

# Combination of Acupuncture and Aquapuncture Using Vitamin B Complex for Treatment of Chronic Degenerative Changes of Hip Joints and Anal Relaxation in a Dog

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## *Abstract*

A beagle dog, aged 10 years old, was presented with anal relaxation. Chronic arthrosis of hip joints had been diagnosed and treated on this dog's first visit to the National Chung Hsing University Veterinary Medicine Teaching hospital. Except for unwillingness to walk on both hind limbs, pain on both hips and uncontrolled defecation due to anal relaxation, no other clinical signs were found during physical examination. The body temperature was 38.6°C. CRT was normal (less than 2 sec). Heart beat was 110 beats/min and strong pulse was palpated. Based on the Glasgow composite pain scale, the pain scale of this dog was 2. Radiology of the hips revealed moderate hip dysplasia with osteoarthritis. The dog was then treated with acupuncture twice a week for 3 weeks with the owner's consent. The local acupoints were GV-1 (Chang-qiang), Bai-hui, and GB-30 (Huan-tiao). After the treatment for 3 weeks, the dog was willing to walk with less pain on the hips during physical examination, and the defecation could be controlled by the anal sphincter. Thus, it is suggested that acupuncture may be an alternative therapy to improve the symptoms of osteoarthritis of hip joints and anal relaxation in dogs.

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**Keywords:** acupuncture, anus, degenerative change, dog

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## บทคัดย่อ

### การฝังเข็มด้วยไวดะมินปี 12 เพื่อรักษาโรคข้อสะโพกเสื่อมและรูทวารขยายตัวในสุนัข

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สุนัขพันธุ์บีเกิ้ล อายุ 10 ปี ถูกพามาที่โรงพยาบาลสัตว์ของมหาวิทยาลัย National Chung Hsing ด้วยอาการโรคข้อสะโพกเสื่อมและรูทวารขยายตัว อาการที่ตรวจพบคือ การเดินไม่สะดวก เจ็บข้อสะโพก ควบคุมการถ่ายอุจจาระไม่ได้ เนื่องจากรูทวารขยายตัว อุณหภูมิร่างกายประมาณ 38.6<sup>0</sup>ซ. CRT ปกติ อัตราการเต้นของหัวใจ 110 ครั้งต่อนาที ค่าคะแนนความเจ็บปวดตาม Glasgow composite pain score เท่ากับ 2 รังสีวินิจฉัยพบการเสื่อมของข้อสะโพกร่วมกับข้ออักเสบ สุนัขได้รับการรักษาโดยใช้การฉีดไวดะมินปี 12 ที่จุดฝังเข็ม สัปดาห์ละสองครั้ง ติดต่อกัน 3 สัปดาห์ โดยจุดที่ใช้ในการฉีดได้แก่ จุด GV-1 (Chang-qiang), Bai-hui และจุด GB-30 (Huan-tiao) ผลการรักษาภายหลัง 3 สัปดาห์พบว่าสุนัข อาการดีขึ้นเป็นที่น่าพอใจ

**คำสำคัญ:** การฝังเข็ม รูทวาร โรคข้อสะโพกเสื่อม สุนัข

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## Introduction

Degenerative joint disease (DJD) can be classified as primary and secondary, depending on the etiology. Primary DJD occurs for unknown reason but is associated with a disorder of aging in which cartilage degenerates (Fossum, 1997). Actually, it has been reported that the clinical signs of coxofemoral joint problem are associated with the effect of time in some breeds of dogs (Krontveit et al., 2012). DJD can elicit pain during palpation or through observation of behavioral change. Some drugs such as butorphanol, fentanyl, and morphine have been reported to be used for pain management. The real cause of uncontrolled leakage of stool in this dog was unknown. However, lumbar spinal disorders may be concerned (Shi et al., 2011). The application of acupuncture has been reported in human with lumbar spinal disorders such as lumbar spinal stenosis (Lu et al., 2012), lumbar spinal herniation (Ma et al., 2011; Shan, 2011), treatment of anal-intestinal diseases (Wang and Zhang, 2002), as well as chronic bursitis of hip joint (Zhou, 2011). In dog, acupuncture has been applied for pain alleviation (Laim et al., 2009), treatment of intervertebral disk disease (Hayashi et al., 2007), chronic elbow joint arthritis (Kapatkin et al., 2006), as well as low IOP (Shia et al. 2011). Besides the effect of acupuncture, drugs sometimes are required to be injected into the acupoints to improve the effect of treatment, which is called aquapuncture.

Aquapuncture has been used on the sedation of horses (Luna et al., 2008) and on the maintenance of IOP (Shia et al., 2011). In this case, the dog suffered from DJD and anal relaxation, and we suggest that acupuncture/aquapuncture might be an alternative treatment to alleviate the pain of DJD and improve anal relaxation. The purpose of this case report was to provide an alternative treatment for dog's with chronic pain and functional disorders.

