

Principals of Kata Training

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This is the fourth in a sequence of articles that describe the core principals of Okinawan Karatedo in the Goju Ryu system. Previous articles have focused on hard principles of structure, movement, and breathing [Labbate1999], intermediate principals associated with building, controlling, and transferring internal energy [Labbate2000], and soft principals associated with making contact, following, and controlling an opponent [Labbate2001]. This article builds upon these ideas and incorporates them into a general set of Kata training principals. Kata are stylized fighting forms, or sequences, developed over the centuries and based on actual combat experience. Here the ideas are illustrated through the study of Seiunchin Kata, however, each Kata in the Goju Ryu system can be developed with the same ideas.

Every kata exists at many levels of sophistication and can be studied from a broad variety of viewpoints. At the most basic level, a kata is simply a pattern of movements that train typical fighting scenarios. At the most advanced level, a Kata is a sequence of dangerous vital point strikes that can cause paralysis, unconsciousness, or death. Between these extremes are levels of development to which the masters of old tightly controlled access. The highest levels were transmitted orally to only a chosen son, or in the absence of a son, to a top student. This control was not simply to provide an advantage in combat; it provided safeguards to ensure that the information was transmitted to only those who proved to be of the appropriate spiritual and moral background; people who would exercise social responsibility in their teaching and use of the ideas. In modern times these controls have been sadly undermined for commercial gain. A number of books and seminars have appeared that teach extremely dangerous techniques without integrity or an appreciation of the medical implications of the concepts. This article takes some techniques from Seiunchin kata that have recently become well known, and explores their devastating significance to underlie the importance of responsible teaching methods.

Basic Kata Training

At its heart, every kata contains a sequence of basic moves that must be memorized by the student. For example, the opening movements of the Seiunchin Kata are shown in Figure 1. Initially the right foot moves forward 45 degrees into a straddle leg stance (*shiko dachi*) and both hands are chambered (a). Once in *shiko dachi*, both hands move straight up simultaneously to a spear-hand strike (*morote sukui uke*) and are placed back to back as they reach chin level (b); The elbows in this position should be about a fist distance from the ribs, the fingertips are at chin height and are pointed upwards. Remaining in *shiko dachi*, both hands then perform an augmented downward block (*morote gedan uke*) (c). Both hands then make a right upward scooping block (*sukui uke*);

the right hand palm faces upwards while performing the block while the left hand moves into an open handed chambered position (d). While keeping the left hand chambered, a right hand hooking block (*kaki uke*) is then performed (e). Finally, the left hand performs a finger thrust (*hira nukite tsuki*) as the right hand draws back to a chamber position facing downward (f).

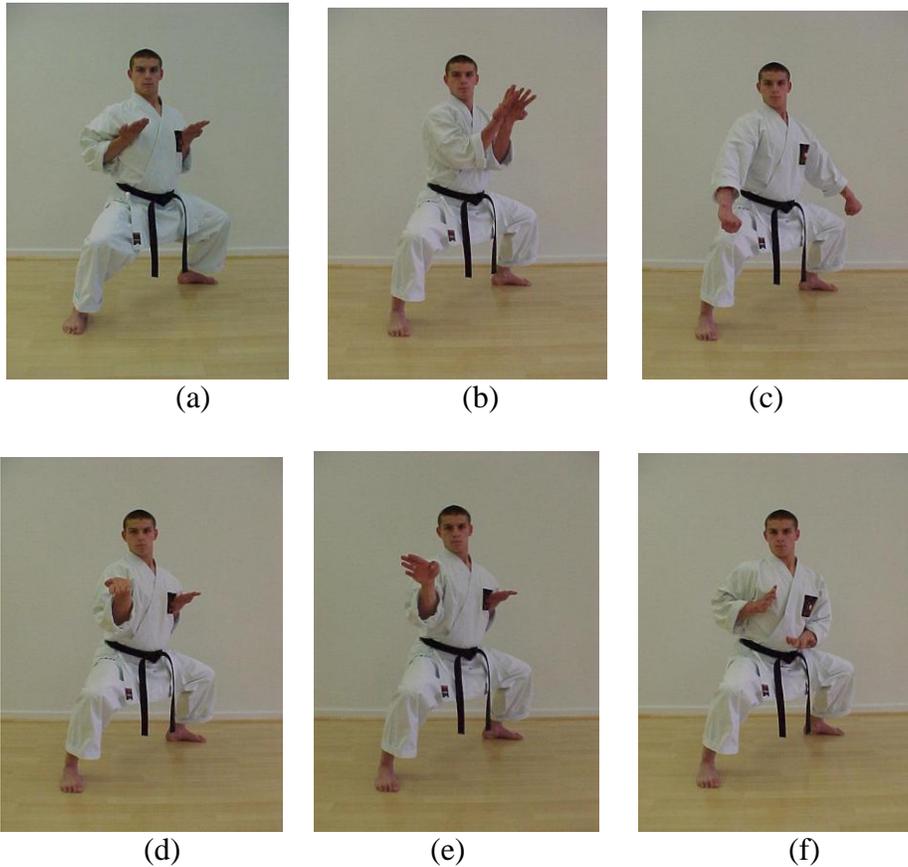


Figure 1: Seiunchin Kata

The constant repetition of this basic pattern, over a period of years, consisting of literally thousands of repetitions, perfects the basic motor movements associated with the pattern and develops concentration and focus. The kata should be performed in every direction, beginning by facing north, south, east, or west. Eventually, from any given starting position, the student should be able to complete the kata, ending at the original starting position, facing in the starting direction. As a result of this training process, muscle memory develops such that in a real combat situation, the associated response to an attack occurs automatically and without thought.

