

Arthroscopic Management of Lateral Epicondylitis

연세의대 정형외과

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1. Definition

Painful overuse tendonitis at the lateral aspect of the elbow
(Henry J. Morris 1882)—“Lawn Tennis Arm”

2. Epidemiology

- 1) Peak incidence in 5th decades
- 2) Dominant arm-75%
- 3) Male=Female

3. Pathophysiology

- 1) Relative overuse vs. traumatic
- 2) Repetitive microtraum to common origin of wrist and finger extensor musculature at the lateral epicondyle

4. Etiology

Common activities leading to epicondylitis

- 1) Recreational-tennis, racquetball, squash, fencing
- 2) Occupational-meat cutting, plumbing, painting, raking, weaving

5. Pathoanatomy

- 1) Most often involves ECRB >> ECRL or EDC
- 2) Microscopic pathology: “angiofibroblastic tendinosis” (Nirschl 1979)
 - Disoriented collagen fibers
 - Increased fibroblasts
 - absence of inflammatory cells
- 3) ECRB involved 100%
- 4) 97% tendinosis
- 5) 35% gross rupture

6. Diagnosis

- 1) History of overuse

- 2) Key to diagnosis—Tenderness 25mm distal / anterior to lateral epicondyle
- 3) Pain with resisted wrist / finger extension with elbow extended
- 4) Neurologic exam: normal
- 5) X-ray: normal (soft tissue calcification-22~25%)
- 6) MRI reserved for difficult cases
- 7) D / D-Radiculopathy
 - Compressive neuropathy
 - Intraarticular pathology(OCD, DJD, Loose bodies, Plica)

7. Treatment

- 1) Prevention
 - Avoidance of provocative activities
 - Improved mechanics
 - Improved equipment(i.e., tennis)—proper grip size, light racquet, decreased string tension
- 2) Nonoperative treatment
 - Temporary cessation of activity
 - Ice / NSAIDs(10~14days)
 - primarily for pain control and secondary synovitis
 - Histology shows lack of inflammatory cells
 - Corticosteroid injections to subaponeurotic space
 - Counterforce bracing
 - Theory: brace inhibits full muscle expansion, thereby decreasing force transmitted to epicondylar region
 - EMG data suggests benefit
 - Rehabilitation—Extensor stretching, Progressive strengthening
 - Results
 - 95% success(Cicotti & Lombardo)
 - 18-54% recurrence(Price et al, 1991)
 - 40% persistent symptoms(Binder & Hazelman)
 - Remains the mainstay of treatment
- 3) Operative treatment
 - Indication
 - Persistent pain
 - 6~12 months failed nonoperative treatment
 - Open surgical treatment
 - Incision—just anteromedial to the lateral epicondyle
 - Reflection of extensor origin—off lateral epicondyle
 - Debridement of ECRB—excision of degenerated tendon
 - Preparation of epicondyle—curette / rongeur to revascularize

- Drilling of epicondyle-two "V" shaped tunnels
- Reattachment of extensor-Heavy suture through tunnels
- Closure of interval side-to-side
- Percutaneous extensor tendon release
 - Transverse incision just distal to lateral epicondyle
- Arthroscopic lateral release
 - I. Advantages
 - Preserves common extensor origin
 - Speeds rehabilitation
 - Allows intraarticular examination for chondral lesions, loose bodies
 - Shorter operative time
 - II. Equipment
 - 4.0 mm 30° arthroscope
 - 3.5 mm / 4.5 mm full radius resector
 - 3.5 mm / 4.5 mm arthroscopic burr
 - III. Proximal medial portal-for viewing and inflow
 - IV. Anterolateral portal-for instrumentation
 - V. Arthroscopic classification of lateral epicondylitis
 - Type I intact capsule
 - Type II linear capsular tear
 - Type III complete capsular tear
 - VI. Procedure
 - Intraarticular inspection
 - Identification of ECRB origin after resection of capsule at lateral epicondyle using full radius resector
 - Debridement of lateral epicondyle and lateral epicondylar ridge with resector
 - Decorticating of lateral epicondyle and lateral epicondylar ridge with arthroscopic burr
 - Surgical goal is for 2 cm debridement and decortication at ECRB origin without violation of superficial fascial plane
 - VII. Conclusion
 - Technically feasible
 - Technically reproducible

Postoperative regimen

- Splint 7~0days
- Progressive ROM
- Isometrics at 3~4weeks
- Progressive strengthening at 4~6weeks
- Return to sport / occupation by 12weeks