

## **The One Acupuncture Point Everyone Should Know: GV 26**

**Narda G. Robinson, DO, DVM, MS, FAAMA**

Acupuncture enjoys wide popularity as a method of pain control, but it can also serve an important role in critical care. Its use in emergency settings most commonly involves resuscitation. In the Critical Care Unit at the Colorado State University Veterinary Medical Center, needling the point “Jen Chung”, or GV 26, is routinely performed in animals suffering cardiac or respiratory arrest, once conventional procedures are underway. The method involves inserting a 25g hypodermic needle deeply into a point ventral to the nasal planum until it reaches the underlying bone or cartilage. Vigorous needle manipulation follows, usually with a pecking motion.

### **A Point by Any Other Name...**

The point’s name “Jen Chung” appears mainly in research papers but not in acupuncture atlases. Its other Chinese names include “Ren Zhong” and “Shui Gou”. “Ren Zhong” refers to the philtrum on which it sits, but it also means “Man’s Middle”. “Man’s Middle” alludes to the point’s position near the intersection of the most Yang acupuncture channel, the Governor Vessel (GV) channel with the most Yin, the Conception Vessel (CV) channel. GV courses along the dorsal midline and arrives at the face; CV travels along the ventral midline to meet GV at the mouth. According to Chinese cosmology, “man” resides between heaven or the sky, which is “Yang”, and earth, which is Yin. “Ren Zhong” connects the two. Yin and Yang represent the two complementary poles of existence. Separating the two causes loss of consciousness or, in the extreme, death. From this metaphoric perspective, needling “Man’s Middle” serves to re-establish Yin-Yang harmony. The other name, “Shui Gou”, translates as “Water Ditch”, probably relating to its location in the groove of the upper lip, along which nasal drainage could flow.

Acupuncturists in the United States may be more familiar with Jen Chung’s alphanumeric classification as “GV 26”. “GV 26” indicates that it is the 26<sup>th</sup> point along the Governor Vessel, or GV, channel. GV 26 in humans lies one-third the distance from the nose to the upper lip. Veterinarians transposing human points to non-humans have placed the point at the intersection of the planum and philtrum of the upper lip in dogs and cats.

### **Anatomy of GV 26**

The indications of acupuncture points often become apparent after analyzing their key anatomical features. Tissues associated with GV 26 receive sympathetic fibers from the cervical sympathetic ganglia. Trigeminal nerve branches provide sensation to the skin and underlying structures. A recent study in the *Journal of Comparative Neurology* showed that sensory-sympathetic

and sensory-parasympathetic fiber combinations occur in blood vessels of the face.<sup>1</sup> Intimate interconnections between sensory and autonomic fibers serve to regulate microcirculation. These communications may also mediate autonomic responses to afferent stimulation provided by acupuncture.

### **Physiology of GV-26**

Acupuncture at GV 26 activates the sympathetic nervous system. This elevates catecholamine levels, increases cardiac output and stroke volume. Furthermore, stimulation of extracranial trigeminal nerve fibers can increase cortical cerebral blood flow.<sup>2</sup> Electrical stimulation at 2 Hz delivered to sympathetic fibers of the nose can cause vigorous sympathetic activation, exhibited as strong vasoconstriction of nasal mucosal blood vessels.<sup>3</sup> Two cycles of stimulation per second (i.e., 2 Hz) approximates the frequency of pecking GV 26 during resuscitation maneuvers. Combined, these neurophysiologic responses help explain GV 26's role in reversing cardiorespiratory collapse and loss of consciousness.

Sometimes, stimulation of the same acupuncture point under different clinical conditions can produce opposite responses. The reason for this is that acupuncture works by neuromodulation, which may raise or flatten physiologic reactions, based on the direction needed for homeostasis. The latest functional brain imaging studies on acupuncture illustrate such modulatory neural and autonomic responses in various parts of the brain, including the limbic, paralimbic, and subcortical gray areas, as well as the cerebellum.<sup>4</sup>

### **Evidence of effectiveness**

Research literature attesting to the effectiveness of GV 26 in treating cardiovascular depression began appearing in the English language veterinary literature in the 1970's. Over the two decades, numerous papers documented the sympathomimetic effects of GV 26 in various species.<sup>5 6 7 8 9 10</sup> Further

---

<sup>1</sup> Ruocco I, Cuello AC, Parent A, and Ribeiro-Da-Silva A. Skin blood vessels are simultaneously innervated by sensory, sympathetic, and parasympathetic fibers. *The Journal of Comparative Neurology*. 2002;448:323-336.

<sup>2</sup> Gurelik M, Karadag O, Polat S, Ozum U, Aslan A, Gurelik B, Goksel HM. The effects of the electrical stimulation of the nasal mucosa on cortical cerebral blood flow in rabbits. *Neuroscience Letters*. 2004;365:210-213.

<sup>3</sup> Franke FE. Sympathetic control of the dog's nasal blood vessels. *Proceedings of the Society for Experimental Biology and Medicine*. 1966;123(2):544-547.