Intermediate Kata Training

There is a significant difference between learning a kata, and *training* a kata. Every student is endowed with a level of *endurance*, *strength*, and *speed* that form the primary abilities for performing kata. Endurance is the ability to continue working despite the

onset of fatigue and is directly tied to cardia-respiratory performance and correct breathing. Often students may hold their breath while performing a kata leading to fatigue, tension, and sloppy technique; upon completion they may stand gasping for air. Alternatively, due to nervousness or tension they may breath too quickly and are thus susceptible to hyperventilation. There are several methods to improve endurance including repetitions of kata and cross-training with other activities such as running, cycling, or skiing. Strength is the ability to overcome resistance and can be improved by weight training with a variety of traditional Okinawan training implements or with modern weight training equipment. Finally speed is the ability to move quickly. Studies of world-class athletes indicate a higher level of twitch muscles thus speed is tied directly to genetic makeup. To increase speed requires that the student utilize economy of motion so as to reduce wasted energy; therefore speed is directly tied to improved quality in performing karate techniques. For example, reducing the motion of the shoulder muscle groups during blocks and punches.

Students typically memorize a kata at a given level and then use repetition to improve these primary abilities. However, there are several alternative training methods that can be incorporated into practice to not only improve physical performance but also achieve harmony between mind and body. These methods systematically isolate and improve a particular aspect of the kata. They allow the student to step back and assess weaknesses in need of additional practice. Each method emphasizes and develops a core set of principals from the Goju Ryu system.

Hard Principals. Initially, the kata is performed using the hard principals associated with Sanchin kata [Labbate99]. This isolates and develops the principals of structure, movement, and breathing. The kata is performed slowly, with strong tension, paying close attention to transitioning and positioning. Each blow is supported from the entire shoulder muscle group and locked down at the end of each motion. Movement between stances is accomplished at the same level, without causing the body to bob up and down, or move from side to side. Mental focus allows the weight of the body to be lowered into the stance such that each technique is performed with the body firmly rooted to the ground and supported by correct positioning. In shiko dachi the legs and feet are positioned at 90 degrees to each other, and the foreleg is at 90 degrees to the ground. The back remains straight and supported, the feet move though an arc that bisects the stride. Breathing is coordinated with movement: inhalation occurs between techniques in Seiunchin, and exhalation occurs on each technique. All of these concepts arise directly from the study of Sanchin kata.

The hard principals are then developed further through exaggeration with weight resistance to enhance both speed and strength. The kata can be performed with traditional training implements such as weighted shoes (geka) and dumbbells (sashi) as shown in Figure 2a, or straw grips shown in Figure 2b. Modern wrist and ankle weights, and weight vests, shown in Figure 2c can also be used that provide additional resistance. It is important when training with these implements that full power is not developed into each technique, this can lead to pulled muscles and strains. Instead the student reduces power

to focus on positioning and strength. When the weights are removed, speed will increase naturally.

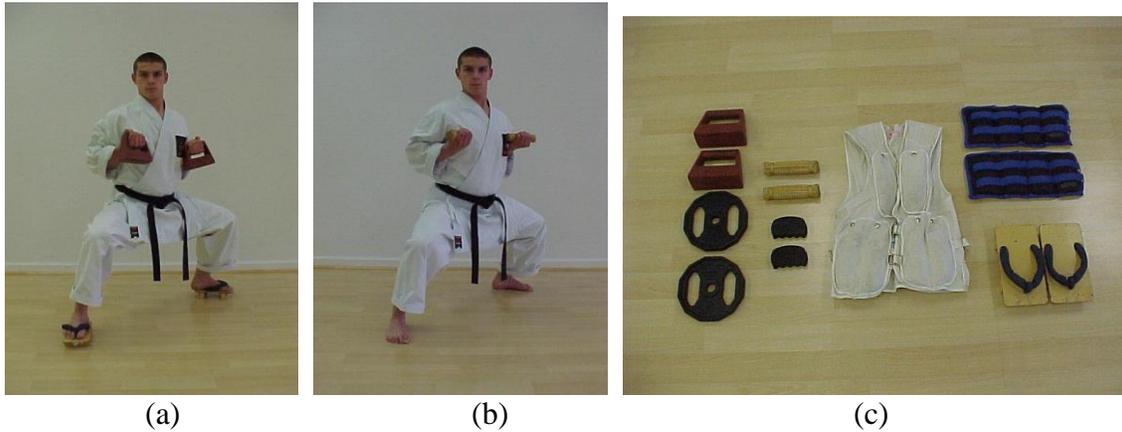


Figure 2: Resistance Training

Speed Training. In speed training the kata is performed as fast and explosively as possible without attention to form or technique. No power or tension is applied in this method, and the techniques are allowed to flow continuously into each as fast as possible. This method deliberately isolates and improves kata performance speed.

Form Training. The goal of form training is to develop perfect technique. The kata is performed slowly with no power or speed. At every movement, stance, position, and form are carefully examined and corrected. Distancing and angles on stances are adjusted, hand techniques are adjusted for correct positioning, and transitions are performed with circular motions. Breathing and movement are carefully coordinated and at the conclusion of each technique the body should be centered and aligned correctly [Labbate2000].

Rhythm and Tempo. Every kata has a prescribed cadence or *rhythm* by virtue of the order of techniques in each fighting sequence. For example, in Seiunchin, the motions from the entry to sumo stance (Figure 1a) through to the spear hand strike in (Figure 1f) correspond to a single sequence. Each movement in the sequence is performed slowly on a slow count of four, except for the movement in Figure 1e, which is performed on a slow count of two. The complete sequence is repeated three times at the beginning of the kata, first to right, then to the left, and finally to the right again. There is a slight pause designating the transition between sides and each sequence should be performed symmetrically: A movement on the left, corresponding in length and speed to the same movement on the right. Rhythm training focuses attention on consistency and the balance of timing throughout the kata.

The tempo at which the movements of a kata are performed is dependent on the capabilities of the student. Every student is endowed with a level of strength and speed that improve naturally as training proceeds. Most students exert either too much power, or too much speed in their practice. This results in poor form, balance, and symmetry, or

over exertion and fatigue. By focusing on tempo, the student learns to harmonize speed and power. The kata is performed as fast a possible, while attempting to maintain form, deliver maximal power in each strike, and correctly lock down the muscle groups at the end of each movement. If the speed is too fast, there is a noticeable sloppiness in form, and as a result strikes loose their power and are ineffective. Conversely, if the kata is performed with too much power, then it will cause jerky and slow motions that will result in fatigue. Tempo training aims to push the boundary of this relationship.

