

# Distal Interphalangeal Joint Arthrodesis Complicated by Postoperative Infection: A Rare Presentation of Disseminated Herpes Simplex Virus

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Postoperative infection after elective arthrodesis of the interphalangeal joint is an uncommon complication often necessitating urgent debridement. We present the rare case of a female patient with a history of oral herpetic lesions, who underwent elective arthrodesis of the middle and index fingers for treatment of erosive osteoarthritis and subsequently developed a postoperative herpetic infection at the surgical site. (*J Hand Surg Am.* 2016; ■(■): ■—■. Copyright © 2016 by the American Society for Surgery of the Hand. All rights reserved.)

**Key words** Herpes simplex virus, HSV infection, distal interphalangeal joint arthrodesis, postoperative, disseminated infection.



**A**RTHRODESIS OF THE DISTAL interphalangeal (DIP) joint is an effective surgical treatment option for painful end-stage arthritis of the digits. Current techniques using compression screw fixation offer predictable union rates with a minimal potential for complications.<sup>1–4</sup> Although uncommon, postoperative infection is a potentially serious complication that may necessitate urgent debridement and, in some cases, hardware removal.<sup>3</sup> When infection does occur, bacterial organisms are the most common pathogens and are usually treated successfully with debridement and an appropriate antibiotic regimen. Nonbacterial postsurgical infections are uncommon in routine hand surgery. We present the

case of a female patient who underwent elective arthrodesis of the middle and index fingers for treatment of erosive osteoarthritis and subsequently developed a herpetic infection at the surgical site, mimicking a postoperative bacterial infection.

## CASE REPORT

A 46-year-old, right hand dominant woman presented to our clinic for evaluation of a 3-year history of progressively worsening bilateral hand pain. The patient localized the pain to the DIP joints, where she also noted swelling and deformity. She stated that the pain was interfering with work and that she also had difficulty with opening jars and often dropped items. Her medical history was noncontributory. Because of her family history of rheumatoid arthritis in her mother, psoriatic arthritis in her brother, and erosive arthritis in her sister, she had previously undergone a full workup by her rheumatologist for autoimmune and/or inflammatory disease, which was negative. The patient did not have a history of systemic or occupational infectious conditions, including human immunodeficiency virus or herpes simplex virus (HSV). With the exception of the bilateral DIP joints, the

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**FIGURE 1:** Postoperative oblique fluoroscopic images demonstrating arthrodesis with screw fixation at the DIP joints of the index and middle fingers.

physical examination was normal. The DIP joints were swollen and tender with markedly reduced range of motion. These findings were the most pronounced in the index and middle fingers. No skin lesions were noted on the digits or hands bilaterally.

Standard fluoroscopic imaging demonstrated erosive degeneration of the DIP joints bilaterally, with the index and middle finger most severely affected. Because of her considerable pain and functional limitations, a decision was made to proceed with DIP arthrodesis of the left index and middle finger. The patient was taken to the operating room, where the left arm was sterilely prepped and draped from the distal third of the forearm to the fingertips. Under sedation and with injected local anesthetic, the patient underwent uncomplicated arthrodesis of the left middle and index finger DIP joints, using 2.3-mm cannulated compression screws (TriMed Cannulated Screw System; TriMed, Santa Clarita, CA) (Fig. 1). The fingers were sterilely dressed and placed in an orthosis, and the patient was discharged home that same day.

The patient was instructed to keep the surgical dressing clean, dry, and in place until her scheduled follow-up with the occupational therapist, which was on postoperative day 5. At this visit, the postoperative dressings were removed and a custom orthosis was fabricated to immobilize the DIP joints. The therapist noted minimal serous drainage from the index finger incision site. The wound in the middle finger



**FIGURE 2:** Postoperative day 8 clinical image demonstrating notable swelling with vesicular lesions over the dorsal aspect of the middle finger and, to a lesser degree, the index finger with blistering dorsally over the proximal phalanx of the middle finger. Serosanguinous drainage was also appreciated from the surgical incision sites.

appeared to be unremarkable. At that point, the patient was permitted to shower and gently wash the hand, then pat it dry and cover it with dry gauze and the orthosis. She was allowed to return to work whenever she felt comfortable but had to keep the orthosis on for 8 weeks or until bone consolidation occurred. However, owing to her profession, she could not return to work while wearing the orthosis.

The patient returned to the clinic on postoperative day 8 reporting worsening pain, swelling, and redness for 2 days. She denied fever or other systemic symptoms. Upon examination, she was noted to have prominent swelling with vesicular lesions over the middle finger dorsally with erythema tracking volarly to the metacarpophalangeal joint. The index finger was similarly involved, but to a lesser extent (Fig. 2). She was also noted to have serosanguinous drainage from the surgical incision sites and blistering dorsally over the proximal phalanx of the middle finger.

Owing to concern for acute postoperative bacterial infection, the patient was taken urgently to the operating room for wound exploration, irrigation, and debridement.

Upon reopening of the surgical wounds, the patient was found to have some fibrinous exudate but no frank purulence. After cultures were obtained, the wounds were thoroughly irrigated with a saline and antibiotic mixture, loosely reapproximated, and packed with iodoform. The hand was placed in an orthosis and the patient was admitted to the hospital and empirically given intravenous vancomycin. The infectious disease

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