TCM Pulse diagnosis

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Pulse diagnosis

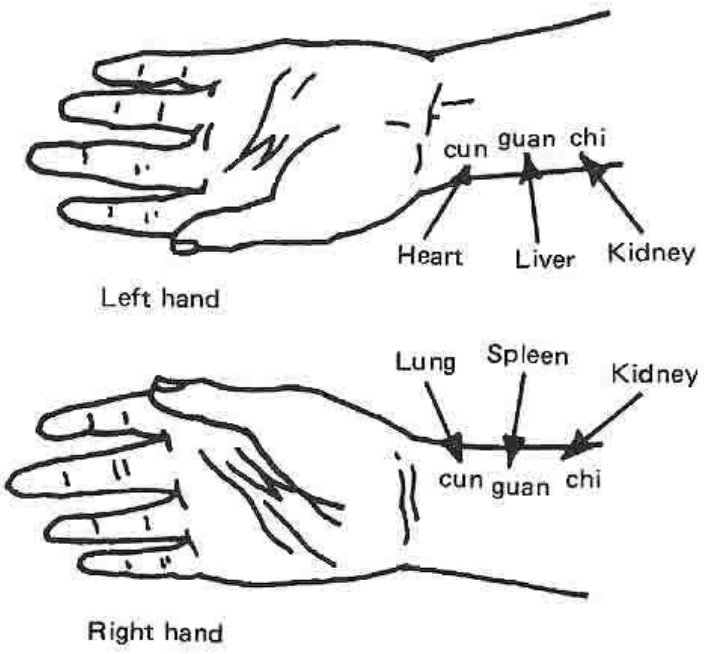
1.Regions and methods for taking pulse

(1)Regions for taking pulse

Cunkou, also known as "Qikou" (opening of Qi), is the usual pulse taking region, refers to pulsation of radial artery on the wrist. Cunkou is located on the pulsation of the lung meridian where Qi and blood in the lung meridian flows by. Besides, Qi and blood from all viscera circulates through the lung and converges over Cunkou. The lung meridian starts from the middle Jiao and converges with the spleen meridian. Since the spleen and the stomach are the sources of Qi and blood and function as postnatal base of life, Cunkou can reflect the conditions of the gastric Qi. On the other hand, the lung meridian is the meridian from where all the other meridians begin and end their circulation, because the circulation of Qi and blood in all the twelve meridians starts from and ends at the lung meridian, finally converging over Cunkou. That is why Cunkou can reflect the conditions of all viscera, Qi, blood and meridians in the body.

Pulse over Cunkou is divided into three parts: **Cun, Guan** and **Chi**, the part slightly below the styloid process of radius is Guan pulse, the part anterior the Guan pulse is the Cun pulse, and the part posterior the guan pulse is the Chi pulse. Both hands have three divisions of pulse. i. e. Cun pulse, Guan pulse and Chi pulse. So altogether there are six divisions of pulse.

Clinically the correspondence of Cunkou pulse and the viscera is decided according to the description in Neijing, that is the upper pulse (Cun pulse) corresponds to the upper part of the body and the lower pulse (Chi pulse) corresponds to the lower part of the body:



The left Cun pulse is corresponding **heart and Tanzhong** (the part between the breasts).
The left Guan pulse is corresponding **liver and gallbladder**.
The left Chi pulse is corresponding **kidney and the lower abdomen.**
The right Cun pulse is corresponding **lung and thorax**.
The right Guan pulse is corresponding **spleen and stomach**.
The right Chi pulse is corresponding the **kidney and the lower abdomen.**

Such a theory about the relationship between the Cunkou pulse and the corresponding viscera is significant in clinical diagnosis. However, the application should be flexible and based on the synthetic analysis of the data obtained from the four diagnostic methods.

(2) The methods for taking pulse

The following points should be borne in mind in taking pulse.

Time: Early morning is the ideal time for taking pulse because the conditions of the pulse are not affected by food and other activities. However, this requirement is difficult to fill in clinical practice. To ensure accurate pulse taking, the patient should rest for a while to tranquilize the heart and breath before pulse taken. The pulse should be taken at least for one minute each time in order to correctly examine the conditions of the pulse.