Power Training. Power training is an advanced method based on the *karate drum*. In this technique energy is transferred into techniques from the abdomen (*tan tien*) through a subtle shaking motion at the hips [Labbate2000, Labbate2001]. The technique allows the student to load energy into a technique, transfer it, lock down the technique using Sanchin style structure, and rebound in to a countering movement. Figure 3 shows how the movements in Figures 1a, 1b, and 1c are adapted in this method. The guiding principal is that the reverse hand moves first. Notice, in Figure 3, how the left hand and hip (reverse in the stance) lead the right. This movement sets up the correct motion to load energy such that subsequent movements rebound into an opponent.

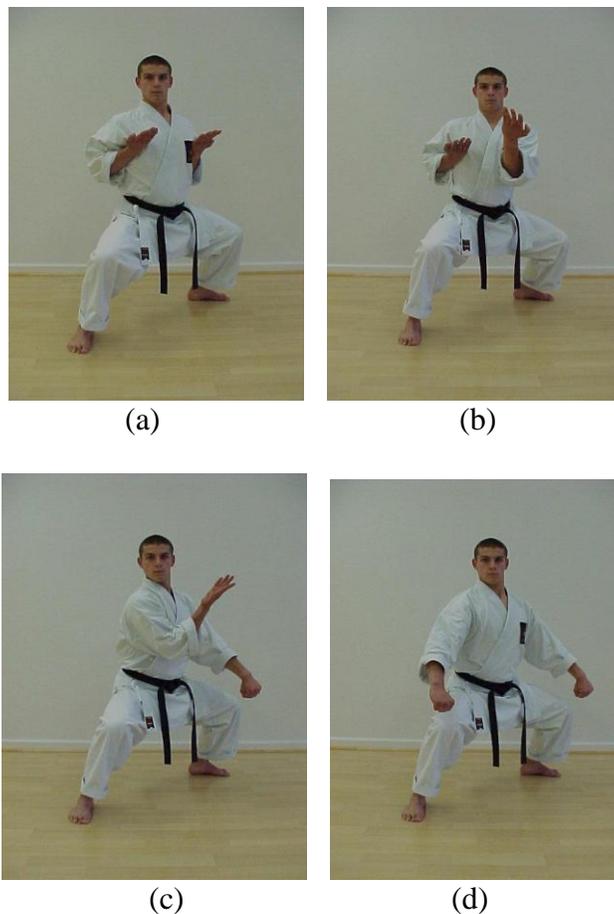


Figure 3: Power Training

Focus Training. All of the previous training methods are on the physical level. Unfortunately, a Kata performed simply as a sequence of moves is like a book with blank pages. To breath life into the kata it is necessary to be able to visualize the fighting movements. Focus training harmonizes speed, power, and technique at normal speed by developing *intent*. Each movement in a kata is designated a basic level application; for Seiunchin two such applications are developed later in this paper. The masters of old specifically chose the basic application so as to allow students to visualize an opponent but protect the more dangerous secrets associated with the kata. In this manner, students were kept at a particular level until their level of social responsibility and humility were established and trusted.

Meditation Training. Meditation isolates and develops the mental aspects in order to create mind-body harmony and enhance fighting intent. It allows a student to learn about him or herself and assess their strengths and weaknesses. This training method aligns intent with physical training on a subconscious level, so that each movement has a clear purpose.

Meditation can be accomplished in any location or position, for example in the kneeling position (seiza) at the dojo or when simply lying in bed. The student clears the mind and imagines him or herself in an attractive location, perhaps on a beach, at a park, or in the dojo. Then the student mentally performs the entire kata as if watching a video. Any of the intermediate training methods can be adopted during meditation in order to focus on a specific aspect of kata training. The result of this meditation process is that the physical performance of the kata is enhanced by the understanding and awareness developed through meditation.

Partner Training. All of the previous training methods focus on independent development and improvement, intended to give a student an understanding of their own level and ability. Partner training is intended to develop and understanding of an opponent -- their speed, strength, and ability. Further it allows new concepts to be developed such as timing, balancing, and distancing. Generally, sequences from each kata are taken separately and practiced using a variety of positions with the attacker standing in front, behind or to the side, or with the defender placed at a disadvantage against a wall or on the ground. The intent is for the students to understand the different modes of attack a particular kata sequence is able to deal with, and to be able to recognize a given situation in combat. Having first made contact it is also valuable for the defender to close their eyes and follow the movements of the attacker through contact, attempting to stick, redirect, and counter their movements [Labbate2000, Labbate2001].

Partners are joined in friendship and collaboration to help each other improve their skills, timing, and reflexes. It is the instructor's responsibility to ensure that this perspective is transmitted to students. If partner training is allowed to degenerate into a contest then the value is lost and it becomes simply an issue of winning and ego, rather than an exercise to elevate the skill level.

Advanced Kata Training

Advanced kata training is focused around the designation of *targets* and the development of applications to attack them. There are two additional components to the applications: The first involves a variety of joint and wrist locks, arm bars, chokes, and throws (*tuite*), the second involves vital point striking (*kyusho jitsu*). The intent is to apply force to *carefully chosen* points of weakness by understanding the opponent, overcoming their strength or speed, undermining their balance, or smoothly and effectively countering their movements. This is significantly different from blindly performing a given set of movements, in a preset order, toward a general area of the body, such as the head or chest. Applications, like all elements of training have several levels, of sophistication; here these levels are examined and their medical impact assessed.

Basic Level Application 1. Figure 4 shows how the opening sequence from Seiunchin kata can be used to counter an opponent that attempts to grab both hands (a). The counter move is to escape the grab by raising both arms upward in a middle block fashion (b). The defender then counter attacks by grabbing the attacker's wrists (c) and performing a knee kick to the groin (d).

