

Theoretical Reconstruction and Clinical Value Analysis of the Traditional Chinese Medicine Concept of “Nurturing Instead of Treating” in Orthopedic Rehabilitation

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Abstract: *Objective:* Focusing on the scenario of holistic rehabilitation management for bone injuries, this study aims to explore the practical application value of the Traditional Chinese Medicine (TCM) concept of “nourishment instead of treatment” and to investigate the implementation pathways for integrating traditional TCM therapies with modern rehabilitation techniques. *Methods:* By integrating historical TCM literature on bone injuries and combining it with practical clinical experience accumulated from daily diagnosis and treatment, this study outlines the intervention logic of this nourishment approach during different healing stages of fractures. It also conducts a multidisciplinary comparative analysis based on existing modern research findings in Enhanced Recovery After Surgery (ERAS) and bone tissue engineering. *Results:* A comprehensive review of ancient texts and clinical case observations reveals that “nourishment instead of treatment” does not simply entail passive rest and immobilization but rather represents an active rehabilitation model that synergistically combines the regulation of qi and blood, tonification of the liver and kidneys, and emotional counseling. This model can stimulate the body’s self-healing capacity, reduce the incidence of postoperative complications, and improve long-term limb mobility in patients, aligning closely with modern holistic medical approaches. *Conclusion:* As a practical extension of the “preventive treatment of disease” theory in the field of bone injuries, this concept provides a reference for constructing integrated TCM-Western medicine rehabilitation protocols for bone injuries. It holds significant practical value for both clinical promotion and subsequent evidence-based medical research.

Keywords: Nourishment instead of treatment; Bone injury; TCM bone injury; Fracture healing; Rehabilitation protocol; Clinical application

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1. Introduction

Fractures, soft tissue injuries, and various degenerative bone disorders are commonly encountered in orthopedic outpatient settings. Clinical management of these injuries should not be limited to the anatomical reduction of bone structures but should also prioritize the restoration of long-term limb mobility. TCM bone injury treatment has traditionally emphasized the simultaneous regulation of tendons and bones; however, rehabilitation approaches centered on “nourishment instead of treatment” are often overlooked in daily clinical practice. This approach, derived from the TCM preventive concept of “preventive treatment of disease”, focuses on promoting the gradual repair of various injuries by fortifying the body’s vital energy. This article transcends the conventional focus on isolated symptomatic treatments by first tracing the theoretical development of this concept, then discussing stage-specific differential nourishment strategies for fractures, and finally analyzing its mechanisms of action in light of modern medical research. This approach aims to elucidate the auxiliary value of nourishment strategies in clinical treatment and provide a reference for developing more comprehensive rehabilitation intervention protocols for bone injury patients.

2. Theoretical origins and connotative reconstruction

2.1. Historical evolution

The TCM preventive medicine system serves as the theoretical foundation for the concept of “nourishment instead of treatment”. The Huangdi Neijing (The Yellow Emperor’s Classic of Internal Medicine) states, “The sage does not treat already manifested diseases but prevents diseases before they occur”, thereby establishing a diagnostic and therapeutic approach that prioritizes nourishment ^[1]. During the Tang Dynasty, Sun Simiao compiled the *Bei Ji Qian Jin Yao Fang* (Essential Formulas for Emergencies Worth a Thousand Gold Pieces), emphasizing the importance of health preservation and disease prevention in clinical practice ^[2]. Focusing on the specialty of bone injuries, Wei Yilin of the Yuan Dynasty mentioned in his *Shiyi De Xiaofang* (Effective Formulas from a Family of Imperial Physicians) that after fracture reduction, external fixation, internal and external medication, and daily care should all be given equal attention ^[3]. Hu Tingguang of the Qing Dynasty authored the *Shangke Huizuan* (Compendium of Traumatology), proposing that “injuries from falls and blows should be addressed primarily from the perspective of blood”, highlighting blood and qi regulation as the core elements promoting injury recovery ^[4].