**Case history:** A dog (10 years old, weighing 16 kg, intact male) with weakness of both hind limbs and anal relaxation was presented. This dog was presented to the Veterinary Teaching Hospital (VMTH), National Chung Hsing University, Taichung, Taiwan in 2011 with reluctance to walk and was treated with Mobic® (Meloxicam, Boehringer Ingelheim, Spain) 0.1 mg/kg orally s.i.d. In 2012, this dog revisited and the chief complaint of this dog was uncontrolled defecation due to anal relaxation and reluctance to walk due to pain on both hips.

**Clinical examination:** Except unwillingness to walk and uncontrolled defecation due to the relaxation of anus (Fig 1), this dog was in normal condition after physical examination. The body temperature was 38.6<sup>0</sup>C. CRT was normal (less than 2 sec). Heart beat was 110 beats/min and strong pulse was palpated. Based on the Glasgow composite pain scale, the pain scale of this dog was 2. According to the physical

examination and pain scale, radiological examination was pursued. Extended ventrodorsal radiography of the coxofemoral joints revealed degenerative joint diseases with osteophyte formation around the acetabulums and femoral necks (Fig 2).

### Results and Discussion

**Method of treatment:** This dog had received Mobic® (0.1 mg/kg, orally s.i.d.) for pain management and unwillingness to walk, but the effect was limited. After further evaluation and owner's consent, acupuncture and aquapuncture was applied alternately on this dog. We stimulated acupoints GV-1 (Chang-qiang, located at the dorsal midline between the anus and the ventral aspect of the tail), Bai-hui (located at the dorsal midline between L7 and S1 vertebra), GB-30 (Huan-tiao, located in the depression midway between the greater trochanter of the femur and the tuber ischii) by 1 ml syringe with 26G specified needle which is 13 mm in length containing vitamin B complex (Tai Yu®, Taiwan, 0.1 ml/point) every week in this dog (Fig 3). The level of anal relaxation and uncontrolled defecation, and the willingness to walk of the dog were observed and recorded every week. After 3 weeks of treatment, the level of relaxation of anal sphincter was improved and no more uncontrolled leakage of stool was found (Fig 4). The pain score of Glasgow composite pain scale was 0. It was better and almost back to normal.

At the beginning of treatment, the pain score of the dog was 2 based on the Glasgow composite pain scale. This dog had received the treatment for reluctance to walk of both hind limbs by Meloxicam for pain management, but the dog showed no improvement. Perhaps it can be caused by non-inflammatory reaction or/and less effect due to species specificity. Acupuncture and aquapuncture was applied alternately on this dog. Uncontrolled defecation of dogs is usually associated with the weakness of anal sphincter. The defecation is accompanied by a giant contraction of distal colon mostly and little part originated at rectum. Before the contraction happens, the rectum has relaxed. The internal anal sphincter, meanwhile, relaxes. Then, migration of giant contraction to the rectum occurs. Rectal relaxation, contraction sequence and sphincter relaxation play important roles during defecation. Therefore, defecation is a consequence of successive phenomena occurring in both the colon and anorectum (Matsufuji et al., 1998). Besides, the activity of defecation is related to enteric nervous system which organizes such coordinated motility and controls the movement of intra anal sphincter (Matsufuji and Yokoyama, 2003). The real cause of uncontrolled leakage of stool in this dog was unknown. However, lumbar spinal disorders may be concerned (Shi et al., 2011).

The application of acupuncture has been reported in human with lumbar spinal disorders such as lumbar spinal stenosis (Lu et al., 2012), lumbar spinal herniation (Ma et al., 2011; Shan, 2011), treatment of anal-intestinal diseases (Wang and Zhang, 2002), as well as chronic bursitis of hip joint (Zhou, 2011). In

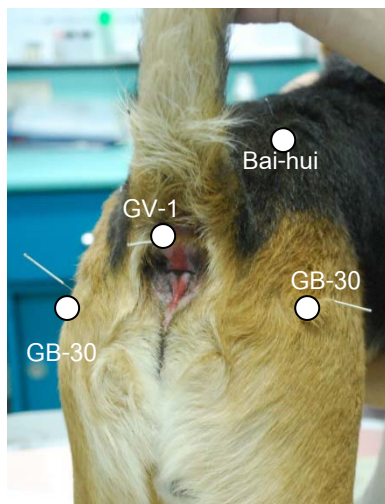
dog, acupuncture has been applied for pain alleviation (Laim et al., 2009), treatment of intervertebral disk disease (Hayashi et al., 2007), chronic elbow joint arthritis (Kapatkin et al., 2006), as well as low IOP (Shia et al. 2011). Besides the effect of acupuncture, aquapuncture is beneficial to the treatment. Aquapuncture has been used for the sedation of horses (Luna et al., 2008). In this study, we stimulated acupoints GV-1, Bai-hui and GB-30. The attributes and indication of GB-30, GV-1 and Bai-hui have been shown to ease coxofemoral joint pain and improve paresis or paralysis of the anal sphincter by acupuncture (Xie and Vanessa, 2007). Additionally, it has been reported that the improvement of uncontrolled leakage of stools and unwillingness to walk in this dog may be the result of some ingredients of vitamin B complex used (Tadano et al., 1995). In conclusion, aquapuncture using vitamin B complex was useful for the improvement of anal sphincter contractibility and chronic arthrosis, and it may be an alternative medical treatment in veterinary medicine.