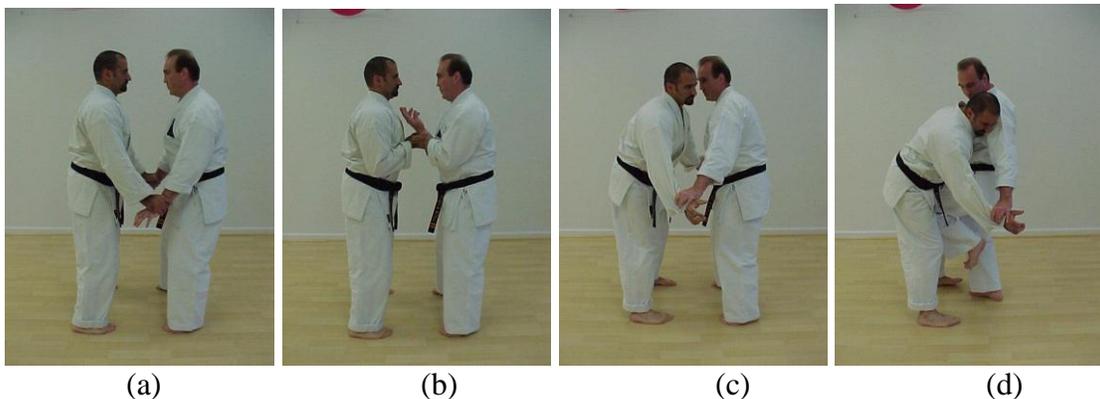


Figure 4: Attacker attempts to Grab

Medical Implications. The knee kick to the groin in this application, Figure 4d, will cause immense pain and be debilitating due to the sensory nerves in the genitals. The attacker will experience any or all of the following: pain, shock, nausea, vomiting and loss of breath or consciousness. A solid kick can fracture the pubic bone and rupture the bladder. The weakest area is the center of the pubic bone. Once the bone is fractured the opponent will be rendered in a prone position due to the nauseating pain experienced.

Once injured, blood and urine will collect in the abdominal cavity causing tenderness and pain. Typically the individual will experience an inability to urinate more than a few drops of bloody urine. If untreated, infection may become an added complication. A direct kick can crush the testes and scrotum against the pubic bones resulting in castration.

Basic Level Application 2. An alternative application of the kata can be used if the attacker attempts to grab at the lapels as shown in Figure 5a. Initially the attackers' hands are covered and grabbed with the defenders left hand. While the defenders left hand applies a wristlock on the opponent's left hand, the defenders right performs a palm-heel strike into the attackers groin (b); this corresponds to the Figure 1d in the kata. While the defenders left hand continues to maintain a wristlock on the opponent, the defenders right hand grabs the attackers lapel (c); this corresponds to Figure 1e in the kata. Finally, the defender pulls into a chamber position while applying a left shuto-strike to the ear (d); this corresponds to Figure 1f in the kata.

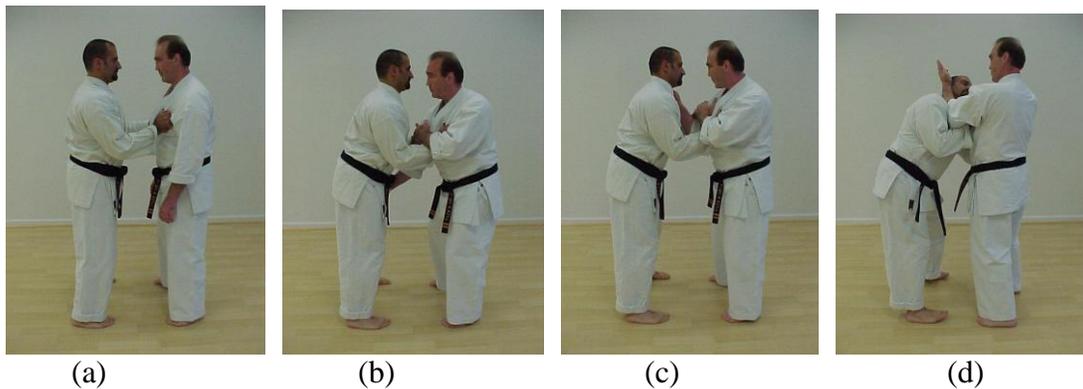


Figure 5: Attacker attempts to Push

Medical Implications. As explained earlier, a severe blow to the testicles, as shown in Figure 5b, will cause the attacker to experience any or all of pain, shock, nausea, vomiting and loss of breath or consciousness. The attack in Figure 5d directly strikes the ear. A percussive type shock to the tympanic membrane (eardrum) expands the auditory canal and eustachian tube with compressed air. The impact by such a blow will cause the small vessels and capillaries of the outer ear to rupture thus making the ear swollen. Because the air expands in volume as it travels through the narrow eustachian tube, the capillaries inside the canal, and even the eardrum, can rupture and swell. This will cause the eustachia tube to swell completely shut. The sensory nerves inside the auditory canal and eardrum contribute with hearing and balance. The locked air pressure inside produces severe pain, dizziness and even unconsciousness. In addition, permanent hearing loss can result.

Intermediate Application. Figure 6 shows an intermediate application in which the attacker grabs the defender with a bear hug from behind (a). The defender grabs the attacker's fingers by moving both hands upwards (b); this corresponds to Figure 1b from

the kata. The defender then counters by grabbing the attacker's fingers in a downward fashion (c); this corresponds to the Figure 1c from the kata. While maintaining a finger lock on the opponent with the left hand, the defender takes a right step forward and moves back around to the left (approximately 270°). The defender then pops the back of the elbow and grabs the tricep muscle with the right hand (d); this corresponds to Figure 1d from the kata. Finally, while maintaining a finger lock with the left hand, the defender shifts the right hand towards the back of the opponent's elbow and steps towards the left; the right hand then moves up and inwardly, while the left hand snaps in an outward fashion thus dislocating the elbow & fingers (e); this corresponds to Figures 1e and 1f of the kata.

