

Corticosteroid injection is an effective treatment for trigger digits but the pain during the injection is an always-present side effect. Our purpose was to assess if a dorsal technique through the web space is safe for extra-sheath injection of trigger fingers and thumb.

Twelve fresh-frozen cadaveric upper extremities were used in this study consisting in six white males and six white females. The mean age was 83 years (range: 70–96). Specimens had no history of trauma, surgery or regional pathology that could affect the results obtained in the study.

An injection through the dorsal web was performed on each digit. After a careful resection of the palmar skin, the distance between the needle and the main anatomical structures was measured. The risk of major injury was considered high when the mean distance from the needle to the neurovascular bundle was below one millimeter.

The mean distance from the needle to the neurovascular bundle was 1.63 millimeters and it was over one millimeter in all digits. Two major injuries in 84 injections were observed, one nerve and one artery. The safest digit was the thumb while the most dangerous was the index finger. At the middle and fourth fingers, the technique was safer when it was carried out from the dorso-ulnar side.

The palmar midline injection into the synovial sheath is the most widely used technique but, according to several authors, the palmar skin has a high density of sensitive receptors than the dorsal skin so it tends to create more patient discomfort. An intra-sheath technique through the dorsal skin has been previously published in one paper (Buch-Jaeger and Foucher, 1992) reporting similar results to those described for other techniques. Some studies have demonstrated that injecting into the flexor tendon sheath is not necessary, since similar outcomes have been achieved with a palmar subcutaneous injection. Therefore, a technique through the dorsal skin could be an effective and less painful alternative in the treatment of trigger digits. To the best of our knowledge, no studies have been published reporting a dorsal extra-sheath technique.

A subcutaneous injection near the flexor tendon sheath can be carried out through the dorsal web with an acceptable risk of neurovascular injury and it could be useful for injection in the treatment of trigger fingers and trigger thumb but it should be assessed in a clinical study.

Déclaration de liens d'intérêts Les auteurs déclarent ne pas avoir de liens d'intérêts.

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C076

Effectivité et sécurité de l'injection à travers la peau dorsale dans le traitement du doigt et du pouce à ressaut: étude clinique prospective

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Stenosing tenosynovitis of the fingers and thumb is one of the most common causes of hand pain and disability. Corticosteroid injection is the mainstay in initial management but the pain during the injection is an always-present side effect. The purpose of this study was to assess the effectiveness, safety and perceived pain during a subcutaneous corticosteroid injection for trigger finger and thumb performed through the dorsal skin.

A total of 63 consecutive patients diagnosed of trigger finger or thumb were included in this study. They were 43 women and 20 men with a mean age of 61 years.

A subcutaneous corticosteroid injection was performed through the dorsal web. In cases where triggering was not completely solved, a second injection was offered. Demographic data, DASH questionnaire, VAS for pain during the injection, success rate and complications were collected and analyzed.

The mean DASH questionnaire was 48 points at diagnosis and 8.6 points at final follow-up. The mean VAS for pain during the injection was 3.84 and it was considered mild by most patients. Six patients were lost to follow-up. The success rate after a single injection was 31/57 (54.4 %). The overall success rate was 39/57 (68.4 %). The best result was achieved on the middle finger (19/22; 86 %), followed by the ring finger (10/12; 83 %). No complications were noted. No differences in the success rate between the diabetic and non-diabetic sample were found.

The overall success rate of trigger fingers injections through the palmar skin has been reported between 47 % and 92 %. In our series, injecting subcutaneously through the dorsal skin, the overall success rate at final follow-up was 39/57 (68.4 %) what is consistent with the published data. The mean reported VAS for pain during a palmar injection has been reported to be 5.32 points. In our series, the perceived pain during the injection was 3.84 points. A prospective randomized study would be necessary to assess these differences.

The subcutaneous corticosteroid injection through the dorsal web for trigger finger and thumb is safe and effective. It seems to be less painful than the reported scores for the palmar midline technique although it should be assessed in a prospective randomized study.

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Multiparametric ultrasound imaging of the flexor carpi radialis brevis

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Flexor carpi radialis brevis (FCRB) is a supernumerary musculo-tendinous structure of the wrist, often discovered incidentally during imaging, surgical procedure, or cadaveric dissection.

Five cases (three patients) with FCRB were reported and underwent a multimodal ultrasound consisting of B-mode US, Doppler US and Shear Wave Elastography. Examinations were conducted on a dedicated ultrasound system (AixplorerTM, Supersonic Imagine, Aix-en-Provence, France). A high-resolution linear 18 MHz transducer (SuperLinearTM SL18-5, Supersonic Imagine, Aix-en-Provence, France) with 256 elements and a bandwidth from 5 to 18 Mhz was used.

A penniform shaped FCRB was found in all of our cases and the mean value of its cross sectional area was $0.77 \pm 0.21 \text{ cm}^2$. Arterial supply to the FCRB was via branches of the radial artery in all cases. Young modulus (kPa) of the FCRB was significantly ($P < 0.02$) different from resting position to active flexion or passive extension.

Our study demonstrates that the FCRB shares similar biomechanics with a normal skeletal muscle and acts as an accessory wrist flexor. The authors will retrace the evolution of FCRB in the vertebrate phylum and discuss the rarity of this muscle in humans and its clinical application.

Disclosure of interest The authors declare that they have no competing interest.

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C078

Prise en charge des déformations en col-de-cygne souples par ténodèse palmaire en 8 extra-articulaire extra-tendineuse: résultats cliniques

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La déformation avancée en col-de-cygne des doigts longs est handicapante, notamment lorsqu'elle entraîne un ressaut douloureux lors de l'initiation de la

