

Case Study - Use of ACP in the Achilles Tendon

Dr. Guido Laps, Orthopädie am Gürzenich Joint Practice, Cologne, Germany

Patient: 41yr, male, triathlete

Runs: 70 km / week

History

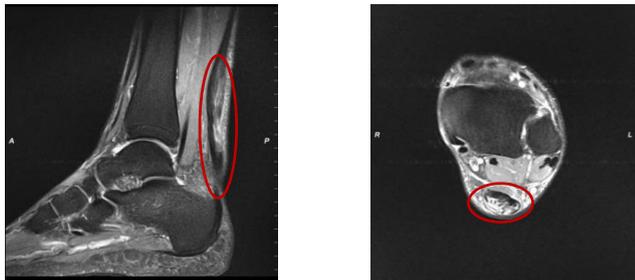
The patient has been complaining for the last 1.5 years of chronic, progressive stress-induced pain initially only during running training, starting after completing 8 - 10 kilometers. Then also “start-up” pain in the morning. Then, a day before his presentation at our practice’s outpatient clinic, he twisted his left ankle whilst running in the forest, followed by sudden sharp, severe pain in the area of the left Achilles tendon. So far no ligamentous injuries in the area of the ankle.

Clinical Findings

Slightly flat feet on both sides without toe malposition, straight leg axis without significant leg length discrepancy, slight left-sided pelvic and shoulder elevation, no significant discomfort in the entire spine, normal neurological status the same on both sides, normal venous status.

MRI Results

Tendinitis-induced partial rupture, traumatic tendency with over 50 % tendon involvement in the transverse section.



MRI prior to start of treatment / injections

Therapy

Following a thorough explanation, the patient would initially not like surgical therapy. Our therapy regimen includes a standardized, local injection treatment.

- Injection protocol: Five injections every six to seven days

Should the MRI confirm tendinitis with partial rupture, the ACP is intratendinously injected directly into the tissue defect. In this way, we hope to achieve a maximal proliferation-promoting effect of the platelet / growth factors on the tenocytes at the site of the damaged tendon structures.

In order to place the ACP as accurately as possible in the affected tendon area, the craniocaudal longitudinal expansion of the defect is first measured via sagittal imaging (high-resolution, fat-suppressed proton density-weighted image/pd-fs in eighth-channel ankle coil) using an integrated measuring tool. By means of the transverse layering, one can determine whether the defect site is located medially, laterally, ventrally or dorsally.



The measured distances and reference points are marked on the abdomen of the supine patient and then the ACP is injected intratendinously into the tissue defect at about 1 cm intervals by means of 25 G needles.



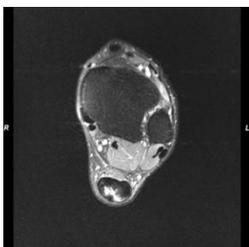
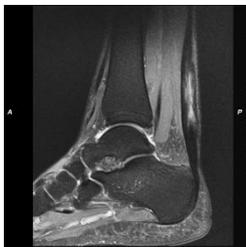
In parallel, there was accompanying

- Relieving of strain on the Achilles tendon by means of a custom-made full-sole insert with an integrated 10 mm heel elevation over 10 weeks
- Total abstention from running, no jumps and landings, swimming and cycling within the pain-free range
- Eccentric (in the first four weeks with push-offs of both legs)

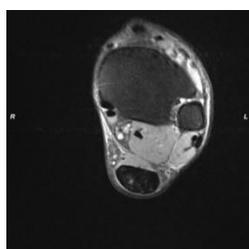
The results of the MRI prior to the start of therapy and 14 weeks after the initial injection are shown in the figures.



MRI prior to start of treatment / injections



MRI 10 weeks after the initial injection



MRI 14 weeks after the initial injection

Course

Almost pain-free after six weeks, after 14 weeks re-entry with slow running stress (following previous running analysis and change of running shoes), continuous increase in stress within the pain-free range, after 18 weeks original activity level reached.

About the Author



Dr. med. Guido Laps is an orthopedics and trauma surgery specialist with additional qualifications in sports medicine and chirotherapy and he is a co-founder/owner of Orthopädie am Gürzenich.

As a certified foot surgeon (master's certificate), his specialty is the conservative and surgical treatment of diseases and acute (sports) injuries of the entire foot and ankle area. He is a member of the world's largest foot society, the AOFAS (American Orthopaedic Foot and Ankle Society).

In addition to giving national and international lectures, he is an instructor for surgical courses and an expert on ACP treatments for the training of medical colleagues.

As well as supporting numerous professional and competitive athletes, especially in the field of running, he has been a team doctor (of the VBG) for the German Bundesliga handball club TSV Bayer Dormagen since 2007.