Carpal Tunnel Syndrome

CTS
the dot com disease

Characterized by pain and numbness on palmar side – median nerve is compressed at the wrist leading to pain, paraesthesias and muscle weakness in forearm/hand. More common in women than in men, peaking around 42 yo. Risk is about 10% of adult population.

Anatomy:
Origin of enervation of the upper extremity is the brachial plexus at the neck which branches into the musculocutaneous branch, the axillary, median, and ulnar branches of the nerves.

The median nerve is enervated by C5, C6, C7, C8 and T1 nerves. First branch of the brachial plexus is musculocutaneous. Middle/median nerve is axillary and radial. Outer is radial nerve (SI 8 area) and enervates part of ring finger and all of the little finger.

Note that in the drawing above the sensation of the median nerve is the thumb, index, middle and medial part of the ring finger.
Compression of the nerve can occur at the spinal nerve exit, the shoulder, elbow or wrist. When it occurs at the wrist it is compressed at the transverse carpal ligament which runs just below this ligament.

Median nerve damage expresses as:
- Reduced or abnormal sensation in 1st 3 ½ fingers – thumb, index, middle, half of the ring.
- Often cannot flex the wrist with ease.
- Long term compression will result in middle/index finger and thumb extension. Also see muscle atrophy at the palm, thenar eminence. This also results in what Dr. Luo called “Benediction hand” – looks like a permanent blessing from a catholic saint.
- Opposing motion between index and thumb is impaired – patient cannot grasp and hold a sheet of paper between index and thumb.

Some tests for carpal tunnel syndrome:

<table>
<thead>
<tr>
<th>Test</th>
<th>Protocol</th>
<th>(+) for CTS if:</th>
</tr>
</thead>
</table>
| Wrist flexion test                  | Have patient make a loose fist w/ thumb under the other 4 fingers; flex wrist as much as possible  
- Flex wrist and rotate slightly toward little finger and hold for 40 seconds. | Numbness, tingling, or shooting pain will occur all the way to the finger tip or to the upper arm (medial side); or in the thumb, index, middle and radial side of ring finger. |
| Forearm Block Test / Compression Test | Take bp and use readings as a gauge (i.e. 110/80); Move bp cuff to distal part of forearm: apply pressure w/ in range of the person’s bp (should be between 135-85). Maintain pressure for 30 s.  
*Do not use too much pressure nor maintain pressure for >30 sec. | Shooting pain to palm, fingers, or upper arm will occur  
[Pumping bp cuff too high or for too long can cause pseudo-(+) results] |
| Tinel test                          | Tap forearm & wrist along the path of the median nerve (pericardium channel)  | Tingling or shooting pain                                                      |
| Phalen test                         | Have patient hold hands w/ dorsal sides of hands together (as in an upside-down, backwards prayer position) — hold for at least 1 minute. | Within 1 minute: strong symptoms of tingling, pain, shooting pain will occur    |
| Check little finger                 | When symptoms flare (at any time), ask patient to pinch off little finger to see if it is involved | The little finger will not get numb or tingle w/ CTS  
*If the little finger is also affected, it may be other structural or nerve problems. |
| Electromyography / Nerve conduction study | Performed by specialist (M.D.)  |                                                                             |
Channels involved in CTS:

- Heart
  Heart is a fire organ, feels heat signs the most. Will often see insomnia in the patients whose heart channels are affected.

- Lung
  Phlegm and damp are very uncomfortable for the lung.

- Pericardium
  Summer heat affects the pericardium channel strongly.

Heavy repetitious wrist use generates heat and stagnation, affecting heart and pericardium. Then there is swelling and water retention so there is now damp and heat, affecting pericardium. If a patient has damp retention anyhow they are more likely to acquire CTS.

**TCM Mechanism**

CTS is primarily pain. Pain in TCM is either

- Malnutrition
  - Qi and blood
  - Lung/skin
  - Spleen/muscle
  - Kidney/bone
  - Liver/tendon

- blockage of the meridian
  - Qi stagnation
  - Blood stasis
  - Phlegm/damp

Rest is an important treatment.