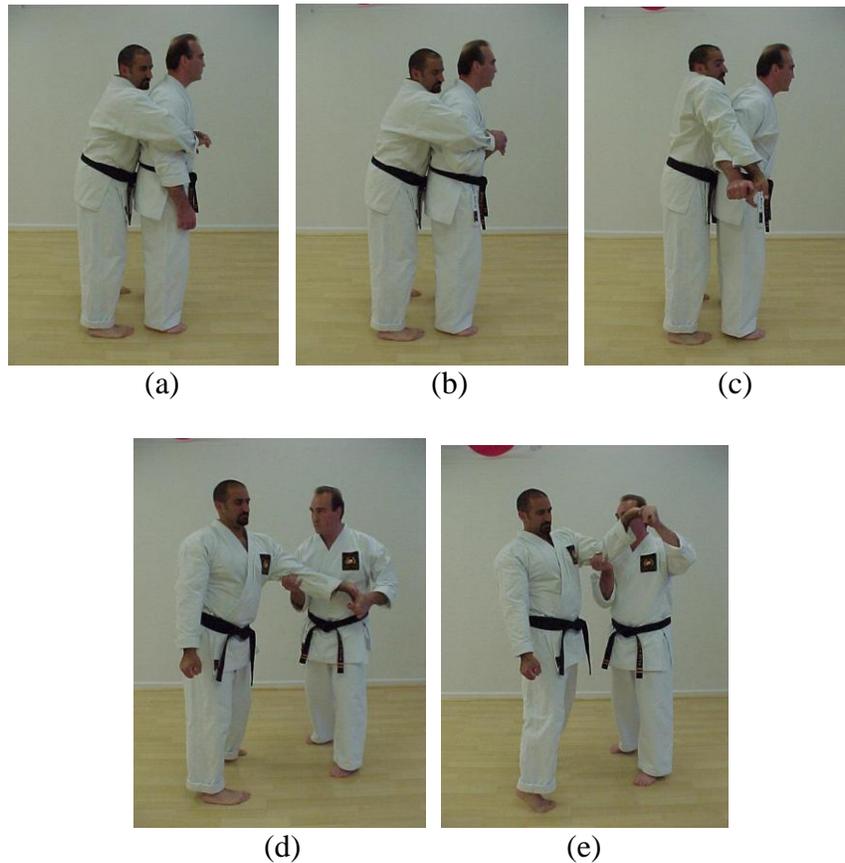


Figure 6: Application at the Elbow

Medical Implications. Figure 7 shows a schematic of the elbow manipulated in the latter parts of this application. A strike to the superficial branch located on the forearm, approximately 3 inches down from top of the elbow, as shown in Figure 7c, will cause the arm and hand to suffer a dull aching pain. Since the radial nerve is affected, the opponent will have difficulty in making a fist because the muscle is weakened. Popping the elbow joint (c.f. Figure 7) located at the back of a straightened arm can dislocate the elbow (ulna from humerus) and break the arm. If the blow is strong enough it will affect

the ulnar nerve in approximately 25% of the cases [W. Haymaker, 1953]. The ulnar nerve runs distally and crosses the elbow joint to the forearm. The affected area, commonly referred as the “funny bone”, will cause the opponent to experience a pin-prick-like shock down the forearm and hand.

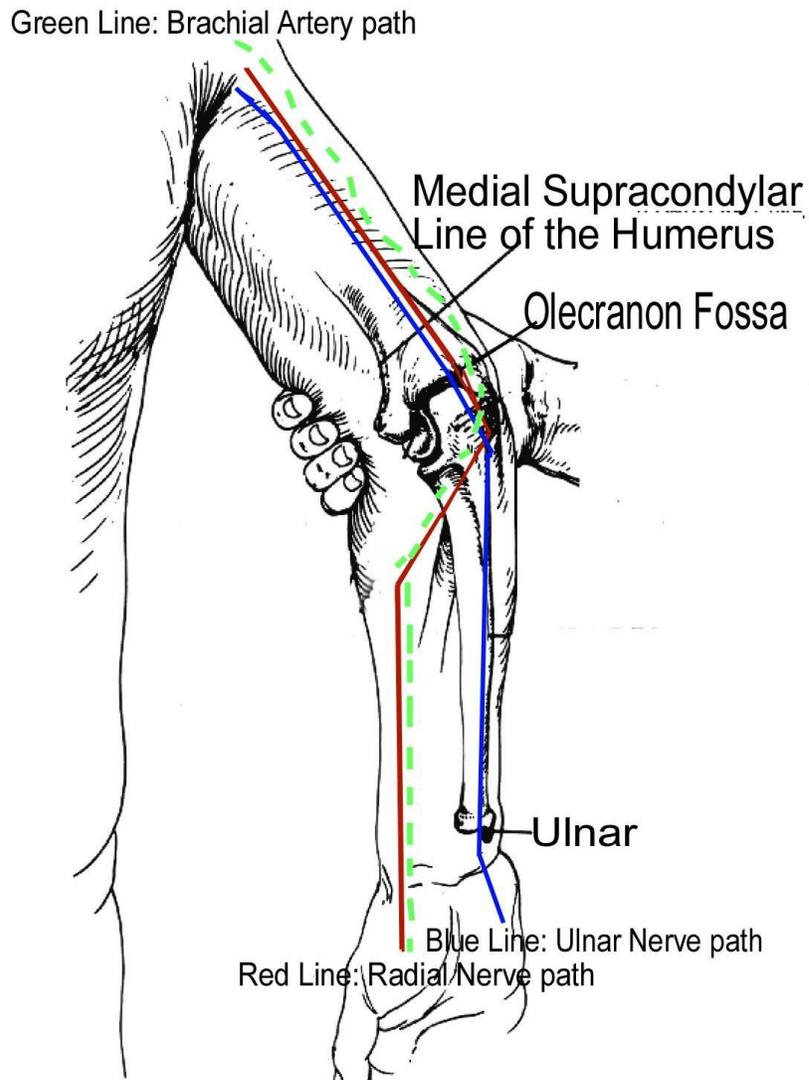


Figure 7: The Structure of the Elbow

If a supracondylar fracture at the humerus' distal end shown in Figure 7 occurs the opponent will experience diffuse swelling in the elbow region and intense pain, thus disabling the arm. The bicep and tricep muscles can be torn if the resultant trauma is severe. The radial nerve is most commonly injured from fractures. [W. Haymaker, 1953] The individual may experience nerve compression or can even sever the nerve by bone fragments. Pain, loss of sensation and possible paralysis of parts of the arm and/or hand may result with this type of injury. If the brachial artery is pinched or severed, tissue damage will occur and may develop into gangrene in extreme cases.

