

On Hua Tuo's Position in the History of Chinese Medicine

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Abstract: Famed for his surgical expertise, Hua Tuo of the Eastern Han dynasty also excelled in a range of other medical treatments. It is rarely noted that Hua treated patients with a combination of drugs and acupuncture therapy and acquired an expert knowledge of pharmaceuticals. The purpose of this article is to explore the rarely studied achievements of Hua Tuo in pharmaceuticals, and further discuss the status of Hua in the history of Chinese medicine. The article points out that Hua Tuo inherited the medical achievements of past generations and strongly influenced the development of medicine during the Wei Jin and Southern and Northern Dynasties.

Keywords: Hua Tuo; Wu Pu; Tao Hongjing; Materia Medica.

Introduction

Over the long course development of Chinese medical science, only a handful of doctors have stood out in history. Among them, Hua Tuo (A.D. 108?–208?) of the Eastern Han dynasty (A.D. 25–220), is most famous for his expertise in surgery (Hao and Liang, 1982). Throughout the famous historical novel, *San Guo Yanyi* (The Romance of the Three Kingdoms), Hua Tuo is acclaimed for his accomplishments. As early as the Six dynasties (A.D. 222–590) and throughout the Sui and Tang dynasties (A.D. 581–907), Hua Tuo was already recognized as one of the greatest physicians in Chinese history (Fang *et al.*, 1974; Li, 1975).

Later generations have generally believed that Hua Tuo's greatest contribution was his expertise in surgery. As reported in the biography of Hua Tuo in *San Guo Zhi* (History of the Three Kingdoms), Hua would "treat intestinal disorders by making an incision in the abdomen, washing the intestines, then sewing up the abdomen and rubbing on an ointment; the illness would be cured in four to five days and the wound would cause the patient no pain. One month later the patient would have fully recovered" (Chen, 1974). Yamada Keiji's research,

however, suggests that Hua's practice may not have purely focused on surgery. Yamada classified the 16 medical cases listed in Hua Tuo's biography in *San Guo Zhi* according to the traditional divisions in Chinese medicine: ten internal medicine cases, three surgical cases, two gynecological cases and one pediatric case. Thus Hua Tuo's treatment of diseases was centered on internal medicine, but also included surgery, gynecology and pediatrics. He removed parasites, performed abortions and treated ulcers, sores and analgesia. While in nine of the 16 cases Hua's use of medicines was mentioned, Yamada pointed out that, "While mainly applying medication in his treatment, Hua Tuo also used acupuncture, depending on the patient's condition." Yamada suggested a new way of describing the great doctor's achievement: Hua Tuo possessed superior skills in the use of medication, thanks to a considerable knowledge of Chinese materia medica, and he supplemented his use of medicines with skillful use of acupuncture needles (Yamada, 1996b). In spite of his fame as a "miracle-making doctor," little research has been done on Hua because none of his medical writings have survived intact. This paper discusses Hua Tuo's medical skills as well as his historical position; we conclude that his skills and knowledge went far beyond his reputed expertise in surgery and that he served an important role in the history of Chinese medicine.

Tao Hongjing and Hua Tuo

Ben Cao Jing Ji Zhu ("Shen Nong's Annotated Herbal"), by Tao Hongjing (456–536 A.D.), is among China's greatest works on medicines. In this work, Tao presented a historical picture of the development of Chinese materia medica and described the reception of *Shen Nong Ben Cao Jing* ("Shen Nong's Herbal"), an ancient work that is considered, up to this day, as definitive. *Shen Nong Ben Cao Jing* is similar to *Su Wen* ("Plain Questions") in that both had been revised over the course of their transmissions. This led him to suspect that *Shen Nong Ben Bao Jing* had been collated by Zhang Zhongjing and Hua Tuo. He also concluded that Wu Pu (ca. 149–250 A.D.) and Li Dangzhi (dates unknown) made further additions to and deletions from *Shen Nong Ben Cao Jing* in the Wei and Jin dynasties (220–420 A.D.).

