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Acutrak 2® Headless Compression Screw System

Medial Double Arthrodesis in the Setting of Advanced Rigid Bilateral Pes Planus

Case Study

Martina Randall, DPM

A 62-year-old male patient with pain and deformity in both feet was treated with Large Acutrak 2 Headless Compression Screws.

Left and Right Postoperative

Acumed® is a global leader of innovative orthopaedic and medical solutions.

We are dedicated to developing products, service methods, and approaches that improve patient care.

Case Study | Martina Randall, DPM


Preoperative X-ray


Postoperative X-ray


Preoperative X-ray

Medial Double Arthrodesis in the Setting of Advanced Rigid Bilateral Pes Planus

Patient History

A 62-year-old male patient with right foot pain and a past medical history of hypertension, hyperlipidemia, and obesity, presents for treatment of his right, greater than left, foot deformity and pain.

The patient was referred for surgical consultation and failed orthotics, and an Arizona brace. The patient has had progressive collapse of his arch that worsened over the past several years. His pain increased, limiting his daily activities.

After appropriate weight-bearing images were taken, surgical intervention was planned. A medial double arthrodesis with gastrocnemius recession was proposed.

Intraoperative Treatment

The soft tissue release is performed prior to the osseous work.

The patient is supine and the gastrocnemius recession is performed via a medial approach with a towel bump under the ipsilateral heel. The incision is placed two fingerbreadths posterior to the posterior border of the tibial and two fingerbreadths distal to the gastrocnemius indentation. I elected to proceed with a strayer transecting 75% of the medial gastrocnemius fascia. If necessary, a vaginal speculum can be used for better visualization with these posterior chain releases.

Incision placement for medial double arthrodesis begins just posterior to the medial malleolus and extends to the medial cuneiform along the course of the posterior tibial tendon.

If viable, the tendon may be reflected plantarly when accessing the talonavicular joint, and dorsal when accessing the subtalar joint. Often, the posterior tibial tendon must be repaired, debrided, or excised. An intraoperative exam in this case revealed a tear of the posterior tibial tendon with mild retraction. The tendon end was debrided and repaired after osseous correction. Adequate joint prep consists of initial debridement with an osteotome and curette, followed by subchondral drilling with a 2.0 mm solid drill. I like to proceed with fixating the talonavicular joint, first focusing on restoring the 1st metatarsal - talar angle and swinging (adducting) the foot back into a neutral position. The subtalar joint is fixated with two posterior to anterior screws. Fixation was performed with large Acutrak screws, plus staple fixation. During the intraoperative examination after the medial double was stable, residual navicular-cuneiform sag was present, albeit mild. I then extended the fusion distally to the N1-C1 joint. An Acumed bone graft harvest dowel was used to harvest autogenous bone and fill in any gaping at the multiple fusion sites. Popliteal nerve blocks are routinely performed for these cases to limit narcotic use.

Once final X-rays are taken, the soft tissue was repaired, incisions are closed, and a well-padded posterior splint is applied.

Postoperative Treatment

The patient was placed into a posterior splint and kept non-weight-bearing for 4 weeks, toe touch for 2, and a progression to full weight-bearing in a boot at the 6-week mark.

At 10 weeks postop, the patient was able to transition from the boot to an ankle brace, with use as needed after 3 months. I recommend compression socks from 2 weeks to 3 months postoperatively.

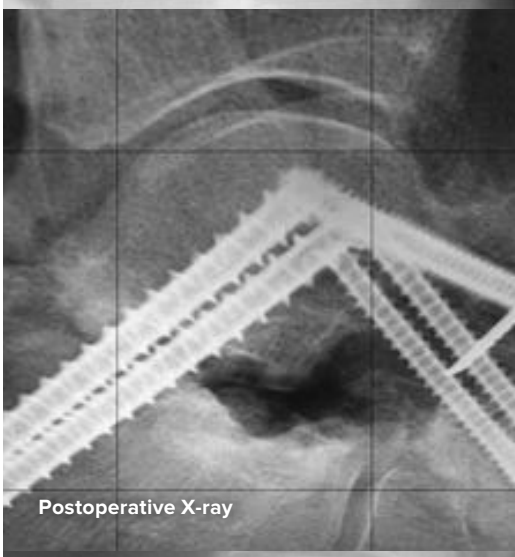
Discussion

I prefer an all-medial approach in these cases because you can get great exposure of the talonavicular and subtalar joint. Most importantly, there is no incision on the lateral, tension side of the foot status postcorrection. Historically, even in the presence of mild/moderate calcaneal cuboid osteoarthritis, sufficient talonavicular and subtalar joint correction will negate the need for a calcaneal cuboid arthrodesis. This technique eliminates lateral wound complications, allows the calcaneocuboid joint to maintain its accommodative nature, and provides great clinical outcomes.

I believe the Acutrak 2 screws complement hindfoot arthrodesis, providing maximum compression without the need for plate fixation in most cases. They also limit the potential for soft tissue complications.

Since the patient experienced success with the first surgery, 12 months later, he proceeded with surgery to the contralateral extremity. A similar approach and fixation was used with Acutrak 2 large screws.


Postoperative X-ray


Postoperative X-ray


Postoperative X-ray


Intraoperative Clinical

FNA70-13-A

Effective: 2023/01

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