Figure 8 shows the structure of the human wrist and hand manipulated through a wristlock or finger-hold in this application.

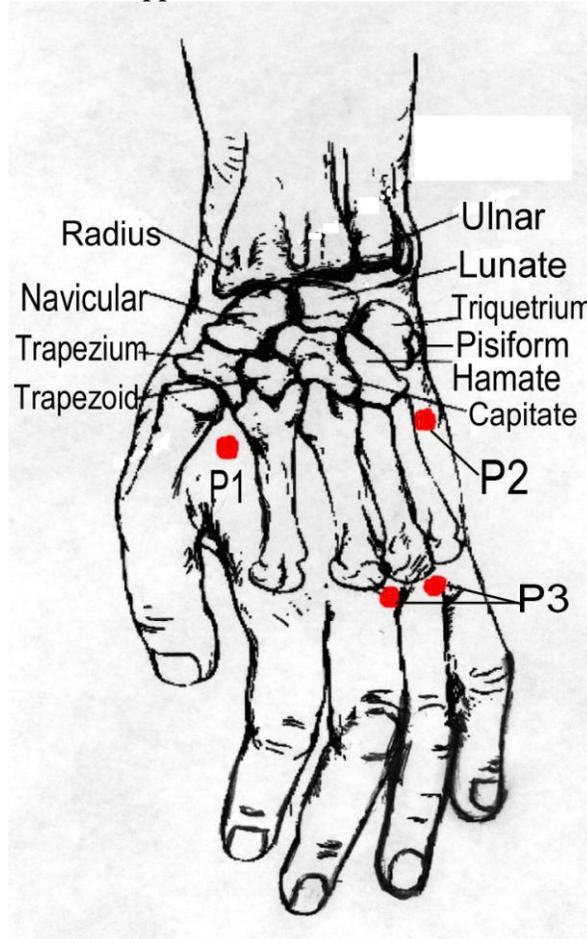


Figure 8: The Human Hand and Wrist

The fingers are particularly vulnerable to being sprained or broken and can make it difficult for the opponent to make a fist. The radial artery, flexor tendons and medial nerves are reachable in the inner side of the wrist. If the defender digs their fingers or knuckles centrally in this area at the median nerve, it will produce a sharp pain in the forearm and a weakened feeling in the hand. Grabbing the back of the hand can produce severe pain in the opponent's hand and arm. The key pressure points depicted in Figure 5 are: between the thumb and the index finger (P1) where the radial nerve is exposed against the side of the second metacarpal bone, along the little finger side of the fourth metacarpal (P2) where the ulnar nerve is exposed, and between the knuckles of the middle and ring finger (P3). Finger holds in any of these areas can be used to control the opponent's movement and weaken the handgrip. The wrist is composed of eight carpal bones in two rows. The navicular (scaphoid bone) is the most commonly fractured bone and is located on the radial side of the carpus (above the radius near your thumb). The lunate located proximal to the capitate (above the radius near the middle finger) is the second most commonly fractured bone. The triquetrum is located distal to the ulnar styloid process (above the ulnar near the pinkie finger) is also vulnerable to injury and the

third most commonly fractured bone [Hoppenfeld, 1976]. Once the wrist is fractured the hand is rendered useless.

Advanced Level Application. Figure 9 shows an advanced application in which the attacker grabs at the chest (a) The defender moves both hands simultaneously upward and traps both forearms (b); this corresponds to the beginning of the movement in Figure 1b from the kata. The defender then applies a right and left knife (shuto) strike to the neck (c); corresponding to the conclusion of the movement in Figure 1b of the kata. The defender then thumb rakes the eyes in a downward fashion (d & e); corresponding to Figure 1c from the kata. While the attacker maintains a hold the defenders lapel, the opponent's left hand is trapped and a right knife strike to the side or back of the head is performed (f); corresponding to Figure 1d from the kata. The back of the attackers neck is then grabbed with the right hand, while striking the chin with the left hand (g) Applying a quick pull with the right hand and a push with the left hand snaps the attackers neck (g). This corresponds to Figures 1e and 1f of the kata.