This raises the question of why Tao Hongjing attributed the changes in *Shen Nong Ben Cao Jing* to Zhang and Hua rather than to other medical scholars. This question is especially pertinent given that Hua Tuo's surgical skills in abdomen cutting and intestinal washing were inherited from other medical traditions and had little to do with the Shen Nong. The author reasoned that because Hua Tuo's disciple Wu Pu distinguished himself by his broad knowledge and shrewd application of Chinese materia medica and since it is customary to attribute the achievements of a student to his teacher, Hua Tuo must, too, have had great expertise with medicines. Furthermore, according to the *Ben Cao Jing Ji Zhu*, the prescriptions handed down by Bian Que (ca. 500 B.C), Chunyu Yi (ca. 200 B.C) and Hua Tuo revealed a comprehensive understanding of drugs. Even during Tao Hongjing's times, Hua Tuo's prescriptions were known. In other words, it was his familiarity with Hua Tuo's prescriptions that led Tao to conclude that he might have been responsible for collating *Shen Nong Ben Cao Jing*. Both Tao Hongjing's and Yamada Keiji's approaches indicate an interesting research direction, namely, Hua Tuo's attainments in Chinese materia medica.

According to his biography in *San Guo Zhi*, Hua Tuo “specialized in the use of medication in treating diseases. The decoctions he prescribed involved no more than a few herbal medicines, which could be taken once boiled. He then coached his patients during their recuperation. This is how diseases were cured” (Chen, 1974). When Chen Shou (233–297 A.D.) looked at these prescriptions, he found that Hua Tuo combined drugs by their nature, turning them into a single decoction in accordance to the needs of the patient and the principles of drug compatibility. This indicates that Hua Tuo must have contributed several advances in materia medica and could have reinforced Tao Hongjing’s hypothesis that Hua Tuo had amended *Shen Nong Ben Cao Jing*.

Hua Tuo Zhuan and Hua Tuo’s Writings

The biography of Hua Tuo composed by Chen Shou and included in the *Fangshu Zhuan* (“Biographies of Those who Practiced the Occult Arts”) section of his *San Guo Zhi* begins with a summary of his four medical strengths: first, his knowledge of nourishing life practice, which enabled him to look remarkably youthful at the age of 100; second, his deep understanding of medicines, which allowed him to cure diseases by using only a small number of herbs; third, his economic use of acupoints in acupuncture; and fourth, his remarkable surgical technique, to which he added the use of *mafeisan*, an anesthetic.

We have already summarized the 16 cases listed by Chen Shou and they involved medication, acupuncture, pulse palpation, surgery, pediatrics and even treatment of parasitic diseases. It appears that Hua’s abilities led to his death; since the powerful general Cao Cao (155–220 A.D.) of the Three Kingdoms period, whose headaches Hua had successfully treated, found his physician’s pride so infuriating that he had him executed. When Cao Cao’s son later contracted a malady that no one could cure, the murderous general regretted his haste.

In the conclusion of the biography, Chen Shou addressed the legacy of Hua Tuo. Two of his students, Wu Pu and Fan A (third century), had preserved his medical legacy. Hua had taught Wu “the frolics of the five animals,” an exercise regimen said to have kept him healthy and strong at the age of 90. Fan A, on the other hand, developed outstanding acupuncture skills and is said to have cured all the diseases he treated. Flouting convention, Fan placed acupuncture needles in the thorax and back of his patients, sometimes inserting them as deep as one or two *cuns* [Cun is a measure of length in acupuncture and is the distance between the upper ends of the distal and middle interphalangeal folds formed by flexing the patient’s middle finger (Li, 1997)]. Hua also taught Fan what he had learned of healthy dietary practices, emphasizing the remarkable properties of a powder made from *qiye* (lacquer-tree leaves) and *qingnian* (beet greens). These correspond with three of Hua Tuo’s four fortes identified at the beginning of the biography. Notably absent was any talk of the legacy of Hua Tuo’s surgical expertise, though it was generally believed to be his most particular specialty.

