

Fig. 2 Results of our device compared with the most common tendon sutures used in clinical practice

non-re-absorbable market-available devices. Further investigation with a larger testing sample, in vivo and in human cadaveric model, is needed in order to assess usability. This could open new frontiers in hand surgery and address new solutions for tendon repair.

Suggested readings

1. Su BW, Protopsaltis TS, Koff MF, Chang KP, Strauch RJ, Crow SA, Rosenwasser MP (2005) The biomechanical analysis of a tendon fixation device for flexor tendon repair. *J Hand Surg [Am]* 30(2):237–245
2. Trail IA, Powell ES, Noble J (1992) The mechanical strength of various suture techniques. *J Hand Surg [Br]* 17(1): 89–91
3. Zaiti SC, Mazzer N, Barbieri CH (1998) Mechanical strengths of tendon sutures. An in vitro comparative study of six techniques. *J Hand Surg [Br]* 23(2):228–233

DISTAL RADIUS FRACTURES TREATED WITH ELASTIC PERCUTANEOUS PINNING OR EXTERNAL FIXATION: OUR EXPERIENCE IN 48 PATIENTS

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Objective Distal radius fractures are among the most frequent traumatic skeletal injuries with an incidence higher to 15% of all fractures. Many surgical techniques are available: percutaneous Kirschner wires, elastic percutaneous pinning, external fixation, open reduction and internal fixation. The purpose of this study was to evaluate the reduction of pain, complications and results of distal radius fractures treated with elastic percutaneous pinning or external fixation.

Material and Methods From July 2007 to February 2008, 48 patients, 30 women and 18 men, with average age of 54 years (range, 22–84 years), underwent surgical treatment for distal radius fractures. 26 patients were treated with elastic percutaneous system (MiroS, 2B1 srl) and 22 patients with external fixator (WristoreTM; Zimmer, Inc.). After surgical treatments no wrist orthosis was used in both cohorts of patients. Patients were screened with plain radiographs at one and at three months after the surgical procedure. Pain (Visual Analog Score), clinical outcomes and patients’ satisfaction were evaluated at three months.

Results Final radiographic controls (at three months) showed that all fractures achieved bone healing. There was no deep infection while 5 patients (10.4%) had superficial infections (3 patients treated with Wristore and 2 with MiroS) which were resolved with topical antibiotic medication. Time to remove implants was 35 days (range, 30–38 days) for MiroS and 45 days (range 39–48 days) for

Wristore. Both systems were well tolerated by the patients, although MiroS seemed more favored.

Discussion In the past, distal radius fractures were considered as a homogeneous group of lesions with excellent or good prognosis regardless of the type of treatment. Today there is the right belief that the final outcome is influenced by the fracture severity, age, bone quality and the functional demands of the patient, and by the treatment performed.

Conclusions Percutaneous pinning system MiroS has proved reliable and safe especially for treatment of extra- or partially-articular wrist fractures and in elderly patients. External fixator Wristore conferred excellent results in intra-articular and comminute wrist fractures and in young patients.

STATE OF THE ART ON THE KNOWLEDGE OF CARPAL KINETICS: THE BIARTICULAR CONCENTRIC CARPAL CONCEPT AND COXA MANUS SURGERY

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Objective Carpal kinetics is an essential knowledge in the clinical-surgical judgment. In literature, that has been an enigma replaced by uncertain thesis. The historical carpal models: columnar (Navarro, 1919), chain movement (Gilford, 1943), Kapandj (1974), geometry varying (Taleisnik, 1976), the ring (Lictman 1981) have not disclosed the secret of carpal structure. The consequences have been the clinical and surgical approximation.

Material and Methods Recently, the gap has been reduced by the modern Biarticular Concentric Carpal concept (BCC) [1]: (1) carpus is devised as a femur biarticular prosthesis in which the little-head is reproduced by the capitate’s head that, on scaphoid and lunate, constitutes the enartrosic articulation of the Coxa Manus (CM); the carpal condyle as a meniscus, contains it and warrants its mechanical stability; (2) during the movement, the two carpal rows maintain the radiocarpic-axle/hand-axle convergence in a point that, coinciding with the capitate’s head, identifies the rotation carpal centre (CR); (3) the CM disruption defines carpal instability (CI); in practice, the check of a static or dynamic displacement of capitate’s head is patognomonic of CI. In the carpal lesions the surgical target is to obtain the CR restoration-reposition; and Coxa Manus Surgery (CMS) is the correspondent methodology: when restitutio ad integrum is possible, the osteosynthesis and/or the lig-

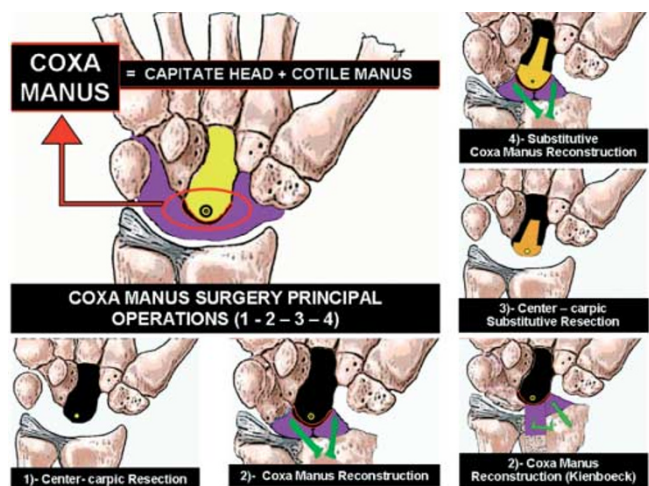


Fig. 1