Bipolar radiofrequency for effective mini-operative treatment of tennis elbow

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INTRODUCE
Lateral epicondylitis or tennis elbow is a noninflammatory, degenerative condition of the origin of the ECRB or EDC (Fig. 1), clinically associated with overuse and characterized by:

- absence of inflammatory cells
- profusion of disorganized collagen and fibroblastic hypertrophy
- disorganized vascular hyperplasia with avascular tendon fascicles
- nutritional flow is compromised, making it difficult for tenocytes to synthesize the extracellular matrix necessary for repair and remodeling

A principal aim in treatment of tendinosis is to establish a biologic healing response.

PURPOSE
To evaluate the long-term result, safety and effectiveness of using RF-based microtenotomy to treat tendinosis (tennis elbow).

METHODS
- prospective, nonrandomized, single-center clinical study
- 49 patients with symptomatic epicondylitis lateralis for at least 6 months
- averaged age: 44.9 years (range: 26-57) 28 men and 21 women
- bipolar microtenotomy using TOPAZ Microdebrider device (Fig. 2,3)
- before operation: VAS, clinical examination
- postoperative clinical assessment: 2 and 14 day
- 12, 24 months follow-up: VAS, DASH, USG, clinical examination
- USG: LOGIQ e GE Healthcare device with a 7,7-15Mhz linear transducer (Fig. 4)

RESULTS
- the dominant arm was involved in 89% with unilateral involvement
- no perioperative or postoperative complications related to the procedure
- the mean VAS decreased from 8,8 before operation to 2,6 (p=0,001)
- postoperative DASH value was 21,6
- ultrasonography abnormalities:
  - focal hypoechoic area: 36 patients (74%)
  - focal anechoic area: 16 patients (33%)
  - cortical irregularity of the lateral epicondyle: 34 patients (70%)
  - tendon thickening: 13 patients (27%)
  - intratendinous calcifications: 11 patients (22%) (Fig. 5 arrows)
  - increased vascularity: 9 patients (18%) (Fig. 6)

CONCLUSIONS
1. RF-based microtenotomy appears to be a safe and effective method for treating patients with chronic tendinosis.
2. Microtenotomy is a technically simple procedure to perform and is associated with a rapid and uncomplicated recovery. Pain relief was achieved rapidly in all patients and diminished even further with time.
3. Ultrasonography is a widely and inexpensive imaging study for assessing tendons providing useful information on the severity and stage of tendon pathology.