A few more details from the *San Guo Zhi* biography must be added. First, of all Hua Tuo’s disciples, Wu Pu most effectively applied Hua Tuo’s wisdom: “With the methods learned from Hua Tuo, Wu Pu was very effective in treating patients” (Chen, 1974). This endorsement must have enhanced the value of *Hua Tuo fang* (Hua Tuo’s prescriptions),

a work in ten scrolls by Wu Pu recorded in the *Jing ji zhi* (“Monograph on Dynastic Bibliographies”) section of *Sui shu* (“History of the Sui Dynasty”). Wu Pu was not only Hua Tuo’s best student and the inheritor of his medical skills but also the collator of Hua’s medical works. The author proposes to call upon Wu’s works for evidence of Hua’s medical skills.

Second, when opening patients’ abdomens, Hua Tuo used an herbal medicine known as *mafeisan* (Lang, 1986; Song, 1987). After drinking *mafeisan*, the patients were able to undergo the operation with little pain. In one case, a patient with depilation of the beard and eyebrows was diagnosed by Hua Tuo as having problems with his spleen. After the patient drank *mafeisan*, Hua Tuo opened and explored his abdomen, eventually confirming that the spleen was unhealthy. He then removed the deteriorated part of the spleen and plastered the abdomen; the patient soon recovered afterwards.

Third, the properties of the *qiye* and *qingnian* powder Fan A learned about from Hua Tuo included eradicating three kinds of internal parasites, benefiting the five internal organs, controlling weight and preventing grey hair. The powder was recorded in the typical method for books on materia medica, starting with the description of the components of the powder, followed by its effects and then the original places of the two herbs. In addition, the famous Tang dynasty doctor Sun Simiao (581?–682 A.D.) quoted Hua Tuo three times in the *Shi Zhi* (“Dietary Remedies”) section of his *Bei Ji Qian Jin Yao Fang* (“Invaluable Prescriptions for Ready Reference”) (Sun, 1987). If these quotations were really from works by Hua Tuo and his disciples, then Hua Tuo must have explored the properties of the drugs to a significant degree (Fan, 2000).

Among the medical books recorded in the *Sui Shu* “Jing ji zhi,” five may be attributed to Hua Tuo and his disciples:

- (1) *Ben Cao*, by Wu Pu (six scrolls)
- (2) *Hua Tuo Fang*, by Wu Pu (ten scrolls)
- (3) *Hua Tuo Nei Shi* (“Hua Tuo’s Internal Inspection”), (five scrolls)
- (4) *Hua Tuo Guan Xing Cha Se Bing San Bu Mai Jing* (“Hua Tuo’s Classic on Observing the Complexion, the Body and the Tripartite Pulse”), (one scroll)
- (5) *Hua Tuo Zhen Zhong Jiu Ci Jing* (“Hua Tuo’s Pillow Book on Acupuncture and Moxibustion”), (one scroll). [According to Ma Jixing, passages from this work are quoted in medical books dating from the Jin dynasty to the Song dynasty (Ma, 1990).] (Wei *et al.*, 1973)

Hua Tuo Fang, a longer work than the others, was most likely a summary of the medical knowledge Hua Tuo developed during his life and Wu Pu collated and edited this comprehensive work. The works on pulse palpation, acupuncture and moxibustion reinforce what we know from Chen Shou’s biography about Hua Tuo’s expertise in these areas.

Materia Medica Knowledge of the Hua Tuo School as Reflected in Wu Pu’s *Ben Cao*

Wu Pu, as the author of *Wu Pu’s Ben Cao*, probably inherited Hua Tuo’s knowledge of materia medica. Through Wu Pu’s *Ben Cao*, we have access to the ideas about medicines

that Hua Tuo and his disciples had. Like many other herbals, *Ben Cao* catalogues medical herbs and lists their nature, flavor and toxicity, as well as the best time to pick them. Crucially, the book ascribes the information it provides to different sources. By comparing the descriptions of various drugs, Liao Yuqun has been able to develop profiles of the nine schools cited (Liao, 1991).

The nine different schools mentioned by Wu are those of Shen Nong, Huang Di, Qi Bo, Bian Que, Lei Gong, Tong Jun, Yi He, Li Shi and Yi Jing. When mentioning a particular drug, Wu Pu might cite one school or several. Of the 137 entries for which a school is mentioned, Yi Jing and Yi He were least quoted (14 and 17 times, respectively), while Shen Nong was the most frequently mentioned (a staggering 130 times). Additionally, whenever several schools were cited together, the Shen Nong citation was always placed ahead of the others. In other words, in Wu Pu's book, the Shen Nong school far surpassed all others (Wu, 1987). If such an inference is accepted, then one could easily understand Tao Jinghong's hypothesis connecting Hua Tuo closely to the revision of *Shen Nong Ben Cao Jing* and that Hua Tuo "knew clearly the nature of drugs" (Tao, 1994).