2.2. Core mechanisms

Based on practical diagnostic and therapeutic experience in frontline bone injury treatment, this nourishment concept operates through three distinct levels of organismal regulation. Nourishment of qi and blood provides the foundation for fracture repair. Fracture healing inherently involves the dissipation of turbid blood stasis and the gradual formation of new bone tissue. The *Lingshu* (Spiritual Pivot) states that “bones govern flexion and extension”, indicating that both bone activity function and callus growth and differentiation require a continuous supply of nourishment from qi and blood. Optimizing qi and blood circulation in the injured area can enhance local blood supply, providing sufficient material support for callus formation.

From the perspective of the zang-fu organs, TCM holds that “the liver governs tendons” and “the kidneys govern bones”. Once liver and kidney essence and qi become deficient, the repair process of tendons and bones is impeded. Implementing interventions to tonify the liver and kidneys in patients during the recovery phase can not only accelerate injury repair but also prevent disuse-related osteoporosis caused by

prolonged limb immobilization.

Negative emotions such as fear and anxiety resulting from trauma can also interfere with the rehabilitation process. Such stress states tend to disrupt the body's qi movement patterns. Timely emotional counseling in clinical settings to calm the patient's mind and ensure smooth qi and blood circulation throughout the body represents an indispensable psychosomatic intervention for promoting injury recovery.

3. Stage-specific intervention strategies

3.1. Acute phase (1–2 weeks post-injury): Dissipate blood stasis, protect vital energy, and regulate qi and blood

The first 1 to 2 weeks post-injury constitute the acute phase of injury, with qi stagnation and blood stasis representing the core pathological mechanisms. Swelling and pain at the affected site are typical symptoms. Clinical treatment focuses on dredging stagnation while also attending to the protection of the body's vital energy. External fixation of the affected limb is commonly achieved using plaster casts or small splints, with the tightness of fixation adjusted flexibly during the procedure to prevent compression of soft tissues and blood vessels, which could impede local blood circulation. Daily care can incorporate positional adjustments, such as suspending the upper limb and elevating the lower limb, to rely on gravity to accelerate venous return and effectively alleviate local congestion and swelling. For internal medication, formulas that promote blood circulation, such as Taohong Siwu Decoction, are often used as a base, supplemented by astragalus and atractylodes to fortify the spleen and replenish qi, thereby stabilizing spleen and stomach transportation and transformation functions, avoiding the depletion of vital energy by blood-activating drugs, and ensuring the continuous generation of qi and blood. Fear and anxiety resulting from trauma can easily disrupt qi movement, hindering the dissipation of blood stasis. Therefore, timely psychological counseling in clinical settings is necessary to regulate qi movement throughout the body and accelerate the resolution of swelling and pain.

3.2. Recovery phase (3–8 weeks post-injury): Tonify the spleen and kidneys, regenerate tendons, and grow bone

From 3 to 8 weeks post-injury, the fracture enters the recovery phase. Blood stasis in the body gradually dissipates, and callus formation enters a stage of rapid proliferation. Patients often exhibit syndromes of qi and blood deficiency and insufficient liver and kidney essence and qi. At this stage, pharmacological treatment and daily care should be implemented simultaneously. According to the TCM theory that “the spleen governs muscles” and “the kidneys govern bones”, dietary therapy can be used as an adjunct to recovery. Dipsaci Radix Pork Bone Soup can replenish the kidneys and fill the marrow, reconnecting damaged tendons and bones, while Astragali Radix and Angelicae Sinensis Radix Stewed Chicken can replenish qi and nourish blood, providing sufficient nutritional support for bone tissue repair. Rehabilitation training adheres to the traditional principle of combining activity with rest. Patients are guided to move unfixed joints and perform isometric muscle contraction exercises of the affected limb. Quadriceps femoris isometric training is commonly used for intervention, relying on the muscle pump to improve local blood circulation and prevent muscle atrophy, joint adhesion, and lower limb thrombosis. For internal medication, the main therapeutic principles are reconnecting tendons, mending bones, and replenishing liver and kidney qi and blood. Formulas such as Xugu Huoxue Decoction and Zhuangjin Yangxue Decoction are selected and

modified according to the specific condition. Clinically observed bone injury herbs such as *Dipsaci Radix*, *Pyritum*, and *Dipsaci Asperoides* Oken can enhance osteoblast activity and accelerate callus remodeling ^[5].

