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Operative Techniques in
Orthopaedics

Arthroscopy of the Metacarpophalangeal Joint

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The use of arthroscopy in the diagnosis and treatment of disorders involving small joints is growing. In 1979, Chen was the first to describe arthroscopy of the metacarpophalangeal (MP) joint for arthroscopic synovectomy in a patient with rheumatoid synovitis (Chen, Orthop Clin North Am 10:723-733, 1979). Since then, MP joint arthroscopy has been used to release contractures, reduce Stener lesions, and assist in the reduction of intra-articular fractures. This work describes the technique for MP arthroscopy with a review of our experience in 20 patients.
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The use of arthroscopy in the diagnosis and treatment of metacarpophalangeal (MP) joint disorders is growing as surgeons become more comfortable with small joint arthroscopy. The first account of MP joint arthroscopy was by Chen in 1979, when he reported on arthroscopic synovectomy for a patient with rheumatoid arthritis.[1] Since then, MP joint arthroscopy has been used to release contractures, reduce displaced ruptured ulnar collateral ligaments, and assist in the reduction of intra-articular fractures.[2-8] Arthroscopy of the MP joint provides an excellent view of the joint without releasing the sagittal band of the extensor hood. Motion can be started immediately, dramatically shortening the period of infirmity and rehabilitation.[6,8]

Indications

The indications for MP joint arthroscopy include synovectomy, removal of foreign or loose bodies, capsular debridement and release, debridement of osteochondral lesions, treatment of intra-articular fractures, reduction of acutely ruptured and displaced ulnar collateral ligament tears, and treatment for a locked MP joint.[7] Patients with inflammatory arthritis are particularly well suited to arthroscopic synovectomy. The diagnosis is easily confirmed on examination. We recommend synovectomy after failed treatment with anti-inflammatory agents, including oral nonsteroidal drugs, disease-modifying drugs, and intra-articular injection of steroids. The collateral ligaments are usually lax and the capsule patulous, 2 factors that permit easy access to the joint and easy maneuverability once within the joint. Arthroscopy is more challenging in joints with post-traumatic contractures. The joint space is small. Care must be taken to avoid damaging the joint surfaces while introducing and maneuvering the cannula and shaver.

Technique

The procedure usually is performed under local anesthesia with sedation. Before the procedure, a single dose of antibiotics is administered. The patient is placed in the supine position with the affected arm on a hand table with the shoulder abducted and the elbow flexed at 90°. A tourniquet is placed on the upper arm and preset to 250 mm Hg. The arm is prepped and draped. The affected finger is placed in finger traps and suspended in a traction tower with 5 to 10 pounds of traction. Coban (3 mol/L) elastic wrap can be used to help secure smaller digits (Fig. 1). Use of a tourniquet is optional.

The extensor tendon(s) are palpated on the dorsal surface of the MP joint. The "soft-spots" are marked dorsal to the joint and radial and ulnar to the extensor tendons. The joint is filled with saline using a 25-gauge needle. Based on the surgeon's preference, either the radial or the ulnar portal is established first. Through a 2- to 3-mm transverse skin incision, the joint is entered using a small, curved hemostat followed by a cannula with blunt probe. A 1.9-mm arthroscope is placed through the cannula into joint. Under direct arthroscopic visualization, an 18-gauge needle is introduced into the joint opposite the initial portal, just radial or ulnar to the extensor tendon. For initial inspection of the joint, the 18-gauge needle serves as an outflow. Further joint distention is

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Figure 1 Set-up for MP joint arthroscopy of the small finger MP joint. The arthroscope is in the ulnar portal. The outflow cannula is in the radial portal. (Color version of figure is available online.)

accomplished by adding additional fluid through the needle (Fig. 2). The orientation of the needle within the joint defines the orientation for instruments placed through the same portal. The 18-gauge needle is removed and, using the technique described previously, the second portal is established (Fig. 3). A 2.5-mm full-radius resector is used to debride synovitis or release the joint capsule. These same tasks can be performed with a 2.3-mm underwater bovie (ie, Mitek VAPR,

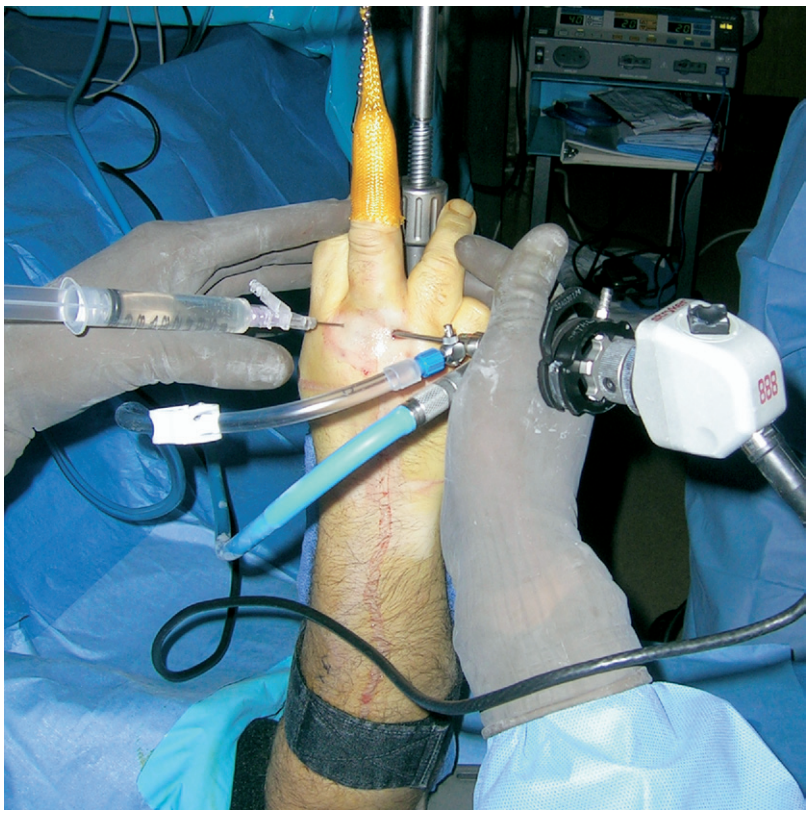

Figure 2 Saline is introduced into middle finger MP joint via radial portal to increase joint distension. (Color version of figure is available online.)