<sup>4</sup> Hui KKS, Liu J, Marina O, Napadow V, Haselgrove C, Kwong KK, Kennedy DN, and Makris N. The integrated response of the human cerebro-cerebellar and limbic systems to acupuncture stimulation at ST 36 as evidenced by fMRI. *Neuroimage*. 2005;27:479-496.

<sup>5</sup> Lee DC, Lee MO, and Clifford DH. Cardiovascular effects of acupuncture in anesthetized dogs. *Am J Chin Med*. 1974;2:271.

<sup>6</sup> Lee DC, Lee MO, and Clifford DH. Cardiovascular effects of moxibustion at Jen Chung (Go-26) during halothane anesthesia in dogs. *Am J Chin Med*. 1975;3:245-261 .

studies showed that pretreatment with either alpha or beta blockers inhibited the sympathomimetic effect.<sup>11 12 13</sup> Needling adjacent regions as “sham acupuncture” points failed to result in significant changes in cardiovascular function.<sup>14</sup> More recently, a report on using GV 26 for resuscitation of neonatal kittens delivered by cesarean section demonstrated success following unproductive cardiopulmonary resuscitation attempts.<sup>15</sup>

### **Not a Fail-Safe Method**

Does GV 26 work in all cases? No. The stimulation type, (i.e., manual needle twirling, pecking, electrocautery, or heating by applying a burning herb (moxibustion)) may cause different results. Other variables include the species being treated, drugs administered, level of anesthesia, etc. For example, in one study on ponies, GV 26 was unable to stimulate the cardiovascular system when the anesthetic dose of halothane exceeded the minimum alveolar concentration.<sup>16</sup> (Halothane is a sympathetic antagonist.) A study on humans showed that electroacupuncture on GV 26 post-surgically blunted expected elevations in sympathetic tone during the early postoperative anesthetic emergence period. The authors concluded that electroacupuncture on GV 26 in the early postoperative period may promote hemodynamic stability by attenuating plasma catecholamine fluctuations.<sup>17</sup>

In the past, confusion arose when researchers would report widely disparate autonomic results after needling the same site. Now, however, recognition that

---

<sup>7</sup> Lee DC, Yoon DS, Lee MO, and Clifford DH. Some effects of acupuncture at Jen Chung (Go-26) on cardiovascular dynamics in dogs. *Can J Comp Med.* 1977; 41:446.

<sup>8</sup> Lee DC, Lee MO, Clifford DH, and Morris LE. The autonomic effects of acupuncture and analgesic drugs on the cardiovascular system. *Am J Acupuncture.* 1982;10(1):5-30.

<sup>9</sup> Davies A, Janse J, and Reynolds GW. Acupuncture in the relief of respiratory arrest. *New Zealand Veterinary Journal.* 1984;32:109-110.

<sup>10</sup> Chang C-L, Lee JC, Tseng C-C, Chang Y-H, and Cheng J-T. Decrease of anesthetics activity by electroacupuncture on *Jen-Chung* point in rabbits. *Neuroscience Letters.* 1995;202:93-96.

<sup>11</sup> Lee DC, Lee MO, Clifford DH, and Morris LE. Inhibition of the cardiovascular effects of acupuncture (moxibustion) by propranolol in dogs under halothane anesthesia. *Canad Anaesth Soc J.* 1976;23:307-318.

<sup>12</sup> Lee MMO, Lee DC, and Clifford DH. Inhibition of the cardiovascular effects of acupuncture (moxibustion) by phentolamine in dogs during halothane anesthesia. *Am J Chin Med.* 1976;4:153.

<sup>13</sup> Lee DC, Lee MO, and Clifford DH. Modification of cardiovascular function in dogs by acupuncture: a review. *Am J Chin Med.* 1976;4(4):333-346.

<sup>14</sup> Lee DC, Yoon DS, Lee MO, and Clifford DH. Some effects of acupuncture at Jen Chung (Go-26) on cardiovascular dynamics in dogs. *Can J Comp Med.* 1977; 41:446-454.

<sup>15</sup> Skarda RT. Anesthesia case of the month. *JAVMA.* 1999;214(1):37-39.

<sup>16</sup> Dill SG, Gleed R, Matthews NS, Erb HN, and Miller TK. Cardiovascular effects of acupuncture stimulation at point Governing Vessel 26 in halothane-anesthetized ponies. *Am J Vet Res.* 1988;49(10):1708-1712.

<sup>17</sup> Tseng C-C, Chang C-L, Lee J-C, Chen T-Y, and Cheng J-T. Attenuation of the catecholamine responses by electroacupuncture on Jen-Chung point during postoperative recovery period in humans. *Neuroscience Letters.* 1997;228:187-190.

acupuncture can influence neural function in a bidirectional, rather than unidirectional manner, helps reconcile conflicting findings.<sup>18</sup>

---

<sup>18</sup> Lee MHM and Ernst M. Pain Clinic #4. The sympatholytic effect of acupuncture as evidenced by thermography: a preliminary report. *Orthopaedic Review*. 1983;12(9):67-72.