3.3. Sequelae phase (beyond 8 weeks post-injury): Strengthen the foundation, dredge meridians, and prevent recurrence

Even after radiographic evidence of fracture healing, most patients still experience residual symptoms such as joint stiffness, limb weakness, and aches and pains on rainy days. The root pathological mechanisms are often deficiency of liver and kidney essence and obstruction of meridians due to blood stasis. At this stage, rehabilitation focuses on strengthening the foundation and regulating nourishment while dredging meridians, aiming to improve sequelae and reduce the risk of recurrent chronic injuries. Traditional guiding exercises can be used as an adjunct to rehabilitation training. Individualized exercise programs are developed based on the patient's age and injury site, using exercises such as Taijiquan and Baduanjin to regulate qi and blood throughout the body, combined with specialized exercises such as joint mobility training, muscle strength training, and proprioceptive repair to gradually restore normal limb mobility. Concurrently, external therapies such as acupuncture, tuina, and moxibustion are employed, with acupoints such as Zusanli (ST36), Yanglingquan (GB34), Xuanzhong (GB39), and Ashi points at the affected site selected for meridian intervention. These methods effectively release soft tissue adhesions, dredge local blood stasis obstruction, and alleviate sequelae such as limb soreness and stiffness ^[6]. Daily rehabilitation guidance should adhere to the principles of seasonal health preservation, instructing patients to avoid strenuous activities involving the affected limb during the recovery period, ensure proper limb warmth and protection, and prevent the invasion of cold and damp pathogens into the tendons and bones, thereby preventing recurrent pain from chronic injuries.

4. Explanation of modern medical value

4.1. Alignment with the ERAS concept in enhanced recovery after surgery

The core idea of ERAS is to comprehensively optimize the entire perioperative diagnostic and therapeutic process to mitigate the systemic stress response induced by surgical procedures. This diagnostic and therapeutic logic aligns closely with the TCM rehabilitation concept of “nourishment instead of treatment, with nourishment and treatment working in tandem”. Minimally invasive orthopedic surgeries and precise internal fixation treatments can reduce additional soft tissue damage during surgery, echoing the TCM emphasis on minimizing invasive procedures and focusing on organismal regulation. The ERAS concept advocates for early postoperative ambulation and the development of individualized nutritional plans based on the patient's condition, corresponding to the TCM approach of combining activity with rest and using dietary therapy to support vital energy. These strategies can effectively shorten the patient's overall rehabilitation cycle.

4.2. Microscopic evidence from bone tissue engineering

Modern bone tissue engineering relies on seed cells and various growth factors to activate the bone's inherent repair potential, sharing a core logic with TCM's reliance on the body's vital energy to achieve spontaneous healing of trauma. Existing pharmacological experimental data demonstrate that TCM herbs with kidney-tonifying effects, such as *Eucommiae Cortex* and *Dipsaci Asperoides* Oken, can regulate the differentiation

of bone marrow mesenchymal stem cells into osteoblasts, providing molecular and microscopic evidence for the objective scientific basis of the TCM theory of “tonifying the kidneys to generate bone” [7].

4.3. Guidance for the diagnosis and treatment of geriatric osteoporotic fractures

Elderly patients with fractures often have multiple underlying conditions such as hypertension, diabetes, and osteoporosis, with deficient vital energy, weak surgical tolerance, and a significantly higher risk of postoperative complications and secondary fractures. The “nourishment instead of treatment” model can be applied throughout the entire diagnostic and treatment process, implementing stratified nourishment interventions: preoperative TCM herbal conditioning and dietary supplementation can improve low protein levels and anemia, stabilize the management of underlying chronic diseases, and enhance the patient’s surgical tolerance; postoperative staged interventions to replenish qi and blood and dredge meridians throughout the body can provide early prevention of complications such as infection, pressure ulcers, and deep vein thrombosis of the lower limbs, while long-term administration of liver and kidney tonification methods can increase bone density and reduce the probability of recurrent fractures from the root cause.