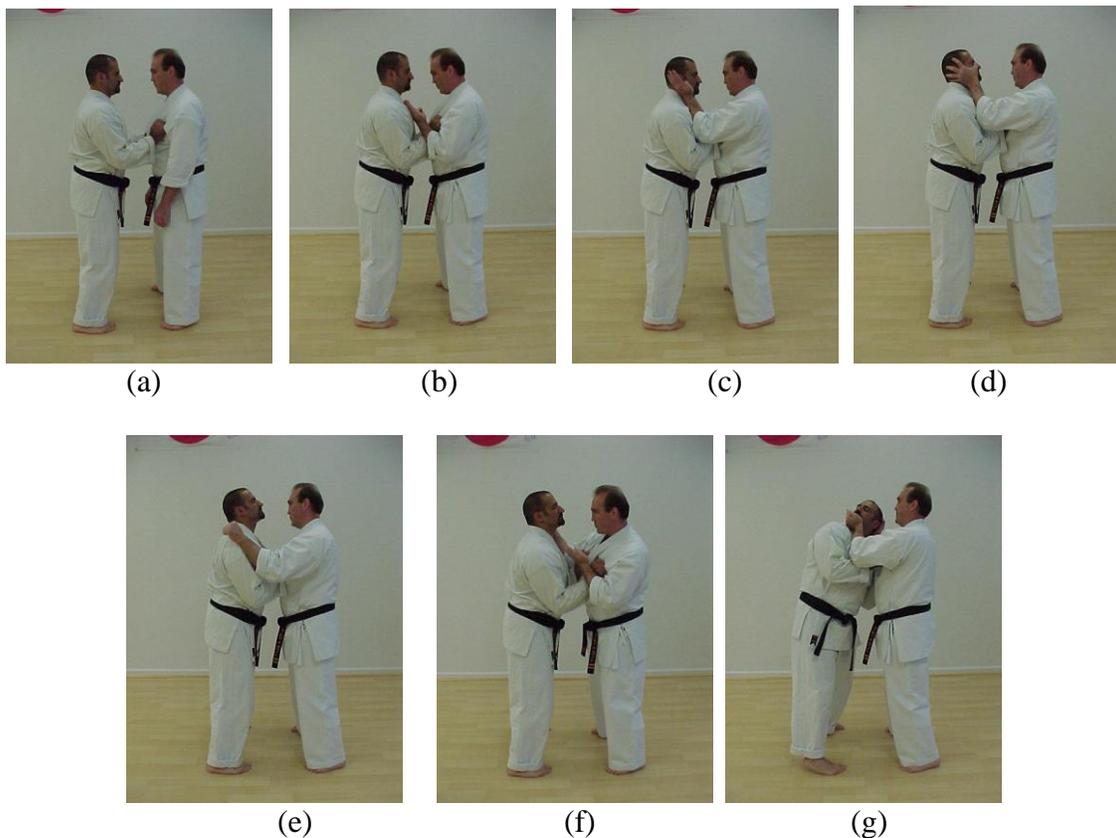
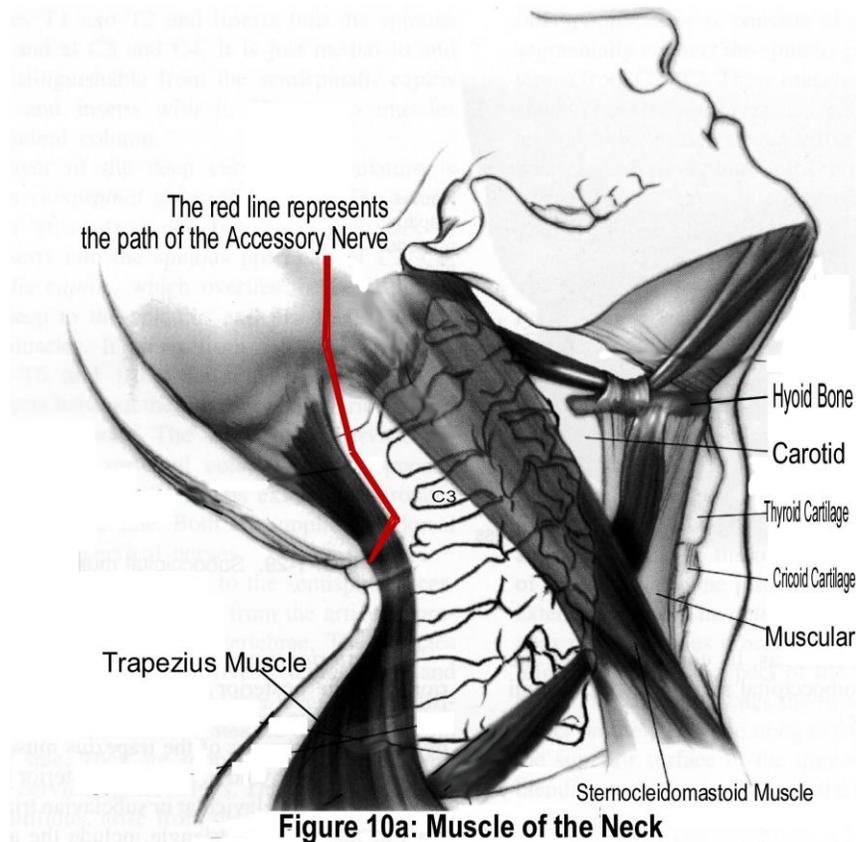


Figure 9: Application resulting in severe injury

Medical Implications. The thumb rake to the eyes, shown in Figures 9d & 9e, can cause hemorrhage and loss of sight. Disruption of the cornea, lens and rectus muscle results. The eyelid may be vulnerable to a tear by the striking fingers thereby increasing the risk for infection. If the strike is severe the optic nerve may be injured. Jennett et al. [Bailes, Cerullo, Engelhard, 1989] reported this was the most common cranial nerve injury seen

in head injuries. Retinal detachment occurred in 7% [Rabadi, Birrer, Jordan, 2000] of the martial arts related injuries. In both scenarios emergent surgical intervention is required as treatment.

Figure 10 shows a schematic of the head and neck manipulated in Figure 9f and 9g of this application. Neck and head injuries are the result of three distinct types of stresses generated by a force applied to the head [Cantu, 2000]. The first two are compressive and tensile or linear forces. An example would be an athlete who is standing still and struck by a moving object. Focal injuries are produced such as brain contusions or intracranial hematoma. The third force is a rotational or shearing force. This creates diffuse brain injuries from a concussion to coma. These injuries can result in other deficits such as: cognition, memory, attention, language and psychosocial adaptation and even death. The most common acute traumatic brain injury in martial arts is cerebral concussion. [Rabadi, Birrer, Jordan, 2000]. This injury can become cumulative. The chronic traumatic brain injury results in Parkinsonism or progressive difficulty in ambulation, coordination and display of cognitive dysfunction [Jordan, 2000].



