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Original article

Revision surgery in carpal tunnel syndrome: a retrospective study comparing the Canaletto® device alone versus a combination of Canaletto® and Dynavisc® gel



Chirurgie de reprise du syndrome du canal carpien : étude rétrospective comparant l'implant Canaletto® seul versus l'implant Canaletto® plus gel Dynavisc®

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ABSTRACT

The aim of our study was to demonstrate the benefits of combining the Canaletto® implant with carboxymethylcellulose/polyethylene oxide gel in the surgical treatment of carpal tunnel syndrome (CTS) recurrences.

Our case series included 39 patients (40 hands, one bilateral case) who underwent revision surgery for recurrent CTS (28 cases) or resistant CTS (12 cases). The mean age of the patients was 56 years. The Canaletto® only was implanted in the first 21 cases (group I). In the following 19 cases (group II), Dynavisc® gel was added to the protocol and applied around the median nerve when the Canaletto® was implanted.

At 12 months' follow-up (group I) and 11 months' follow-up (group II), the pre-versus post-operative difference between the average values of the DN4 neuropathic Pain Score was 0.55/10 in group I and 2.25/10 in group II; the Pain Score was 2.23/10 (in group I) and 2.52/10 (in group II); the Quick DASH Score was 18.98/100 (group I) and 19.06/100 (in group II); the hand grip strength was 19.55% (group I) and 28.53% (group II); the sensory nerve conduction velocity was 8.67 m/s (group I) and 10.27 m/s (group II); the distal motor latency was 1.05 m/s (group I) and 1.75 m/s (group II). Nine patients recovered from hypoesthesia in both groups, 5 patients regained satisfactory trophism of the thenar muscles in group I and 3 patients in group II. No improvement whatsoever was noted in 2 patients in group II, despite the electromyogram being normal. One patient from group II suffered an infection that required revision surgery to remove the Canaletto®; this led to a moderate improvement.

Our results show that when resistant or recurrent CTS is diagnosed, the combined treatment of an anti-adhesion gel such as Dynavisc® around the median nerve with the Canaletto® implant after performing secondary neurolysis leads to satisfactory post-operative outcomes. Compared to other techniques described in the current literature, our technique is less invasive, quicker and associated with minimal morbidity of the surgical site.

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R É S U M É

Le but de ce travail était de tester l'intérêt d'associer un implant Canaletto® à un gel composé de carboxyméthylcellulose et de polyéthylène oxyde dans le traitement chirurgical des récurrences de syndrome du canal carpien (SCC).

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