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Case Report

Collagenase Treatment for Dupuytren Contracture of the Metacarpophalangeal Joint After Arthrodesis of the Proximal Interphalangeal Joint

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Successful collagenase (Xiaflex) treatment of Dupuytren's contracture in the metacarpophalangeal joint is possible in the presence of previous arthrodesis of the proximal interphalangeal joint.

Key words:

Dupuytren contracture
 Metacarpophalangeal joint
 PIP arthrodesis
 Proximal interphalangeal joint
 Xiaflex collagenase

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The patient is a 65-year-old anesthesiologist with a history of a 100° Dupuytren contracture of the proximal interphalangeal (PIP) joint in his left small finger. Two fasciectomy procedures were performed by two different surgeons in the previous 10 years. Each time there was a correction of the contracture, but each time the contracture recurred. Eventually, the patient underwent a successful 45° arthrodesis of the small finger PIP joint to prevent recurrence. Five years after surgery, the patient was doing well with regard to his PIP joint but presented with a 50° contracture of the small finger metacarpophalangeal (MCP) in the operative finger. Collagenase injection (Xiaflex, BioSpecifics Technologies Corp) was performed to successfully extend the MCP joint straight. This is the first case in the literature demonstrating the use of collagenase injection for an MCP contracture after a PIP fusion.

Case Report

This patient had previously undergone a successful 45° arthrodesis of the little finger's PIP joint after two prior fasciotomies

for recurring 100° PIP contractures. Five years after surgery, he presented with the development of a pretendinous cord causing a 50° contracture of the MCP of the operative finger. In an attempt to avoid more invasive treatment and a fourth surgical intervention on this finger, we attempted collagenase (Xiaflex) injection targeting the MCP contracture. Typical collagenase treatment requires digit manipulation with an extension force through the finger in an attempt to disrupt the abnormal collagen formation. In this patient's case, we attempted to treat the MCP contracture by applying an extension force just proximal to the PIP joint to avoid stress at the PIP joint fusion site. We were successful in achieving full extension of the MCP contracture without any tearing of the skin or complications of the PIP joint fusion. After collagenase treatment, we continued custom night-time splinting of the extended MCP joint with a splint that accommodated the patient's PIP joint fusion.

The treatment plan included injecting 0.58 mg of collagenase into the cord. The next day, manual manipulation via extension force proximal to the PIP joint was performed to avoid stressing the previous PIP joint arthrodesis construct. There was a successful snap of the MCP cord with no skin tear, and a full passive extension of the MCP was achieved.

Discussion

Dupuytren contracture is a common disease affecting approximately 8% of the world's population, and it does not have a known

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cure.¹ The most common treatments for Dupuytren contracture include nonsurgical treatment including collagenase, in addition to needle fasciotomy and surgical fasciectomy.^{1,2} In severe recurrent PIP contractures cases, digit amputation can be considered, especially in the small finger PIP.^{3,4}

Xiaflex collagenase treatment of Dupuytren is a less invasive treatment of Dupuytren contracture involving a collagenase injection and digit manipulation, which is performed to counteract the contractures caused by Dupuytren disease. Although it does have many known advantages, including rapid return of function in the affected finger, the recurrence rate is similar to other known methods of treatment.⁵ With this patient, we show that collagenase (Xiaflex) treatment of an MCP contracture is possible despite the presence of a previous PIP joint arthrodesis and the scarring from two prior fasciotomies. Known collagenase injection complications include pain, swelling, skin tears, tendon rupture, and recurrence of the contracture.^{5,6} Although collagenase is often not a permanent solution for contractures, for our patient, it served effectively as a nonsurgical, less invasive option, given the presence of three prior surgeries including a previous PIP joint arthrodesis. To our knowledge, no other literature describes successful collagenase treatment of an MCP contracture in the presence of previous PIP joint arthrodesis.^{7,8}

Written informed consent was obtained from the patient for publication of this case report.

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