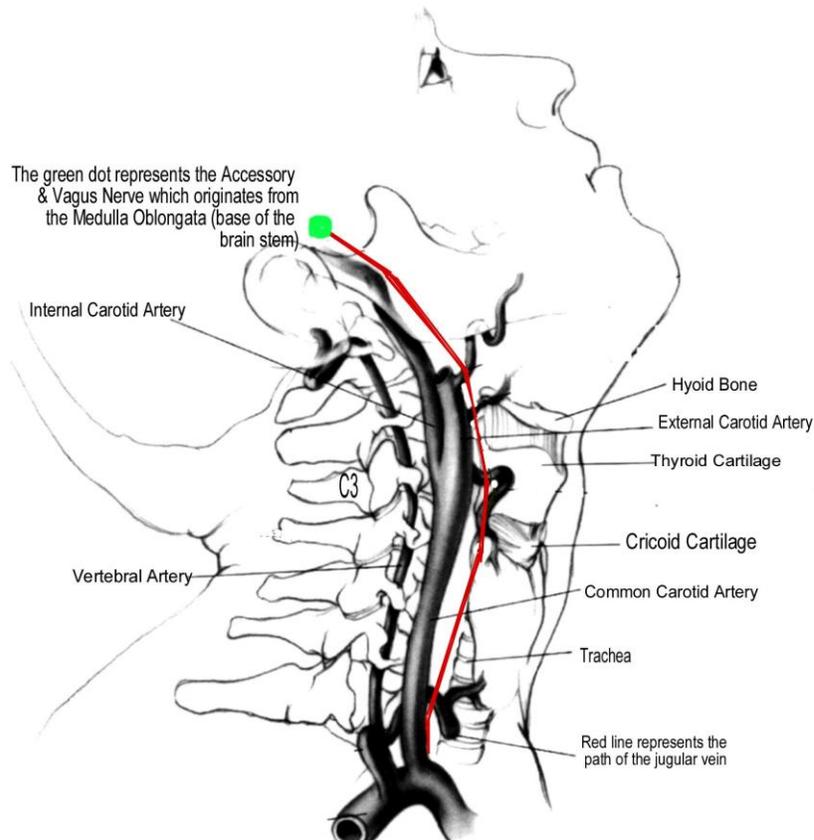


Figure 10b: Arteries of the Neck

The sternocleidomastoid muscle and trapezius shown in Figure 10a share a continuous attachment along the base of the skull to the mastoid process where they split and have a different attachment along the clavicle. They share the accessory nerve (cranial nerve XI). A strike approximately an inch below the angle of the jaw will bruise both the sternocleidomastoid muscle and accessory nerve. This causes pain and partial temporary paralysis of the neck and shoulder area. The carotid artery and jugular vein shown in Figure 10 (b) runs along the carotid tubercle of C6. A blow in this region can cause occlusion, dissection or even a thrombic emboli into the intracranial vessels and resultant stroke [Rabadi, Birrer, Jordan 2000] and [McCrorry, 2000]. There is a documented case where a 26-year old sustained a carotid dissection and resultant hemispheric infarction after sustaining a knife (shuto) strike to the carotid artery (Figure 10b) in the neck. There are also documented cases with vertebral artery dissection. A strike to the vagus nerve produces an inhibitory effect with slowing of the heart rate and lowering of the blood pressure. A severe strike in this region can produce loss of consciousness [Gott, 1997] and a deep contusion.

A dislocation to the thyroid cartilage or the tracheal ring, shown in Figure 10b, can occur by snapping the neck. Suffocation typically results due to the windpipe swelling shut. A severe blow to the back of the neck or disruption to the C3 vertebrae results in spinal cord injury. The individual may need to be ventilated since respiratory dysfunction occurs [Bailes, Cerullo, Engelhard, 1989]. Cervical spine injuries can be as simple as soft tissue

injuries (whiplash) to actual fractures or dislocation of the cervical spine. Neurologic injuries although rare can be very debilitating and can cause death. Extreme awareness and education is needed in order to fully understand the medical implications. The medical authorities advise that [Rabadi, Birrer, Jordan, 2000] preventive guidelines need to be followed in order to accomplish the goal of making the martial arts safer. As noted in Article 3: Advice on Correct Etiquette [McCarthy, 1995], it states:

"Regardless of whether people study quanfa for health, recreation or self-defense, everyone must understand that it is not to be misused. Therefore, teachers should have their disciples pledge to never intentionally hurt anyone or do anything unjust."

Concluding Remarks

This article has described a variety of principals that can be employed in Kata training to elevate skill level and improve self-awareness and focus. The techniques allow a student to understand their strengths and weaknesses, and to focus on areas where improvement is needed. At the most basic levels these techniques gradually breathe life into a kata and aid the student, but at the advanced levels this article has shown that there are dangerous consequences.

Over the last few decades' techniques that were formally passed down by oral tradition, from father to son or via a cherished student, have been published openly for commercial gain. For example, the Bubishi, once a carefully guarded secret is now widely available through a variety of publishers and details of vital point striking have appeared in numerous books. Thus the controls that the masters once exerted, carefully picking worthy students, with impeccable character and social responsibility, to carry forward the art have now been compromised. In recent years this process has degenerated into shameful demonstrations and seminars where students have been struck, and in some cases made unconscious, to illustrate the ideas. An attack on an unwitting student requires no skill, and serves no purpose other than to inflate the ego of the instructor. These actions set the wrong example entirely; there is no honor, no integrity, no respect, or courtesy that can be learnt from such irresponsible behavior. Further, this article has shown that there are several serious, unpredictable, medical risks associated vital point striking. The real challenge to an instructor is not to demonstrate the effects, but rather to advance students through the levels of teaching at a pace that is consistent with responsible behavior and student safety.

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Author's Biography

Marvin Labbate is a eighth Dan in Okinawan Goju-Ryu, fifth Dan in Okinawan Ryukonkai kobudo, and a certified Yang taijiquan instructor. He has studied karate for over 35 years and is the International Representative for the Okinawan Seibukai Association under its president Nakasone Kinei, 10th Dan. Mr. Labbate is the director of CNY Karate (www.cnykarate.com), founded in 1963, the oldest karate school in upstate New York. His children's program incorporates comprehensive life skills training curricula. He also teaches special classes for children and adults that include the popular "stranger danger" program for children and self-defense classes for women. In addition, he conducts seminars on a broad variety of martial arts topics and develops advanced teaching videos.