5. Discussion and prospects

5.1. Scope of application and limitations

This phased convalescence regimen is particularly well-suited for stable closed fractures, post-fracture functional recovery, primary osteoporosis, osteoarthritis, and various chronic soft tissue injuries, offering significant advantages in improving limb mobility and alleviating discomfort caused by long-term strain. However, it also has clear boundaries of application. For severe open fractures, multiple comminuted fractures, or critical cases complicated by vascular or nerve injuries and traumatic infections, clinical priority should be given to Western medical emergency measures such as debridement surgery, internal fixation, and anti-infection treatment, rather than relying solely on convalescence methods to avoid delaying the emergency process.

5.2. Dynamic balance between convalescence and treatment

“Convalescence instead of treatment” does not entirely replace clinical treatment. Its core idea is to dynamically adjust the priority between convalescence and pharmacological or surgical treatment based on different stages of fracture progression, while formulating individualized convalescence plans throughout the process following a dialectical approach. During the acute phase of injury, blood stasis is the primary issue, with treatment focusing on removing blood stasis and reducing swelling, supplemented by moderate convalescence to protect vital energy. As the recovery phase progresses, qi and blood in the body gradually recover, and callus continues to grow, requiring simultaneous attention to pharmacological treatment and bodily convalescence. In the sequelae phase, patients often suffer from deficiency of vital energy and prolonged stagnation of meridians, shifting the focus of treatment to consolidating the foundation and convalescence, with only localized symptomatic treatment, thus achieving refined intervention throughout the entire course of bone injury.

5.3. Future research directions

The current “convalescence instead of treatment” intervention model implemented clinically is mostly

based on long-term clinical experience summarization, with a relative lack of in-depth understanding of its underlying mechanisms and large-sample evidence-based medical evidence. Subsequent research can be conducted from three dimensions. First, quantitative evaluation can be achieved through CT, MRI imaging examinations, and biomechanical testing techniques to visually quantify the improvement effects of various traditional Chinese medicine convalescence methods on the fracture healing process. Second, multi-center randomized controlled clinical trials can be designed to systematically verify the actual clinical efficacy and application safety of this phased convalescence regimen ^[5]. Third, basic experiments can be conducted around classic osteogenic signaling pathways such as Wnt/ β -catenin and BMP/Smad to dissect the molecular mechanisms by which blood-activating and kidney-tonifying traditional Chinese herbs promote bone repair ^[7].

6. Conclusion

“Convalescence instead of treatment” is a distinctive core theory formed through the inheritance and development of traditional Chinese medicine for bone injuries, significantly differing from the singular symptomatic treatment model. This theory focuses on regulating qi and blood throughout the body, nourishing liver and kidney essence, and harmonizing emotional qi, relying on the holistic view of traditional Chinese medicine to consolidate the foundation and cultivate vital energy, fully mobilizing the body’s own trauma repair capabilities. It combines the advantages of traditional Chinese medicine convalescence and Western medical diagnosis and treatment in accelerating injury healing, reducing various complications, and improving patients’ long-term recovery outcomes. The internal logic of this theory highly aligns with modern medical research directions such as enhanced recovery after surgery and bone tissue engineering, possessing broad prospects for clinical application and promotion. Subsequent efforts should continue to promote multidisciplinary cross-exploration, continuously supplement molecular mechanism and large-sample evidence-based medical evidence, facilitate the deep integration of the “convalescence instead of treatment” concept with modern orthopedic diagnosis and treatment technologies, establish a new bone injury diagnosis and treatment system that combines convalescence and treatment and integrates traditional Chinese and Western medicine, and provide long-lasting and personalized diagnosis, treatment, and convalescence services for bone injury patients.

Disclosure statement

The authors declare no conflict of interest.

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