

Acupuncture and Acupressure Techniques for Reducing Orthodontic Post-adjustment Pain

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Abstract

Orthodontic post-adjustment pain is one of the most common complaints of adult patients undergoing orthodontic treatment. This article aims to introduce the combination of acupuncture and acupressure techniques for reducing orthodontic post-adjustment pain using a single acupuncture point, Hegu (LI-4).

Keywords: Acupuncture, acupressure, dental pain, orthodontics, complementary treatment, anesthesia

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Introduction

Acupuncture has been widely practiced in China to treat various diseases for more than three thousand years. When fine needles are inserted into various acupuncture points, small myelinated nerve fibers in muscles are stimulated to send impulses to the spinal cord and, subsequently, activate three neurological centers: the spinal cord, the midbrain, and the pituitary-hypothalamus. It has been shown various endogenous substances, such as beta-endorphine, noradrenaline, enkephalin, and serotonin are involved in the process.¹ Acupressure follows the same principle as acupuncture, but it stimulates the points with gentle finger pressure rather than fine needles and it can be easily carried out by patients.²

Post-adjustment pain is frequently experienced by patients undergoing orthodontic treatment, particularly adult patients. Various methods have been proposed to manage such discomfort including analgesic agents and transcutaneous electrical nerve stimulation.³⁻⁵ Acupuncture has been shown to cause effective dental analgesia in various clinical trials.⁶ The Hegu (LI-4) acupuncture point has been widely used to control dental pain.⁷ A neuromagnetic study carried out to measure brain magnetic fields evoked by acupuncture has demonstrated that excitation of the LI-4 point could inhibit actions of the jaw and face and offers a possible explanation why acupuncturing the LI-4 point could effectively inhibit dental pain.⁸

This paper presents a method we use for stimulating the LI-4 point for management of post-orthodontic adjustment pain. Our clinical experience indicates the treatment is safe and seems to benefit a number of our adult orthodontic patients. No random control trials are available to provide scientific evidence regarding the safety or efficacy of this method.

Technique

1. Locate the LI-4 point. It is situated on the dorsum of the hand, between the first and second metacarpal bones, at the mid-point of the second metacarpal bone and close to its radial border. (Figure 1) Alternatively, ask the patient to adduct the thumb and the index finger; the point is located at the highest spot of the first and second metacarpal muscles.⁹

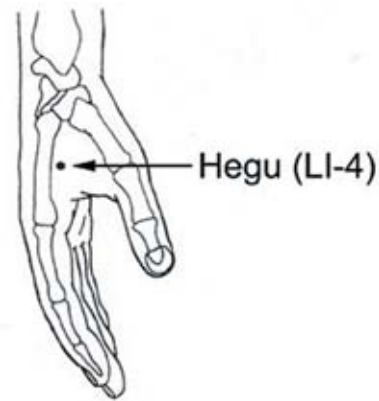


Figure 1. Illustration of the location of Hegu (LI-4) point.

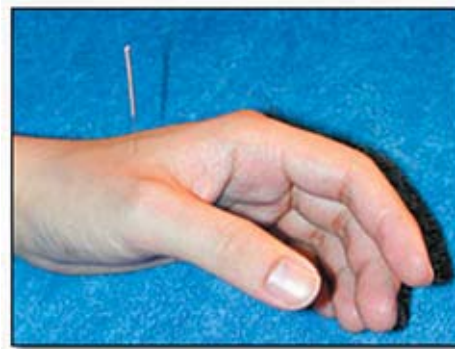


Figure 2. Insertion of needle on the Hegu (LI-4) point.

2. Insert a fine acupuncture needle 0.5–1.0 inch deep perpendicularly to the LI-4 point (Figure 2) 5 minutes prior to the orthodontic adjustment procedures on both hands. Leave the needle *in situ* throughout the procedure. The patient should feel local soreness, distension, and numbness radiating to the fingertip. Remove the needle once the procedure is completed.
3. Educate patients to employ the acupressure technique twice daily for at least 3 to 4 days or when pain is experienced. Patients should first locate the point and then press in gently with the thumb of the opposite hand, placing the fingers underneath the LI-4 point, against the palm of the hand for support (Figure 3). The patient should then press deeply and perpendicularly into the point, applying sustained pressure or small massage rotations to the point for 1 to 2 minutes. Repeat on the opposite hand.



Figure 3. Acupressure on the Hegu (LI-4) point.

4. Alternatively, acupressure may be used during the orthodontic adjustment procedure if the dentist is not confident to carry out acupuncture or if the patient is not keen to have needle insertion, although it is not as effective as acupuncture.¹⁰ Acupressure can be carried out by the patient, the dental assistant, or the dentist while in the chair.

Conclusion

With more patients willing to try alternative treatments and with increasing published data available for clinicians, the ancient Chinese practice of acupuncture has been given a new lease on life with the interpretation of western science. Not only has it been shown that acupuncture provides more than just placebo effects, it has been demonstrated in various controlled trials to have a role in the mainstream dentistry. Serious adverse effects following acupuncture are rare; however, it is the responsibility of the clinicians wishing to practice acupuncture to have a good understanding of the acupuncture philosophy and proper training in the field and, therefore, be able to prevent, recognize, and manage adverse effects when they occur.

Dental professionals who engage in the use of acupuncture should seek formal training from a qualified instructor prior to administering this treatment strategy.

References

1. Stux G, Pomeranz B. Acupuncture textbook and atlas. Berlin: Springer-Verlag; 1987.
2. Gach MR. Acupuncture's potent points, A guide to self-care for common ailments. New York: Bantam Doubleday Dell Publishing Group; 1990.
3. Ngan P, Wilson S, Shanfield J, et. al. The effect of ibuprofen on the level of discomfort in patients undergoing orthodontic treatment. *Am J Orthod Dentofac Orthop* 1994; 106: 88-95.
4. Kreisberg MK. Tricyclic antidepressants: analgesic effect and indications in orofacial pain. *J Craniomand Disorders Fac Oral Pain* 1988; 2:171-177.
5. Roth PM, Thrash WJ. Effect of transcutaneous electrical stimulation for controlling pain associated with orthodontic tooth movement. *Am J Orthod Dentofac Orthop* 1986; 90:132-138.
6. Ernst E, Pittler MH. The effectiveness of acupuncture in treating acute dental pain: a systemic review. *Br Dent J* 1998; 184:443-447.
7. Lao L, Bergman S, Langenberg P, et. al. Efficacy of Chinese acupuncture on postoperative oral surgery pain. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1995; 79:426-428.
8. Yang ZL, Ouyang Z, Cheng YG, et. al. A neuromagnetic study of acupuncturing LI-4 (Hegu). *Acupunct Electrother Res* 1995; 20:15-20.
9. Chen E. Cross-sectional anatomy of acupuncture. London: Churchill Livingstone; 1995.
10. Lu DP, Lu GP, Reed JF 3rd. Acupuncture/acupressure to treat gagging dental patients: a clinical study of anti-gagging effects. *Gen Dent* 2000; 48:446-452.

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