

Case Report

## Humerus Fracture Healing Using Traditional Chinese Medicine

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**Abstract**—Cases of mid-shaft humerus fracture are often managed conservatively. However, poor fracture healing is not uncommon and often require surgical intervention with equivocal prognosis and may result in complications such as radial nerve injury and nonunion. We report a case of successful healing of mid-shaft humerus fracture using traditional Chinese medicine (TCM). The principles of fracture management in TCM is very different from conventional orthopaedics utilizing light immobilization, active joint exercise and herbal agents that promote bone healing. This case report illustrates the potential role of traditional Chinese medicine in humerus fracture management.

**Keywords**— Humerus fracture; mid-shaft; traditional Chinese medicine, TCM.

### I. INTRODUCTION

Humerus fractures are common and often managed conservatively. Transverse mid-shaft humerus fracture however is associated with poor fracture healing due to the constant movement and poor contact between fractured bone surfaces often requiring surgical intervention with equivocal prognosis that is associated with complications such as radial nerve injury and nonunion [1]. Traditional and complementary medicine (TCM) are now quite common especially in Asia. Acupuncture for example is currently in practice alongside modern medicine in Malaysian Ministry of Health hospitals [2]. However, TCM specifically for fracture management is rare. Very few cases reported of such use are available in the literature and mostly are from China [3,4]. We report a case of successful healing of mid-shaft humerus fracture using traditional Chinese medicine.

### II. CASE

We present a 36-year-old man who was presented to the Ampang Hospital emergency department with right closed transverse mid-shaft humerus fracture. He was initially treated conservatively with plaster of paris immobilization for 2 weeks. Patient also used Celebrex which is a COX-2 selective non-steroidal anti-inflammatory drug for pain relief for 5 days only stopping after being advised by a medical colleague about the possible bone healing problems that might arise from such usage. On follow-up, there was no sign of good callus formation. Even after 3 weeks, there were little signs of bone healing (Fig 1). The patient was offered surgery which could either be plating or intermedullary nail. The patient was also warned about the equivocal success rate of surgical intervention that include nonunion and the possibility of radial nerve injury which

may result in wrist drop. In view of the less encouraging prognosis, the patient made a radical decision to try TCM. He went to see a Chinese medicine fracture specialist clinic in Senawang, Negeri Sembilan. For nearly 2 months, he underwent treatment which involved removal of the initial plaster of paris cast and the application of a topical black herbal disc patch which was positioned at the fracture site. The fracture was then immobilized under light dressing and arm sling allowing minimal movement of shoulder and elbow joint. Fracture healing progress was monitored every other day with the herbal disc patch being replaced each time. Apart from this, the patient was asked to drink plenty of hot water and avoid certain food such as mutton, pumpkin and cucumber. He was also asked to try and flex the elbow joint several times daily. Follow-up radiographs at 7 and 9 weeks showed good callus formation (Fig 1). Patient also achieved full clinical recovery with full range of motion and no adverse reaction was observed.



Fig. 1 The radiograph of right humerus; from left to right weeks 1 (A), 3 (B), 7 (C) and 9 (D). Note no callus formation at week 3 (B) (despite plaster of paris immobilization) and good callus formation at week 9 (D).

### III. DISCUSSION

Mid shaft humerus fractures are often managed conservatively with cast immobilization. Here, conservative management failed to produce good callus formation even after 3 weeks. This may be due to patient's use of COX-2 selective anti-inflammatory drug for pain relief. This class of analgesia has been shown to hinder bone healing [5]. Due to delayed healing, patient was offered surgical intervention which may by itself cause nonunion [1] as well as nerve injury [6]. Patient however opted for TCM which has been reported to speed up the healing of humerus [3] and olecranon [4] fractures. *In vitro* experiment [7] as well *in vivo* work using rodent models [8] have shown that Chinese medicine have a role to play in speeding up bone healing. Unlike conventional medicine of fracture management which only involves immobilization techniques and/or surgery. Basic principles in fracture management was also different between conventional and TCM. It is common practice that a fractured bone needs to be immobilized by one joint above and one joint below. On the contrary, TCM advocates the said joints movement rather than immobilisation. TCM also focuses on the use of agents that promote and speed up bone healing. In this case however, the exact components of the topical black herbal disc patch is not known due to refusal of disclosure by the practitioner. A previous study using Chinese medicine herbal paste made of 3 different components namely Carthami flos, Dipsaci

radix and Notoginseng Rhizoma, demonstrated bone healing property on experimental rodent model [9].

### IV. CONCLUSION

This case report illustrates the potential role of traditional chinese medicine in humerus fracture management. however, more cases and experiments are needed to ascertain the efficacy of such treatment.

### CONSENT TO PARTICIPATE

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

### CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest.

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### REFERENCES

- [1] Patel, V. R., Menon, D. K., Pool, R. D., & Simonis, R. B. (2000). Nonunion of the humerus after failure of surgical treatment: management using the Ilizarov circular fixator. *The Journal of bone and joint surgery. British volume*, 82(7), 977-983.
- [2] Jayaraj, P. (2010). Regulation of traditional and complementary medicinal products in Malaysia. *International Journal of Green Pharmacy (IJGP)*, 4(1).
- [3] Hsueh, T. P., & Chiu, H. E. (2012). Traditional Chinese medicine speeds-up humerus fracture healing: two case reports. *Complementary therapies in medicine*, 20(6), 431-433.
- [4] Chen, Y. P., Lan, Y. S., Hu, W. L., & Hung, Y. C. (2018). Nonoperative manipulative reduction with Chinese herbs for the treatment of a displaced olecranon fracture: A case report. *Medicine*, 97(21).
- [5] Pountos, I., Georgouli, T., Calori, G. M., & Giannoudis, P. V. (2012). Do nonsteroidal anti-inflammatory drugs affect bone healing? A critical analysis. *The Scientific World Journal*, 2012.
- [6] Lim, R., Tay, S. C., & Yam, A. (2012). Radial nerve injury during double plating of a displaced intercondylar fracture. *The Journal of hand surgery*, 37(4), 669-672.
- [7] Lin, C. Y., Sun, J. S., Sheu, S. Y., Lin, F. H., Wang, Y. J., & Chen, L. T. (2002). The effect of Chinese medicine on bone cell activities. *The American journal of Chinese medicine*, 30(02n03), 271-285.
- [8] Huang, H. F., & You, J. S. (1997). The use of Chinese herbal medicine on experimental fracture healing. *The American journal of Chinese medicine*, 25(03n04), 351-356.
- [9] Siu, W. S., Shiu, H. T., Ko, C. H., Shum, W. T., Yu, H. N., Lau, C. B. S., ... & Leung, P. C. (2017). Integrative approach to facilitate fracture healing: topical chinese herbal paste with oral strontium ranelate. *Evidence-Based Complementary and Alternative Medicine*, 2017.