

Letter-to-Editor

Karate white belt finger

Dear Editor-in-Chief

Traditional Shotokan Karate training requires hand conditioning using the Okinawan traditional padded punching board, the "makiwara" (*maki* - "roll up" or "wrap", and *wara* - to "straw"). Karate practitioners used to work out for hours with this device, to toughen the hands and strengthen the wrists to be able to deliver more powerful hand techniques. However, even though they may not use a makiwara, modern karatekas practice their karate strikes on sandbags. This training may produce different injuries (Adams and Mutasim, 2001; Vayssairat et al., 1984). Crosby (Crosby, 1985) radiographed the hands and wrists of 22 karate instructors, 17 of whom punched regularly the makiwara and performed pushups on the knuckles every day. He concluded that zealous use of the makiwara was a cause of pain and stiffness in the hands and wrists, but neither practice had a consistently deleterious effect on the mobility of the index and middle fingers metacarpophalangeal joints which bore the brunt of the impact.

"Karate Kid finger" (Chiu, 1993) is a traumatic condition of the little finger occurring in karate participants. It may become clinically evident as pain and paraesthesiae along the ulnar border of the little finger and hand. The ulnar dorsal digital nerve of the little finger can be damaged by repetitive contusion when the hand performs karate chop called "tsuki". The repetitive impact may cause fibrosis within the nerve sheaths and between the nerve fibres. The "Karate Kid finger" is managed surgically by neurolysis. Overuse and poor technique are considered risk factors. Gichin Funakoshi, the father of modern karate, in the book *Karate Jitsu* (Funakoshi, 2001), describes the correct way of performing the karate chop "tsuki". Precisely, he pointed out that the "seiken" (the traditional karate "tsuki") has four point of contact: the first two knuckles and the proximal interphalangeal joint of the index and middle finger. Even though Funakoshi recommended to practice on makiwara, he was aware of the risks which can be carried out by an uncontrolled and excessive training. Infact, he also wrote: "Then there are those who, having a superficial knowledge of one or two karate techniques, hold their fists in such a way as to call attention to their callused knuckles while pushing their way through crowds as if looking for a fight - foolish beyond words" (Funakoshi, 1995). As proper technique to perform the karate "tsuki" requires impact to be driven on the first two knuckles and the proximal interphalangeal joint of the index and middle finger, the forearm pronated and the wrist slightly ulnar deviated. The causative factor of the "Karate Kid finger" is poor technique. The ulnar dorsal digital nerve of the little finger can be damaged only if the "tsuki" is performed as usually the lower level karatekas (white belt) do, namely with the knuckles of the middle, ring, and little finger as

the points of impact. Hence, we suggest that this condition should be more aptly named "karate white belt finger".

Filippo Spiezia¹ and Nicola Maffulli²✉

¹Department of Orthopaedic and Trauma Surgery, Campus Biomedico University, Rome, Italy.

²Centre for Sports and Exercise Medicine, Barts and The London School of Medicine and Dentistry, Mile End Hospital, London, England.

References

- Adams, B.B. and Mutasim, D.F. (2001) Karate cicatrices. *Cutis* **67**, 499-500.
- Chiu, D.T. (1993) "Karate kid" finger. *Plastic and Reconstructive Surgery* **91**, 362-364.
- Crosby, A.C. (1985) "The hands of karate experts. Clinical and radiological findings." *Br J Sports Med* **19**, 41-42.
- Funakoshi, G. (1995) *Karate-Do Nyumon: The Master Introductory Text*. Kodansha International, Japan.
- Funakoshi G. (2001) *Karate Jitsu: The Original Teachings of Gichin Funakoshi*. Illustrated edition. Kodansha International, Japan.
- Vayssairat, M., Priollet, P., Capron, L., Hagege, A., Housset, E. (1984) Does karate injure blood vessels of the hand? *Lancet* **2**, 529.

✉ Nicola Maffulli, MD, MS, PhD, FRCS(Orth)

Centre Lead and Professor of Sports and Exercise Medicine, Consultant Trauma and Orthopaedic Surgeon, Centre for Sports and Exercise Medicine, Barts and The London School of Medicine and Dentistry, Mile End Hospital, 275 Bancroft Road, London E1 4DG, England

E-mail: n.maffulli@qmul.ac.uk