**TCM Patterns and treatment**

**Qi and Blood Stagnation – Bi – Blockage**

This is an acute stage. Often worse at night.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Promote Qi and Xue Circulation, Stop Pain, (Unblock Meridians)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Tingling or sharp pain or numbness on thumb, index, middle, and radial half of ring fingers - pain may radiate to upper arm or amput</td>
<td>P-4, 6, 7, 8 HT-7, 8 LU-9, 10 SI-4</td>
</tr>
<tr>
<td>- Local weakness, spasm and inflammation of the wrist joint, local inflammation/swelling around wrist joint</td>
<td></td>
</tr>
<tr>
<td>- May be d/t bone fracture or sprain, or injury to tendon</td>
<td></td>
</tr>
<tr>
<td>- If severe: hyposensitivity or hypersensitivity (anesthesia), no feeling</td>
<td></td>
</tr>
<tr>
<td>- Symptoms aggravated at night or when temperature of hand is higher</td>
<td></td>
</tr>
<tr>
<td>- Also aggravated by overworking</td>
<td></td>
</tr>
</tbody>
</table>

*Determine whether pain is more Qi Yu or Xue Yu type*

| T: Normal with thin white costing | P: Tight or choppy |

Many points are ashi’s around the wrist.
P 7 very helpful. Avoid the tendon and median nerve here.  
HT 7  
LU 9  
LI 5 also  
SJ 7 also when acute/swollen. Can bleed here.

**Qi and Blood Deficiency – Wei – Flaccidity**  
This is chronic, qi blood deficiency. 6 months or longer. Pain is milder than it is in the sharp/acute stage.

<table>
<thead>
<tr>
<th>Chronic = more than 6 months</th>
<th>Tonify Qi, Nourish Xue, Promote Qi &amp; Xue Circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dull pain or local weakness – atrophy of major thenar eminence &amp; thumb with severe local weakness (cannot hold/grasp cup)</td>
<td>P-6, 7; LI-4, 5; LU-7, 9, 10</td>
</tr>
<tr>
<td>Severe ones may have impairment of function of thumb – thumb cannot abduct on palmar side (cannot make thumb perpendicular to palm).</td>
<td>SI-5; SI-3, 5</td>
</tr>
<tr>
<td>Patient can’t hold objects, weakness</td>
<td>ST-36 (Wu’s “influenst pt for muscle”)</td>
</tr>
<tr>
<td>Other Qi and Xue Xu signs</td>
<td>GB-34</td>
</tr>
<tr>
<td>T: Pale with thin, white coat</td>
<td>Massage is better than acupuncture</td>
</tr>
<tr>
<td>P: Thin and weak</td>
<td><em>Zheng Gu Shui</em> – use only for 3-5 wks</td>
</tr>
<tr>
<td>&gt; <em>Ru Yi Jing Huang San</em> / “Happy Golden Yellow Powder” (from <em>Wai Ke Zhen Zong</em> Formula Book)</td>
<td>can use as external wrap</td>
</tr>
</tbody>
</table>

Could add cervical jia ji points as well.

Can choose GB 34 for tendon/muscle. LV 8 for blood deficiency. SP 3.

Less heat in this syndrome. Could use the lamp? Don’t want to ge it too close though. You can use hong hua and tao ren to move the blood.
Sciatica

So this is kind of a repeat from the Low Back Pain lecture. As a matter of fact, if you remember, basically the whole damn quiz 1 was about low back pain. A lot of the material is similar.

This is actually a set of sx that can be caused by general compression and or irritation of one of 5 nerve roots coming off of the lower spine/sacral area. Could be tissue irritation or could be a compression of the nerve. Pain is felt in

1. lower back
2. buttocks
3. various parts of leg and foot

Primary sx is pain. May also experience loss of muscular control in varying degrees, numbness, weakness.

The sciatic nerve is actually a bundle of spinal nerves which emerge from L2 – L4 and joint together in to a large nerve. (see diagram to the right.)

10-20 percent of people get sciatica pain. 40% of people in the USA that get it are under 60 years of age. Occupation, overweight, and high fat diet can predispose one to sciatica. Pregnancy incidents of sciatica is not uncommon either as a result of pressure on the body which changes and increases as the baby grows.