In his research on *Huang Di Nei Jing* ("Huangdi's Internal Classic"), Yamada Keiji pointed out that there may have been many different schools of thought in medical science before the end of the Western Han dynasty (206 B.C–23 A.D). These schools would revere some people as Masters and attribute medical works to them (Yamada, 1996a). In *Jing Ji Zhi* of *Sui Shu*, one could still see medical books under the names of Huang Di, Qi Bo, Lei Gong and Bian Que. Judging from what Wu Pu cited in *Ben Cao*, these schools held the same interest in the odors, properties and toxicity of drugs, although their ideas about them often differed. In this light, the medical books under the names of certain Masters might well represent their different understandings of the drugs. Thus, in addition to Shen Nong, Lei Gong, Tong Jun and Li Shi, other schools such as Huang Di, Qi Bo, Bian Que and Yi He also contributed understandings of materia medica (Fan, 2000). Shen Nong seems to be the only school with handed-down works and masterpieces on materia medica, but other schools clearly had their own understanding of and interest in medicinal herbs.

When he quoted from the various schools of thought, Wu Pu treated Shen Nong as the first and primary source but did not reject the ideas of other schools, a catholic approach that permitted a variety of schools to co-exist in a single text, albeit with a certain hierarchy. It seems entirely possible that Wu drew on a library of medical texts. From here it is but a single step to the conclusion that Hua Tuo and his disciple's achievements resulted from a combination of ideas from various schools.

Hua Tuo, a Man of His Time

As mentioned above, Hua Tuo had high attainments in acupuncture, pulse palpation and medication, as well as in internal medicine, gynecology, pediatrics and surgery. His medical skills covered the range of medical knowledge of his day. It seems likely that Hua Tuo's understanding of the use of medicinal herbs and also, his medical techniques, had been synthesized from a range of textual and practical sources. This was the conclusion of a fellow doctor who lived just shortly after Hua.

In both his *Baopuzi Nei Pian* (“Inner Chapters of *Baopuzi*”) and his *Zhou Hou Bei Ji Fang* (“Prescriptions for Emergent Reference”), the Jin dynasty doctor Ge Hong (281–341 A.D.) mentioned that he had seen a number of prescriptions by Hua Tuo. When he compared these with other prescriptions in the medical books available to him, Ge Hong concluded that Hua Tuo (and Dai Ba) had collected “prescriptions from many medical specialists, including Jin Kui, Lu Nang, Cui Zhongshu, Huang Sufang and so on” (Ge, 1963; Ge, 1985).

One of the works listed in the *Sui Shu* bibliography of medical works was *Hua Tuo Guan Xing Cha Se Bing San Bu Mai Jing*. This work may have included *Bian Que Hua Tuo Cha Sheng Se Yao Jue* (“Bian Que and Hua Tuo’s Evaluation of Voice and Complexion”), which survives in the fifth scroll of Wang Shuhe’s *Mai Jing* (Pulse Classic) and the 28th scroll, entitled “Ping mai” (“Pulse Diagnosis”), of Sun Simiao’s *Bei Ji Qian Jin Yao Fang*. In *Mai Jing*, Wang Shuhe (ca. third century) expressed his debt to the medical books written since the time of Qi Bo, emphasizing the importance of Bian Que and Hua Tuo’s books (Wang, 1984). We know from the biography of Hua Tuo in *Hou Han Shu* (“History of the Later Han Dynasty”) that one of Hua’s specialties was pulse palpation — “Hua Tuo would feel the pulse [at the wrist] of the patient very accurately” (Fan, 1965). Liao Yuqun has even suggested that the art of feeling the pulse (*Cun Chi Guan*) may have been invented by Hua Tuo (Liao *et al.*, 1998). In addition to associating Bian Que and Hua Tuo in his acknowledgments, Wang Shuhe noted that the two men were familiar with the same pulse palpation method. Thus, Hua Tuo’s expertise in pulse palpation could have been attributed to the Bian Que school.

