena, that I have attempted to elucidate. The capacity for the Liver to stagnate is reframed as the capacity for the Liver to 'contain', as its natural function necessary to a socially stable culture, and is a measure of our ability to maintain focus to complete a task without being distracted, to move deliberately forward or make an orderly retreat as expounded in *Dragon Rises, Red Bird Flies*.^{xi} The condition of Liver Qi stagnation is only an excess of a positive function of the Liver, the ability to contain emotion that makes harmony in life possible. That this necessary capacity may be carried to excess by life conditions that create excessive stagnation and its undesirable consequences does not obviate that this a good and necessary function in itself. One can reflect on all pathology as an exaggeration of natural functions.

There is much more serious Liver pathology abroad in the land from the various etiologies mentioned above. The sad and terrifying fact is that the etiologies of the principal Liver pathologies, the 'cold substances' and toxins are identified as unremarkable and acceptable, even indispensable and desirable by a large segment of the population. Marijuana has slipped into our consciousness and ethos as an ordinary consumer product along with ice cream or jelly-beans. Students in my class consider my concerns with the 'cold substances' as rather quaint.

I have written above and repeat for emphasis, that toxins exist in every phase of our existence, air, food, water, clothing, electromagnetically so that it is estimated that between fifty and one hundred and seventy substance are in our blood that were not there sixty years ago. To a large measure these are fragments of long chain hydrocarbons derived from petro-chemical [oil] compounds manufactured by huge and powerful chemical companies. Toxicity of unsustainable levels is endemic in the entire world accepted today as necessary to our economic well-being, but hardly sustainable or necessary to our physical survival. Our findings indicate that this stress on

the Liver, our primary detoxifying organ, is untenable and incompatible with health, and even with the survival of the individual and entire human race, perhaps all life.

CONCLUSION

This paper presents a new view of the function of Liver Stagnation as a necessary natural function involving the ability to contain and attempts to correct misapprehensions concerning the nature of Liver Yang Rising. It presents pathological Liver conditions heretofore not recognized in the literature, Liver Qi and Yang deficiency, the consequences of widespread changes in social behavior in the last half of the twentieth century that drains Liver Qi-Yang, in the form of the extensive use of substances of abuse and a massive drug culture.

POSTSCRIPT

Since writing this paper, 'The Liver' my attention has been drawn to an excellent article by Dr. Rihui Longxii Chief of Staff at The Classical Chinese Medicine Department of the National College of Naturopathic Medicine, who extends a similar thesis concerning Liver Qi-Yang deficiency. In this paper he lists many citations from the classics and offers many herbal formulas. Like my self the emphasis for the resurrection of Liver Qi-Yang centers in large doses [30gm] of Huang Qi [Astragalus]. He mentions Gui Zhi [Cinnamon Cassiae] and Fu Zhi [Aconite] as important herbs and uses Xiang Fu [Cyperus] which I prefer to Chai Hu [Bupleurum] to move Liver Qi. While he recommends qigong as I do, he does not mention Dan Shen [Salvia] that I find to be a principle herb for this purpose.

References

- i Hammer, Leon I, M.D.; Chinese Pulse Diagnosis: A Contemporary Approach; Eastland Press, Pg 203-209
- ii Ibid, P. 292
- iii
- iv Hammer, Leon I.; Dragon Rises Red Bird Flies; Eastland Press, Chapter 14
- v. Chinese Pulse Diagnosis: A Contemporary Approach; Eastland Press, P. 574
- vi Kaptchuk, Ted; Lecture in mid 1980s
- vii Hammer, Leon I.; The Liver; Medical Acupuncture, August 2009
- viii Long, Rihui; Journal of Chinese Medicine; 2003
- ix
- x
- xi aetiology
- xii Hammer, Leon I.; Dragon Rises Red Bird Flies; Eastland Press, 2005; Chapter 9
- xiii Long, Rihui; Journal of Chinese Medicine; 2003

ⁱ Hammer, Leon I, M.D.; Chinese Pulse Diagnosis: A Contemporary Approach; Eastland Press, Pg 203-209

ⁱⁱ Ibid, P. 292

^v Hammer, Leon I.; Dragon Rises Red Bird Flies; Eastland Press, Chapter 14

Chinese Pulse Diagnosis: A Contemporary Approach; Eastland Press, P. 574

^{vi} Kaptchuk, Ted; Lecture in mid 1980s

^{vii} Hammer, Leon I.; The Liver; Medical Acupuncture, August 2009

^{xi} Hammer, Leon I.; Dragon Rises Red Bird Flies; Eastland Press, 2005; Chapter 9

^{xii} Long, Rihui; Journal of Chinese Medicine; 2003