Chinese herbs dosed intramuscularly with a syringe helps greatly as does electrical stimulation.

Sciatic nerve root (emergence of sciatic nerve at spinal foramen) can be affected or the ramus/branch can be affected.

Some causes of sciatica:
1. Spinal disc herniation
   Blocks the spinal columnar space – root blockage
2. Spinal stenosis
3. Piriformis syndrome.
   Branch blockage
4. Sacroiliac (SI) joint dysfunction
5. Trigger points
6. Pregnancy

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TCM Etiology and Mechanism

1. Invasion of Wind-Damp-Cold
   Especially damp and cold. Wind tends to affect the upper body more than the lower. That said, if
the pain travels from place to place, this is wandering Bi and is associated with Wind. Use GB
31 for this.

   While Bladder and Gallbladder are most commonly involved in sciatica, the Dai channel may be
involved as well.

Jia ji – treat the lumbar since this is where the sciatic nerve originates. Generally, use L4-L5.

TCM Diagnosis and treatment

Basic points:

<table>
<thead>
<tr>
<th>Huatuo's Jia ji points for L1-L5</th>
</tr>
</thead>
<tbody>
<tr>
<td>UB-54; GB-30; UB-40</td>
</tr>
<tr>
<td>UB 57 also. If pain is lateral, GB 31, 34, ST 40 (lateral leg)</td>
</tr>
<tr>
<td>Add auricular point on the inferior antihelix crus.</td>
</tr>
</tbody>
</table>

Invasion of Damp Cold or Wind Damp Cold
Better with movement. Can be characterized by just soreness and heaviness without the cold. Often a “gift” from the environment. If there are Dai Channel problems, open the Dai channel. Add GB 26 for this and to stimulate Dai.

- Acute onset with Hx of camping, skiing, or catching cold
- Cold pain on low back, radiates down GB or UB meridians
- Desire for warmth
- Exercise alleviates symptoms (if it worsens it, then it is a xu syndrome: exercise promotes yang, opens circulation)
- Heaviness sensation around the waist “like sitting in cold water” or “carrying 5000 coins around waist”
- Arthritic-type symptoms

P: Superficial, tight; or deep slow & soft
T: Normal

Remove Ext. Pathogen Cold-Damp, Open Dai Meridian, Stop Pain

- Moxa / warming therapy
- SJ-5 & GB-41 for Dai - open & stimulate 1st

If pain is GB meridian add: GB-31, 34, 40
If pain is UB meridian add: UB-36, 60

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Qi and Blood Stagnation
Chronic problem. Pain is more fixed, worse at night.

- Qi: trauma or acute muscle strain (Fx disorder)
- Xue: bruising or disk rupture (x-ray)
- Acute onset; Hx of trauma; excess lifting
- Sharp stabbing or needling pain on lower back which radiates to GB or UB meridians; fixed pain
- Worse at night; exercise can alleviate pain

T: Normal or purple
P: Deep, thin or hestant/choppy

Yin evil cause Qi and Blood stagnation in Bladder and Gallbladder channels.
If there is a choppy pulse and stasis, open the Du channel to melt and warm the stasis.

Kidney Deficiency
Chronic problem – pain isn’t constant, but intermittent.

- Chronic onset; intermittent on-off low back pain; dull pain; weakness of low back & knees
- KID Xu symptoms; fatigue; ringing in ears; etc.

T: Pale (if qi xu); red & small (if yin xu)
C: White; or yellow
P: Deep, thin, weak or fast (if yin xu); esp. in rear positions

Basic points +
UB-23, 52
REN-4, 6; KID-3; SP-6
Moxa or warm needle
Electro-acupuncture (good for chronic)
*Herbal therapy is very important
> Du zhong (very good for low back pain)

To some extent, most sciatic patients have some level of KI Qi xu.
Du Zhong is a Yang tonic…just studied it in Single Herbs 3. Weak/sore/painful low back due to Kidney xu, especially Yang xu. Also tonifies Liver and calms fetus.
Lateral Epicondylitis

Or Tennis Elbow. This affects the lateral side of the elbow. Becomes painful and tender. Idiopathic, self limiting, often in middle age (35-60) and resolves in about a year. Rarely seen over the age of 70. Due to overuse and repetitive motion, mostly extending the elbow too much in a posterior direction.

