Current Concepts

Current Concepts in Wrist Arthroscopy

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Abstract: The purpose of this article is to review the recent literature on arthroscopic treatment of distal radius fractures (DRFs), triangular fibrocartilage complex injuries, intercarpal ligament injuries, and ganglion cysts, including the use of electrothermal devices. A major advantage of arthroscopy in the treatment of DRFs is the accurate assessment of the status of the articular surfaces and the detection of concomitant injuries. Nonrandomized studies of arthroscopically assisted reduction of DRFs show satisfactory results, but there is only 1 prospective randomized study showing the benefits of arthroscopy compared with open reduction–internal fixation. Wrist arthroscopy plays an important role as part of the treatment for DRFs; however, the treatment for each practitioner and each patient needs to be individualized. Wrist arthroscopy is the gold standard in the diagnosis and treatment of triangular fibrocartilage complex injuries. Type 1A injuries may be successfully treated with debridement, whereas the repair of type 1B, 1C, and 1D injuries gives satisfactory results. For type 2 injuries, the arthroscopic wafer procedure is equally effective as ulnar shortening osteotomy but is associated with fewer complications in the ulnar positive wrist. With interosseous ligament injuries, arthroscopic visualization provides critical diagnostic value. Debridement and pinning in the acute setting of complete ligament tears are promising and proven. In the chronic patient, arthroscopy can guide reconstructive options based on cartilage integrity. The preliminary results of wrist arthroscopy using electrothermal devices are encouraging; however, complications have been reported, and therefore, their use is controversial. In dorsal wrist ganglia, arthroscopy has shown excellent results, a lower rate of recurrence, and no incidence of scapholunate interosseous ligament instability compared with open ganglionectomy. Arthroscopy in the treatment of volar wrist ganglia has yielded encouraging preliminary results; however, further studies are warranted to evaluate the safety and efficacy of arthroscopy.
Key Words: Arthroscopy—Wrist—Distal radius fractures—Triangular fibrocartilage complex—Ganglia—Wrist ligaments.

Wrist arthroscopy is a continuously expanding field, bringing up new controversies and challenges. This review focuses on the current status of arthroscopy in the treatment of distal radius fractures (DRFs), triangular fibrocartilage complex (TFCC) injuries, intercarpal ligament injuries, and ganglion cysts, including the use of electrothermal devices.

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DISTAL RADIUS FRACTURE

As first shown by Knirk and Jupiter[1] in 1986 and subsequently by multiple studies,[2,3] an articular step-off of 1 to 2 mm may lead to the development of degenerative changes, and therefore accurate articular reduction is warranted. Studies show that compared with arthroscopy, fluoroscopy has been unsatisfactory in the evaluation of the status of the articular surfaces.[4,5]

Several authors report the presence of soft-tissue injuries occurring with both extra- and intra-articular DRFs (Fig 1). The reported incidence of TFCC tears