Normal and calm breath: Normal and calm breath means that the doctor keeps his or her own breath quiet to examine the pulse of the patient and calculate the beat of the pulse according to his or her own cycle of exhalation and inhalation. Healthy people breathe 16 - 18 times one minute under normal conditions. And the pulse beats 4 - 5 times in a cycle of exhalation and inhalation, about **60 - 90 beats per minute**.

Posture: The patient sits erect or lies in their back and the forearms stretches out naturally to the level of the heart. The wrist is put straight, the palm turns over and the fingers are relaxed to extend the Cunkou region and enable Qi and blood to flow freely.

Arrangement of fingers: The three fingers of doctor are put at the same level and slightly arched to press the pulse with the belly of the fingers. The middle finger presses on the guan pulse, the index finger presses on the region anterior the guan pulse (distal to the heart region), and the ring finger on the chi pulse posterior to the guan pulse (proximal to the heart region). The arrangement of the fingers is made according to the conditions of the patient's arm. In diagnosing diseases in children, "one finger is used to press just the guan pulse". It is unnecessary to divide the pulse into three parts in this case.

General pressure and single pressure: General pressure means to press the pulse with three fingers to distinguish the conditions of Cun, Guan and Chi pulses on both hands. Single pressure means to examine the pulse on one hand with just one finger to differentiate the states of Cun, Guan and Chi pulses. Clinically these two methods are used according to the pathological conditions in question.

Lifting, pressing and searching: Lifting, pressing and searching refer to flexible pressure of pulse in order to distinguish the conditions of pulse.

Lifting (Ju) means light pressure; **pressing (An)** means heavy pressure; and **searching (Xun)** means mobile moderate pressure which is used to look for the most obvious region of the pulse. In the procedure of diagnosis, doctors should pay attention to the use of these three methods to distinguish the variations of pulse.

Exam the pulse conditions: The pulse conditions are felt by doctor's fingers. The examination of pulse conditions means to distinguish the features of pulse according to the position of pulse, the rhythm of pulse, the shape of pulse and the strength of pulse.

2 Normal pulses

Normal pulse refers to the pulse conditions of the healthy people.

(1) The shape of the normal pulse

The normal pulse is neither floating nor sunken, neither fast nor slow, sensible with moderate pressure, usually beating 4 - 5 times in a cycle of breath (about 60-90 beats per minute), gentle in sensation, powerful in rebounding, moderate in size, regular in beating and varying with physical activities and environmental changes.

(2) The characteristics of the normal pulse

The normal pulse is marked by gastric qi, spirit and root. **Gastric qi** means that the pulse is located at the middle, neither floating nor sunken, and regular in beating, moderate in size, gentle in sensation and floating. **Spirit** means that the pulse is soft, powerful and rhythmic. **Root** means that the chi pulse is powerful and constantly beating under heavy pressure.

Gastric qi, spirit and root are three basic features of the normal pulse which complement each other and cannot be separated. Simultaneous appearance of the three reflects strong functions of the viscera and sufficiency of qi and blood.

(3) Main factors to affect the normal pulse

The normal pulse may vary with physiological and psychological factors in the human body and the environmental factors outside.

Age, sex and body shape: The pulse is usually small and fast in children, smooth and slippery in young people, taut and hard in old people, moderate and powerful in men, soft and thin in women, slippery and fast in pregnant women, sunken and thin or soft and thin in obese people, floating and large in lean people, long in tall people and short in small people.

Daily life and psychological factors: The pulse appears slippery, fast and powerful after movement, eating and drinking of wine, weak with hunger, taut in anger and irregular in fright.

Seasonal, alternation of day and night and geographical factors: The pulse appears slightly taut in spring, slightly full in summer, slightly floating in autumn and slightly sunken in winter; slightly floating and powerful in the daytime and slightly sunken, thin and slow in night; sunken and energetic among the people in the north and soft among the people in the south.

