

KEY PROCEDURES

MINI-OPEN ACHILLES TENDON RUPTURE REPAIR

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Published outcomes of this procedure can be found at: *Am J Sports Med.* 2014 Mar;42(3):731-6.

Investigation performed at Universidad del Desarrollo—Clinica Alemana, Santiago, Chile

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Abstract

Background: We present a mini-open Achilles tendon rupture repair technique, which does not open the paratenon and avoids the sural nerve. We perform it to recover the normal working length of the gastrocnemius-soleus complex musculotendinous unit as well as possible, trying to avoid soft-tissue complications.

Description: This repair is performed via a 3-cm-long incision that is placed 4 cm proximal to the Achilles tendon gap. Through this incision, the interval between the superficial fascia of the leg and the paratenon is developed. Distally, 2 small incisions are made in order to introduce into the calcaneus 2 bone anchors loaded with nonabsorbable sutures. These sutures are retrieved from the distal attachment site through the interval between the fascia and the paratenon with specifically designed suture passers, and obtained through the proximal incision. The sutures are then woven through the proximal stump of the Achilles tendon, the first ones in a Bunnell and the last ones in a crisscross manner, recovering the physiological equinus of the ankle¹. The fascia and skin are closed appropriately.

Alternatives: Percutaneous surgical repair techniques.

Open surgical repair techniques.

Orthopaedic nonoperative treatment.

Rationale: This surgical technique differs from other available mini-open techniques in that it respects the rupture hematoma, accessing the tendon far from the rupture site; it does not violate the paratenon; and because of the placement in a safe anatomical interval, it does not injure the sural nerve. Because of the mini-open approach of the technique, soft-tissue complications are rare, and thus indications for this technique can be expanded over those of open surgical techniques.

Expected Outcomes: Patients can expect a nearly complete recovery of gastrocnemius-soleus function, after an appropriate rehabilitation period. Soft-tissue complications are rare, and therefore early rehabilitation can be performed. The rehabilitation lasts for 5 months to achieve a high level of physical function. A low rerupture rate (2%) can also be expected². The average return to work is 56 days.

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Important Tips:

- Try to operate within 10 days of the rupture to avoid scar formation at the rupture site.
- Plan the surgical procedure according to the level of the rupture in order to ensure the suture passers are long enough to span the rupture site from the proximal incision up to the calcaneus.
- Ensure the bone anchors are placed in the middle of the total height of the calcaneus, avoiding the entheses, and align the anchors to be perpendicular to the axis of the calcaneus.
- Follow the proximal suturing technique in order to obtain the best resistance of the repair. Taking care not to overtighten consecutive sutures, restore the appropriate level of physiological equinus.

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