Incidence is 1.3%. Often related to occupation and hobbies/sports.

Tongue and pulse don’t help you with musculo-skeletal disorders such as this. This problem expresses with a very identifiable location of pain. Diagnosis of lateral epicondylitis is by orthopedic tests.

Tennis Elbow test -
   a. Tennis elbow test: flex wrist & elbow joints with palm towards chest
   b. Begin rotating both wrist & elbow, palm downwards and outwards
   c. Extend elbow & wrist joints – stretching of extensor group of muscles
   d. Check where pain is

Resistant Wrist Joint test – (this test will distinguish between lateral and medial epicondylitis)
   a. Flex wrist joint (90°) – pressure on dorsal aspect of hand (by practitioner)
      - Ask patient to extend/straighten joint while applying pressure – pain will be felt on external epicondylitis (LI-11) \textbf{\textit{external epicondylitis}}
   b. Extend wrist joint – pressure on palmar aspect of hand (by practitioner)
      - Ask patient to flex/straighten joint (push down) while applying pressure – pain will be felt on the medial epicondylitis (SI-8) \textbf{\textit{medial epicondylitis}}

Differential Diagnosis and Treatment

Basic points:

\begin{itemize}
   \item \textit{Pts on the 3 Yang Channels of the arm:} \textit{[this set of pts also balances pts on medial and lateral sides of arm]}
   \item LI-11, 12; SJ-5, 8, 10; SI-3, 6, 8
   \item [SJ-8 = “3 yang junction” = a good pt for any disorder of the arm]
\end{itemize}

LI 11, LI 12 and slightly higher, SJ 5, SI 6. Probably best to do few points and on the lateral side of the body. First find the really tender point. If pain is high, use a couple or three needles surrounding it rather than needling into the painful spot. If the pain is not so severe, needle the tendon. Often good result. If very acute, use e-stim.

Point injection of herbal preparation on the tendon is effective as is surrounding the tendon (which is safer). Biomedicine uses steroids in this way as well.
Cat’s completely uncalled for 2 cents worth:
Explore Master Tung points for this condition when it’s really tender. That way you
don’t have to needle into the area, but the effects are dramatic.

Invasion of WC or WDC

External condition, may or may not have chills/fever. Often due to environment, cold water, etc.
Moxa the local points and works well. If too tender, again, don’t go directly on it.

- Acute onset w/immediate Hx of camping, catching cold; sl; fever; aversion to cold; spasm
  of elbow joint; dull pain & tenderness around LI-11; SJ10; LI-12
- Pain reducible by warn therapy
- If combo with damp: swollen & heaviness
  sensation

T: Normal or white, greasy
P: Superficial tight or soft

| LI-4, LU-7; GB-20; UB-12, 13 |
| Local points with moxa |
| Or special Tx w/sulfur: slice ginger into pieces & poke holes – place a cone of sulfur & light the cone – when the patient feels warmth, press “smash” the cone of sulfur down onto ginger w/ (tongue) depressor |
| Herbal patches: 701 or Saloupas |

Qi Stagnation and Blood Stasis

Acute. Often traumatic accident.
Use Moxa or open the Du channels to melt the stasis.

- Acute onset w/Hx of accident; dull pain or fixed
  pain around joint; with or without swelling;
  bruise or not; pain could be worse at day (qi) or
  night (blood)
- Limitation of joint movement

T: Normal or purple w/o spots
P: Hesitant or choppy

| Promote qi & blood circulation; Remove blood stasis |
| + SJ-5; UB-40, 17; SP-10; GB-34 |
| Blood letting w/7-star needle |
| Herbal patches: 701 or Saloupas |

Qi and Blood Deficiency w/Empty Meridians

Often due to overwork. Chronic. Not so severe, intermittent pain.

- Chronic onset
- Dull pain around elbow joint; off & on; worse at
  end of day or after work; alleviate by resting;
  numbness of forearm; local weakness

T: Normal or pale face, tongue; thin white coat
P: Thin, weak

| GB-34, 39; UB-11; ST-36 |
| Do not use plaster patches |
| Alternating heat/cold therapy |