



Ankle arthroscopy: Short-term outcome in ten consecutive patients

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ABSTRACT

Fifteen ankle arthroscopies performed between 2005 and 2012 were analyzed to evaluate the risks and benefits of the procedure. All arthroscopies were performed by one surgeon using the same nonskeletal traction technique. Ten of the fifteen patients were succeed to reach to the follow up. Average follow-up was 22.65 months (range: 6-88). There were 8 males and 2 females patients. Average age was 45 (range: 34-66) years. The duration of preoperative symptoms averaged 40 (range: 5-120) months. Preoperative clinical and radiographic examination was performed. At the closing follow-up, clinical examination, visual analog scores and X-rays were repeated. The diagnosis was osteochondral lesions of the talus in five patients, anterior bony impingement in 3, and soft tissue impingement or synovitis in 2. Overall, in seven patients (70%) the operative results were good; eight patients (80%) were satisfied by the procedure. Those patients who had been diagnosed with diffuse synovitis or posttraumatic chondromalacia had poor results, whereas patients with a localized osteochondral lesion of the talus, or localized bony or soft tissue impingement experienced the best results. There were no complications from ankle arthroscopy in this series. Ankle arthroscopy appears to be a relatively low-risk procedure with substantial benefits, particularly in localized disease of the ankle joint.

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1. Introduction

The introduction and development of arthroscopy in the 1970s and the development of video-endoscopy in the following decade along with that of movable arthroscopic surgery instruments have led to the general use and standardization of ankle arthroscopy. The latter period also saw the reporting of clinical applications, indications, anatomy and technique, particularly by (Drez et al., 1981; Guhl, 1986; Ferkel and Fischer, 1989), and the subsequent generalization of the method. The publication of reports on the application and results of arthroscopy to the ankle has recently been increasing. In this report, the risks and benefits of our arthroscopic procedures performed by a noninvasive distraction technique are evaluated retrospectively with the use of a subjective visual analog scale (SVAS), clinical examination and X-rays.

2. Patients and methods

Between 2005-2012, arthroscopy of the ankle was performed

by the same surgeon for fifteen patients. Ten patients were completed the follow-up visits over an average of 22.65 months (range: 6-88); eight were males and two were females. Their average age was 45 (range: 34-66) years. The patients had been symptomatic for 42 months (range: 4-108) preceding surgery. Of a total of 15 patients, 12 had received conservative treatment during 3.8 (range: 3-12) months, by activity planning, physical and rehabilitation therapy or non-steroidal anti-inflammatory drugs. All patients underwent manual distraction during the intervention, performed by an assistant. Preoperatively, clinical examination, X-ray (posteroanterior, lateral and mortise view) and magnetic resonance imaging (MRI) were performed. These patients were evaluated again at their last follow-up visit by clinical and X-ray examination as well as a (SVAS) assessment (Table 1).

The SVAS had been developed for the subjective evaluation of the outcome of a given procedure. It has been suggested that patient perception is the most important criterion in evaluating interventional outcome (Flandry et al., 1991).

Table 1. Subjective Visual Analog Scale (the question for the patient's satisfaction has been added by ourselves)

Patient name and surname:	
We would like to know how your ankle is doing. Please mark the appropriate number in the ranges among the questions to attribute a score.	
1. How painful is your ankle?	
Very bad	0 1 2 3 4 5 6 7 8 9 10 No pain
2. How often is your ankle swollen?	
Always	0 1 2 3 4 5 6 7 8 9 10 Never
3. How was the change in your ankle joint when performing workaday activities?	
No change at all / Worse	0 1 2 3 4 5 6 7 8 9 10 Normal
4. How much of an improvement resulted from the arthroscopic procedure in your ankle?	
No improvement at all	0 1 2 3 4 5 6 7 8 9 10 Entirely cured
5. Are you satisfied with your surgical procedure? YES - NO	

As for operative technique, we preferred to use general or epidural anesthesia in our patients; the procedure was performed with a tourniquet. The patient was placed as described by Parisien, with a cushion under the ipsilateral thigh to lift the latter, thus preventing its external rotation (Parisien and Vangsness, 1981). The anterior part of the ankle joint was positioned to fully face the surgeon, allowing easy posterolateral access by rotating the leg medially.