Shanghan was a serious epidemic in the late Eastern Han dynasty. In his *Shanghan Lun* (“Treatise on Cold-Induced Febrile Disease”), Zhang Zhongjing (ca. 150–219 A.D.) recorded that many of his clansmen had died of the epidemic during the Jian’an reign period (196–220 A.D.) (Zhang, 1982). Since Hua Tuo lived at approximately the same time as Zhang Zhongjing, he also had to contend with this deadly illness. In the Tang dynasty, Sun Simiao listed a work entitled *Shanghan Li* (“Paradigm of *Shanghan*”) in the *Shanghan Fang* (“Prescriptions for *Shanghan*”) section of his *Bei Ji Qian Jin Yao Fang*. *Shanghan Li* included remarks on the disease by Zhang Zhongjing, Wei Xun, Bian Que and Hua Tuo, the last of whom provided descriptions of symptoms in six different areas (epidermis, dermis, muscle, thorax, abdomen and stomach) and methods for treatment. Virtually no one but Wang Shuhe looked carefully at *shanghan* after Hua Tuo, whose ideas obviously very much influenced Wang and virtually all of those who continued to treat the disease until the Song dynasty (Cao, 2002; Ye, 1995).

As mentioned earlier in the article, one of Hua’s students practiced the exercise regimen known as “the frolics of the five animals.” By imitating the characteristic motions of the tiger, deer, bear, ape and bird, one hoped to relieve physical discomfort and strengthen the body. We know from the *Dao yin tu* (“Diagram of Calisthenics”) excavated from Mawangdui in Hunan Province that the idea of aping the movements of animals did not originate with Hua Tuo. Hua Tuo’s contribution might have been to specifically identify five animals and to create the body movements in imitation of these five. The frolics of the five animals later became one of the health-preserving methods for Taoism (Tao, 1993).

As can be seen from Wu Pu's *Ben Cao*, Hua Tuo's medical skills grew from a commitment to studying and absorbing the methods and knowledge of the various Han era medical schools. In other words, Hua Tuo played the role of a "collector" in the development of medical science, even as he developed new approaches to anesthetics and the treatment of specific illnesses, such as *shanghan*. Hua Tuo did not simply contribute to surgery. He acted as a bridge between various Han dynasty and subsequent Wei and Jin dynasty (220–420 A.D.) medical specialties: emergency medicine, pulse palpation science and herbal science.

What made Hua Tuo a renowned doctor of his time was not simply his expertise in treating parasitic diseases but also his outstanding skills in medication, acupuncture and pulse palpation, as well as his consolidation of extant medical skills (Ma, 1994). His influence may be felt in three important works in the history of Chinese medical science: *Zhou Hou Bei Ji Fang*, *Mai Jing* and *Ben Cao Jing Ji Zhu*. Hua Tuo also provided unique insights into *shanghan*, an epidemic disease of the late Eastern Han. Writing much later, both Wang Shuhe and Sun Simiao supported Hua Tuo's insights and techniques.

Conclusion

Though little is known about Hua Tuo's knowledge and treatments, for many centuries he has been held up as a role model for Chinese doctors. By utilizing the limited information available and leaning heavily on Wu Pu's *Ben Cao*, we have endeavored to improve our understanding of Hua's skills. Paradoxically, the surgical skills for which he was most praised have left virtually no impression on the historical record: none of his students were distinguished surgeons and the remarkable anesthetic he invented, *mafeisan*, has been lost. But as a famous doctor of his time, Hua Tuo absorbed various existing medical techniques into his own practice; making him a transitional character in medical science between the late Eastern Han dynasty and later dynasties. We believe that his greatest contributions to medicine were his synthesis of various medical schools of thought and his influence on the three great classics in the history of Chinese medical science, namely, Ge Hong's *Zhou Hou Bei Ji Fang*, Wang Shuhe's *Mai Jing* and Tao Hongjing's *Ben Cao Jing Ji Zhu*.

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