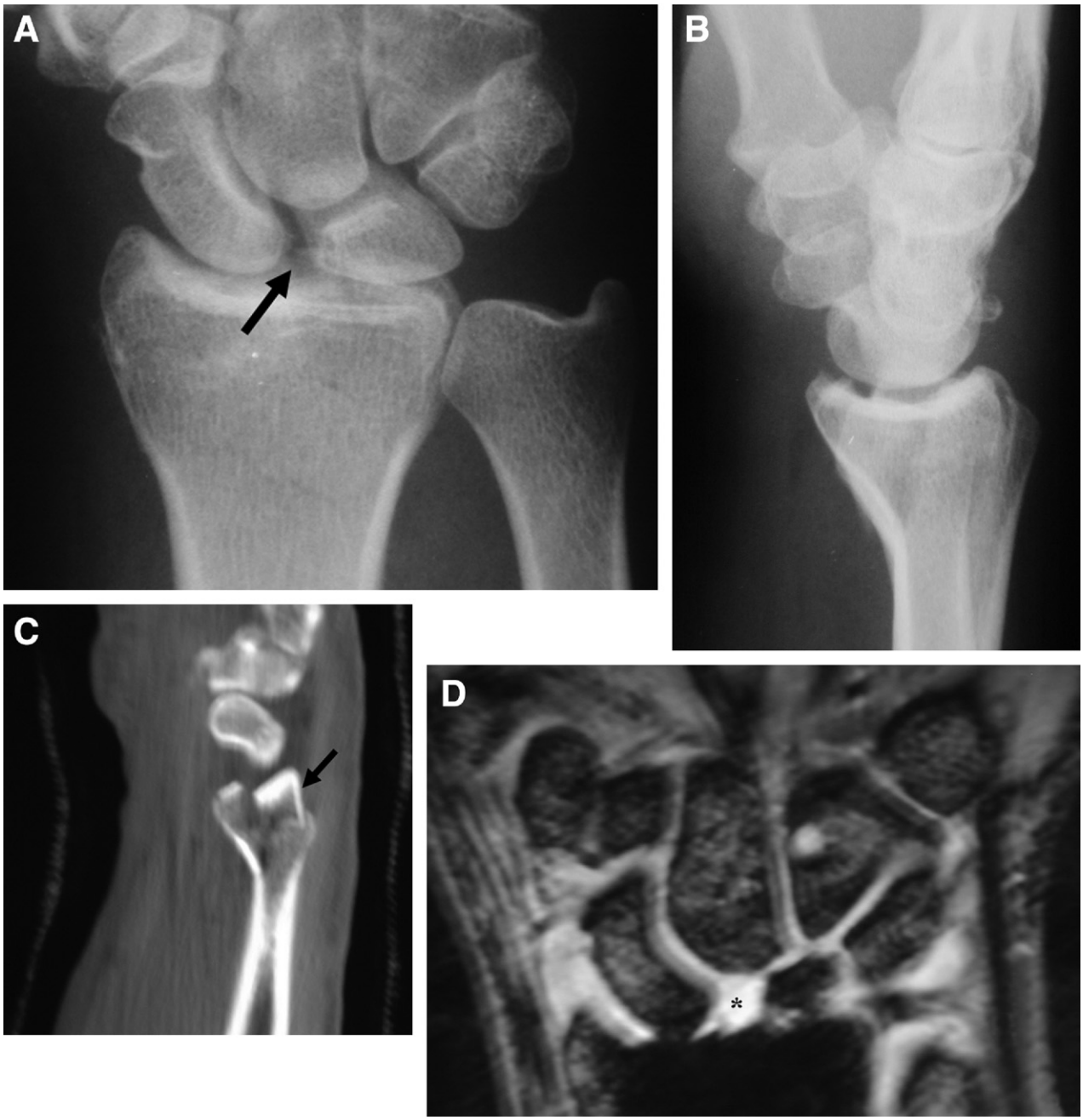

Figure 1. (A) Anteroposterior radiograph. Note the apparent widening of the scapholunate interval (arrow). Also note that the scaphoid is foreshortened and the most distal portion of the lunate is quadrangular. This suggests that the scaphoid is flexed and the lunate and triquetrum are extended. (B) Lateral radiographs of a DRF are inconclusive regarding the extent of the injury. The scaphoid is slightly flexed as compared with the lunate. (C) The sagittal computed tomography scan shows a dorsally angulated articular fragment and radial styloid impaction (arrow). (D) MR image showing the intra-articular DRF and simultaneous scapholunate ligament injury (asterisk). (Reprinted with permission.[92])

occurring with DRFs ranges from 10% to 84%, and scapholunate interosseous (SLIO) ligament injuries range from 7% to 86% of fractures, lunotriquetral interosseous (LTIO) ligament injuries range from 0% to 60%, and chondral injuries range from 15% to 42%.[6-15] The question that arises is whether treating

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