The anteromedial and anterolateral portals were used for all cases. Special systems were not used for intraarticular saline irrigation. A systematic ankle arthroscopy was performed, using a 4.0 mm, 30° arthroscope. None of the diagnoses reached by the preoperative X-rays or the arthroscopic examination itself necessitated the use of the posterior portal.

The indications to arthroscopy were defined as follows: Unexplained pain, swelling, joint rigidity, instability, hemarthrosis, locking, soft tissue injury, joint cartilage injury, impingement syndrome, arthrofibrosis, fracture, synovitis, intraarticular free bodies, osteophytes, osteochondral defects, and arthritis necessitating arthrodesis.

3. Results

The right ankle was operated in seven patients and the left one in the three others. The patients preoperative symptoms were summarized in Table 2. The diagnoses defined during arthroscopic surgery were listed in decreasing order of frequency in Table 3. Intraarticular shaving using a powered device was performed in five patients. Postoperative care included cold application for the first 24 hours followed by 3-5 days of elevation; analgesic and anti-inflammatory therapy was given. Active postoperative mobilization was initiated after 24 hours and walking after 48 hours. Patients were allowed to walk bearing the full weight after 2 weeks. The procedure was successful in seven (70%) of the patients (mean SVAS score 7.45), while eight patients (80%) expressed their satisfaction with the procedure result. The results were poor in those patients who had been diagnosed with diffuse synovitis and chondromalacia, and good in those with localized osteochondral lesions of the talus and localized bone or soft tissue impingement.

Table 2. Preoperative symptoms

Symptoms	Patient Number
Pain	4 (40%)
Pain and swelling	2 (20%)
Pain and recurring ankle sprain	2 (20%)
Pain and gait problems	2 (20%)

Table 3. Diagnoses made during the procedure

Symptoms	Patient Number
Osteochondral lesion of the talus	5 (50%)
Soft tissue impingement syndrome	3 (30%)
Synovitis	2 (20%)

4. Discussion

In patients with recurring ankle problems, arthroscopy enables most accurate diagnoses with the advantage of direct vision in patients with persistent ankle problems. It can also be used to treat the diagnosed pathology at the same session.

Several conditions that used to require open surgery in the past are now treated in arthroscopy. The diagnosis and treatment of the following conditions can currently be performed in arthroscopy: Osteochondral lesions (Cuttica et al., 2012), post-traumatic cysts of the talus (Ogilvie and Sarrosa, 2000), anterior and posterior impingement syndromes (Wu et al., 2012), ligament lesions (Ogilvie et al., 1997), and synovitis (Brennan et al., 2012).

In this series, we avoided using invasive distraction systems in any patient, considering the potential risks such as neurovascular injury, infection, stress fracture and nail fracture. An arthroscopic intervention from the anterolateral and anteromedial portals, under manual distraction performed by an assistant was carried out in all cases, using small-bore canulas and gravity-assisted irrigation systems.

An examination of published post-arthroscopy rehabilitation programs show the use of varying methods. Van Dijk and Scholte (1997), used a compressive bandage, then full weight bearing mobilization after five days; Baker and Morales (1999), proposed pressing the tip of the finger for 2 weeks followed by mobilization with a full load while Tüzüner and Aydın (1998), proposed 5 days immobilization, and a full weight bearing at the end of 3 weeks. Notwithstanding such variability, all authors agreed on starting active flexion and extension exercises starting on the first postoperative day. All patients in our series also started early active exercise; they were allowed to walk with bearing part of the body weight two days after the procedure and their full weight after 2 weeks.

None of the patients in our series developed neurovascular complications. This corresponds to the low complication rates reported in larger published series (Suzangar and Rosenfeld, 2012)

There are very few published studies evaluating the patient's own perception of the procedure outcome using a SVAS. SVAS evaluation indicated definite symptom improvement, especially in localized lesions, for our patients. The same success could not be obtained in patients with diffuse lesions. These findings are similar to those reported in other publications on the anterolateral soft tissue impingement syndrome (Aydın, 1996), chronic synovitis (Martin et al., 1989) and osteochondral lesions of the talus (Parisien and Vangsness, 1986).

We concluded that ankle arthroscopy appears to be a procedure which may be used with relatively low risk and substantial benefit in the diagnosis and treatment of ankle joint lesions, particularly if localized.

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