EXTRA ARTICULAR ENDOSCOPY (60 min.)

1. Extraarticular endoscopy in upper limb
   Gregory Bain

2. Endoscopic nerve release in upper extremity
   Pietro Randelli

3. Bursoscopy and soft tissue endoscopy around lower leg.
   Robert Smigielski

4. Tenoscopy
   Niek C. Van Dijk

5. Extraarticular endoscopy around the foot.
   Jose Alloza

6. Endoscopic Achilles tendon treatment
   Urszula Zdanowicz
Endoscopy around the elbow is reasonably new technique. However it is becoming increasingly used in cadaveric teaching courses and clinical practice.

**Biceps endoscopy**

A biceps endoscopy can be performed as a diagnostic procedure to identify the presence of partial tears, synovitis or other abnormalities of the distal biceps tendon insertion. An incision is made over the anterior aspect of the elbow and the biceps tendon is identified using this open technique. The trochar and cannular is introduced into the bursa and then the standard elbow arthroscopy is introduced (Fig 1).

The distal aspect of the tendon and the radial tuberosity can be visualised. If there is adjacent synovitis or a tear of the tendon then this can be assessed (Fig 2).

Synovitis can be resected with the aid of a motorised resector.

In those patients with a partial tear of the tendon can be managed with an endoscopic debridement. If there is greater than 50% of the tendon substance torn then the authors would recommend a surgical release of the biceps tendon and reattachment using the Endobutton technique. The Endobutton™ is robust and has holes large enough to accommodate No 5 Ethibond™ (Fig 3). The stronger fixation allows early active mobilization. Surgical fixation of the tendon has been performed as an endoscopic procedure.

![Figure 1](image)  
*Biceps Bursoscopy with scope introduced with a mini-open approach directly into the biceps bursa.*
Endoscopic Ulnar nerve release

Endoscopic carpal tunnel release is now an accepted procedure and has been reported in randomised prospective studies to have a faster return of grip strength and return to work. The ulnar nerve can be endoscopically released to the level of the elbow using the an endoscopic device which involves making an incision adjacent to the medial epicondyle and inserting the endoscopic device into the cubital tunnel releasing the soft tissues including the cubital retinaculum under endoscopic magnification. A cadaveric study has been performed to assess the safety in a cadaveric model. A clinical study has been performed and demonstrated that the endoscopic technique has a lower complication rate than open releases.
Fig 4 Ulnar nerve and branches, following Endoscopic Ulnar nerve release in cadaveric model.

Fig 5 Endoscopic release of the Ulnar nerve, A ulnar nerve in view of scope. B releasing the cubital retinaculum. C ulnar nerve following release.

**Olecranon bursoscopy**

Patients with olecranon bursitis have been traditionally managed with an open excision. However there is a high complication rate particularly in those cases with rheumatoid arthritis or gout. Chronic sinus formation has been known to occur in these types of cases. By performing an endoscopic assessment and excision of the bursa the overlying skin is not violated, so therefore wound healing is much less of an issue. The portals are placed away from the point of the elbow.
Fig 6 Olecranon Bursoscopy, A set-up, B endoscopic view.

References


Extra Articular Endoscopy around the foot

Jose Felipe Marion Alloza

Thinking about the distinct possibilities of the extraarticular endoscopy around the foot and looking for a synchronicity with the team in this panel, the focus of this talk is going to be in the analysis and study of the alternatives to access the plantar fascia pathology by the endoscopic method.

Plantar heel pain is one of the most prevalent symptom seen by the orthopedic surgeon.

As well known, most of the patients respond well to a course of no operative sequential propose treatment:

- Achilles tendon stretching
- Orthoses,
- Physical therapy
- Corticosteroid injections,
- Platelet rich plasma injections
- Shock wave therapy

Although most patients can be successfully conservatively treated a small percentage of patients will have symptoms that are refractory to such methods. The possibility of distinct involved diagnosis and the necessity for the recognition of the co morbidities makes the final of the treatment sometimes more elongate or inconsistent.

It is also notable that most of the cases with elongated time and under estimated costs are not so comfortable and exciting for the patients, especially for the athletes.

The fail in no operative care, without relief after the treatment in each of the steps proposed for the heel pain guideline open the way to surgical intervention options.

Various surgical procedures have been advocated to treat plantar fasciitis or fasciosis.
Plantar fasciotomy, with or without excision of some heel spur; complete or partial plantar fascia release are between the discussed topics besides the possibility and benefits of the endoscopic procedure against the open plantar fascia release for the proximal plantar fascia.

Endoscopic release of the plantar fascia is becoming an increasingly popular alternative to open procedures for the treatment of chronic plantar fasciitis. The minimally invasive procedure tendency, focus in the precision of the methods, avoiding iatrogenic complications and looking for benefits of the minor postoperative side effects using a single portal technique or a double portal is the highest point.

Some of the studies and related authors concluded that those patients in which the endoscopic fasciotomy was performed had significantly less postoperative pain, returned to regular activities 4 weeks earlier, and had fewer complications postoperatively than those patients involving traditional heel spur surgery.

Evaluation of the reproducibility of the procedure, adequacy of the release, possibility of damage to local structures are appointed and organized from the literature and our group experience.

Although much debate exists about the appropriateness of the procedure and the necessity for more long-term prospective randomized studies still exists, the endoscopic release of the plantar fascia is a reality and an applicable method to be considered in the treatment of the plantar fascia pathology.

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