**Figure 1** Extended ventrodorsal radiography of the hips. Moderate hip dysplasia is observed. The femoral joints are subluxated with osteophyte formation on both femoral necks and on the right cranial effective acetabular margin. Remodeling of both femoral heads is observed.



**Figure 2** Anal relaxation



**Figure 3** The caudal view of this dog and acupoints, GV-1, Bai-hui and GB-30 used for the treatment of anal relaxation and degenerative change of hip joint.



**Figure 4** The improvement of anal relaxation after 3 weeks acupuncture and aquapuncture.

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### References

- Fossum, T.W. 1997. Treatment of perioperative pain. In: *Small Animal Surgery*. St. Louis: Mosby. 86-87, 888
- Hayashi, A.M., Matera, J.M. and Fonseca Pinto, A.C. 2007. Evaluation of electroacupuncture treatment for thoracolumbar intervertebral disk disease in dogs. *J Am Vet Med Assoc*. 231: 913-918.
- Kapatkin, A.S., Tomasic, M., Beech, J., Meadows, C., Boston, R.C., Mayhew, P.D., Powers, M.Y. and Smith, G.K. 2006. Effects of electrostimulated acupuncture on ground reaction forces and pain scores in dogs with chronic elbow joint arthritis. *J Am Vet Med Assoc*. 228: 1350-1354.
- Krontveit, R.I., Trangerud, C., Sævik, B.K., Skogmo, H.K. and Nødtvedt, A. 2012. Risk factors for hip-related clinical signs in a prospective cohort study of four large dog breeds in Norway. *Prev Vet Med*. 103: 219-227.
- Laim, A., Jaggy, A., Forterre, F., Doherr, M.G., Aeschbacher, G. and Glardon, O. 2009. Effects of adjunct electroacupuncture on severity of postoperative pain in dogs undergoing hemilaminectomy because of acute thoracolumbar intervertebral disk disease. *J Am Vet Med Assoc*. 234: 1141-1146.
- Lu, W.F., Kou, S.T. and Ni, J.L. 2012. Clinical observation on the long-term effect of warming-promotion acupuncture on lumbar spinal stenosis. *Zhongguo Zhen Jiu*. 32: 17-20 (in Chinese).
- Luna, S.P., Angeli, A.L., Ferreira, C.L., Lettry, V. and Scognamiglio-Szabó, M. 2008. Comparison of pharmacopuncture, aquapuncture and acepromazine for sedation of horses. *Evid Based Complement Alternat Med*. 5: 267-272.
- Ma, W.Z., Zhang, Y.M., Yuan, H. and Wang, W.Y. 2011. Effects of balance-acupuncture stimulation of "back pain" and "hip pain" points on plasma beta-endorphin and ACTH contents in rats with lumbar disc herniation. *Zhen Ci Yan Jiu*. 36: 357-360 (in Chinese).
- Matsufuji, H., Yokoyama, J., Hirabayashi, T., Watanabe, S. and Sakurai, K. 1998. Cooperative roles of colon and anorectum during spontaneous defecation in conscious dogs. *Dig Dis Sci*. 43: 2042-2047.
- Matsufuji, H. and Yokoyama, J. 2003. Neural control of the internal anal sphincter motility. *J Smooth Muscle Res*. 39: 11-20.
- Shan, Y.L. 2011. Observation on therapeutic effect of electroacupuncture at Jiaji (EX-B 2) and points of bladder meridian mainly for lumbar disc herniation. *Zhongguo Zhen Jiu*. 31: 987-990 (in Chinese).
- Shi, J., Jia, L., Yuan, W., Shi, G., Ma, B., Wang, B. and Wu, J. 2010. Clinical classification of cauda equina syndrome for proper treatment. *Acta Orthop*. 81: 391-395.
- Shia, W.Y., Hsiao, Y.H., Lee, M.W., Shiu, L.S., Lin, S.L. and Lee, W.M. 2011. Aquapuncture using vitamin B complex on intraocular pressure in two dogs with cataracts and low intraocular pressure. *Thai J Vet Med*. 41: 235-238
- Tadano, T., Asao, T., Aizawa, T., Sakurada, S., Abe, Y., Yonezawa, A., Ando, R., Arai, Y., Kinemuchi, H. and Kisara, K. 1995. Immunohistochemical determination of rat spinal cord substance P, and antinociceptive effect during development of thiamine deficiency. *Brain Res*. 696: 21-29.
- Wang, W. and Zhang, J. 2002. Clinical observation on 100 cases of postoperative pain of anal-intestinal diseases treated with vitamin K blocking at changqiang point. *J Tradit Chin Med*. 22: 280-281.
- Xie, H. and Vanessa, P. 2007. *Xie's Veterinary Acupuncture*. Oxford: Blackwell: 188-225.
- Zhou, R.M. 2011. Surrounded needling at great trochanter mainly for 42 cases of chronic bursitis of hip joint. *Zhongguo Zhen Jiu*. 31: 1025-1026 (in Chinese).