Besides, the changes of the anatomic position of the radial artery may shift the pulse normally at the Cunkou region to the dorsum of the hand from the chi region, known as **oblique flying pulse** 斜飞脉. The pulse, shifted to the back of the Cunkou region, is called **ectopic radial pulse**.

All the factors above mentioned may affect the conditions of the pulse. However, if the pulse still keeps gastric Qi, spirit and root, it is still the normal pulse

3 Abnormal pulses

There are five elements of abnormal pulse diagnosis:

Position---deep or superficial

Frequency---rapid or slow

Morphology---wide or thin, long or short, hard or soft, fluent or not

Strength---strong or weak

Rhythm---regular or irregular

(1). According to depth:

1. Superficial pulse (Fu Mai)

Features: **Sensible under light pressure**, weak and constant beating under heavy pressure. It is marked by superficial beating.

Clinical significance: Floating pulse indicates **external syndrome**, floating and powerful pulse signifying external excess syndrome while floating and weak pulse manifesting external asthenia syndrome. Floating pulse can also be seen in internal asthenia syndrome due to consumption of essence and blood in chronic disease and external floating of deficient Yang.

2. Deep pulse (Chen Mai)

Features: **Sensible only under heavy pressure**.

Clinical significance: Indicating **internal syndrome**. Sunken and powerful pulse signifies excess internal syndrome, while sunken and weak pulse shows deficient internal syndrome.

(2). According to frequency:

3. Slow pulse (Chi Mai)

Features: **Less than 60/min** (<4 beats in a breath cycle).

Clinical significance: Indicating cold syndrome. Slow and powerful pulse signifies excess cold syndrome, while slow and weak pulse shows deficient cold syndrome. Such a pulse condition is also seen in internal excess heat syndrome due to internal accumulation of pathogenic heat. Athletes with slow pulse are in a normal condition.

4. Moderate pulse (Huan Mai)

Features: The pulse is moderate and powerful, beating 4 times in a cycle of breath; or moderate and sluggish, beating 4 times in a cycle of breath (60-70/min).

Clinical significance: **Normal** or indicating **dampness** and weakness of the stomach and spleen.

5. Rapid pulse (Shuo Mai)

Features: **More than 90/min** (>5 - 6 times in a breath cycle).

Clinical significance: Indicating **heat syndrome**. Rapid and powerful pulse signifies excess heat syndrome, while rapid and weak pulse shows deficient heat syndrome. Such a pulse condition is also seen in the syndrome due to external floating of deficient Yang.

Swift pulse (Ji Mai)

Features: The pulse beats over 7 times in a breath cycle (>140/min).

Clinical significance: Indicating loss of control of hyperactive yang, declination of kidney Yin and near depletion of primordial Qi.

This pulse is so rapid (twice the normal speed) that it is easily detected; the acute febrile disease involves an easily measured high temperature and is usually subject of pathogen testing. Consumptive conditions with such high pulse rates are generally under emergency medical care.

(3). According to morphology:

A. According to wide or thin (width):

6. Surging pulse (Hong Mai)

Features: Surging pulse is marked by **wide size and full content**, beating like roaring waves and sensibility under light pressure and surges as well as sudden flowing and ebbing.

Clinical significance: Indicating exuberant **internal heat**.

7. Thin pulse (Xi Mai)

Features: The pulse is **as thin as a thread**, weak and quite sensible under pressure.

Clinical significance: Indicating **deficiency of both Qi, Yin and blood**, various overstrain and diseases due to pathogenic dampness.

B. According to length:

Long pulse (Chang Mai)

Features: The pulse surpasses the range of cun, guan and chi regions.

Clinical significance: Indicating yang syndrome, heat syndrome and excess syndrome.

Short pulse (Duan Mai)

Features: The pulse appears shorter than the normal content of cun, guan and chi regions.

C. According to hard or soft.

8. Slippery pulse (Hua Mai)

Features: The pulse is **beating freely and smoothly like the movement of beads of an abacus**.

Clinical significance: Indicating **retention of phlegm and fluid**, dyspepsia and excess heat. Such a pulse condition is also seen among young and strong and pregnant people.

9. Wiry pulse (Xuan Mai)

Features: Wiry pulse appears straight, **energetic and hard** like the feeling of pressing the string of a violin.

Clinical significance: Indicating **disorders of the liver and gallbladder, pain** syndrome and retention of phlegm and fluid.

10. Tense pulse (Jin Mai)

Features: Tense pulse appears **like the pulling of a rope** and flicks the finger when pressed.

Clinical significance: Indicating **cold syndrome, pain syndrome** and retention of food.

11. Soft/soggy pulse (Ru Mai)

Features: Superficial, **soft**, weak and thin, become weak under heavy pressure.

Clinical significance: Indicating **Qi and blood deficirncy, and dampness syndrome.**

This pulse is similar to the fine and weak pulses. The thready pulse sensation felt on light touch gives the impression of being easily moved, as if floating on water; hence, it tends to indicate spleen Qi deficiency with accumulation of dampness.

D. According to fluency

12. Astringent/choppy pulse (She Mai)

Features: The pulse is beating in an inhibited way like scraping a piece of bamboo.

Clinical significance: Astringent and powerful pulse indicates qi stagnation and blood stasis; astringent and weak pulse signifies lack of essence and insufficiency of blood.

(4). According to Strength:

13. Weak pulse (Xu Mai)

Features: Weak pulse is marked by **weak** beating of the pulse at all the cun, guan and chi regions.

Clinical significance: Indicating **deficirncy** syndrome, usually seen in asthenia of both qi and blood, especially in Qi asthenia.

14. Feeble pulse (Ruo Mai)

Features: Feeble pulse is deep and thin as well as sensible and weak under heavy pressure.

Clinical significance: Indicating **declination of both Qi and blood**.

Indistinct pulse (Wei Mai)

Features: Indistinct pulse is very thin and soft, almost insensible under pressure.

Clinical significance: Indicating extreme deficiency of qi and blood as well as declination of yang qi.

Scattered pulse (San Mai)

Features: Rootless, arrhythmic and disappearing under pressure.

Clinical significance: Indicating depletion of primordial qi, visceral essence at the verge to exhaust and external floating of deficient yang.

These are cases where the patient is critically ill, perhaps near death; such patients are normally hospitalized (or sent home to die) and their diagnosis is usually well-established. The pulse only tells that the patient is severely debilitated; it diffuses on light touch and is faint with heavy pressure.

Hollow pulse (Kou Mai)

Features: Floating, large and hollow like the leaf of scallion.

Clinical significance: Indicating loss of blood and impairment of yin.

15. Powerful pulse (Shi Mai)

Features: Powerful pulse is marked by powerful sensation of pulse beating at cun, guan and chi regions under superficial, moderate and heavy pressure.

(5). According to Rhythm:

16. Rapid and irregular pulse, (Cu Mai)

Features: **Rapid and intermittent** pulse beats fast with **irregular intermittence**.

Clinical significance: Fast and powerful pulse indicates hyperactivity of Yang, heat, Qi stagnation, blood stasis and retention of phlegm and food; fast and weak pulse signifies weakness of visceral Qi and insufficiency of blood.

This pulse is so rapid (twice the normal speed) that it is easily detected; the acute febrile disease involves an easily measured high temperature and is usually subject of pathogen testing. Consumptive conditions with such high pulse rates are generally under emergency medical care.

17. Slow and irregular pulse, (Jie Mai)

Features: The pulse **beats slowly with irregular intermittence.**

Clinical significance: Slow, intermittent and powerful pulse indicates predominance of Yin, Qi stagnation, retention of phlegm， and blood stasis; while slow, intermittent and weak pulse signifies declination of qi and blood.

18. Regularly irregular pulse (Dai Mai)

Features: The pulse beats slowly with regular and longer intermittence.

Clinical significance: Indicating declination of visceral Qi and asthenia of primordial Qi.