Calcified Achilles Tendon Rupture Repaired With An Anchor Suture Fixation: A Case Report

Sree RL Chandra Sekaran, MD, Hospital Kuala Lipis, Pahang, Malaysia
Ikmal M Hazli, MD, Hospital Kuala Lipis, Pahang, Malaysia

INTRODUCTION: Achilles tendon rupture occurs most commonly in men 30 to 50 years old and increasing in frequency as more people exercise. However, the treatment of Achilles tendon rupture remains controversial. We present a case of calcified Achilles tendon rupture repaired with an anchor suture fixation.

CASE REPORT: Mr. R is a 45-year-old gentleman with history of injury over his right ankle while playing badminton. He presented with pain and swelling over his ankle and pain upon flexing his ankle. The plain radiographic imaging of his bilateral ankle showed calcified Achilles tendon, and revealed a right Achilles tendon rupture at the calcified zone. The patient underwent an Achilles tendon repair with anchor suture fixation. Post- surgery, an ankle brace with adjustable ankle range of motion was applied, to keep in plantar flexed position with non weight-bearing for 4 weeks. Radiographic images showed that the right Achilles tendon restored to near anatomy position. After series of physiotherapy sessions, patient was able to plantar flex (0-35°) and dorsiflex equivocal as the contra-lateral ankle. He was able to ambulate with no alteration in gait pattern.

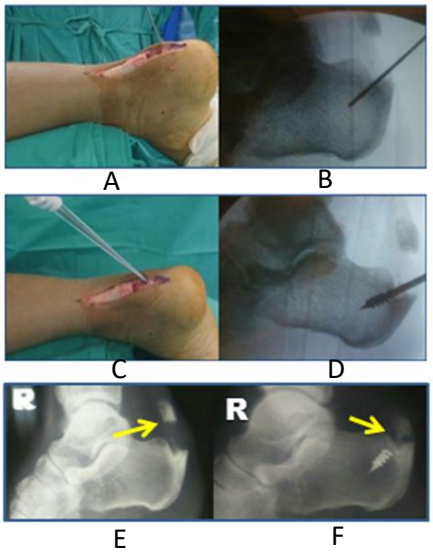
DISCCUSSION: Achilles tendon is the most frequently ruptured with an incidence of 18 and 37 per 100,000. Tendon injuries heal slowly, with impaired function and residual weakness. The principal treatment is surgery and immobilization or immobilization alone. Where the complication of re-rupture is higher in immobilization alone (13.4%) compared to surgery (1.4%) and has a slower time to participate in sports post-injury. Usually, Achilles tendon ruptures occur 2-6cm proximal to the insertion of the calcaneus bone. For this patient it was less than 2cm from the insertion of the calcaneus. Close proximity to the distal end of the tendon insertion, remains a challenge to repair thus a suture anchor was used for the fixation.

CONCLUSION: Suture anchor fixation is biomechanically stronger in Achilles tendon rupture with short distal stump, which leads to less tendon repair gapping and failure. Which will increase ability to start early active rehabilitation and ambulation.



A : Right ankle radiograph shows separation of the ruptured calcified Achilles tendon(red arrow).
B : Comparison left ankle radiograph shows intact position of the calcified Achilles tendon insertion (yellow arrow).

Figure 1



A : Guidewire insertion.

B : Image intensifier showing guidewire placement.

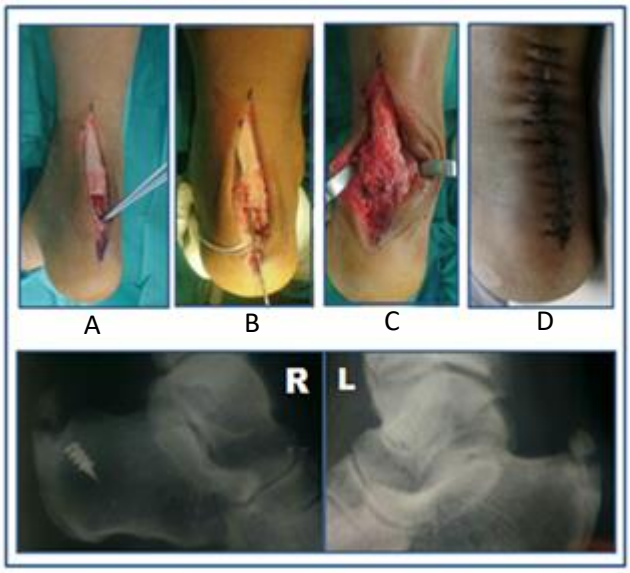
C: Anchor suture insertion.

D: Image Intensifier showing anchor suture placement.

E: Pre-operative plain radiograph of ruptured calcified tendon.

F: Post-operative plain radiograph of fixation with anchor suture.

Figure 2



A: Sutures from the anchor placed in order.

B: Sutures passed through the tendon using Krackow technique.

C: Post-repair of tendon Achilles.

D: Post-operation day 14.

E: Comparison post-fixation anchor suture of the right calcified Achilles tendon with the left unruptured calcified Achilles tendon.

Figure 3

REFERENCES:

1. McCoy BW, Haddad SL. The strength of Achilles tendon repair: a comparison of three suture techniques in human cadaver tendons. Foot Ankle Int. 2010;31:701–705.
2. Carmont MR. Achilles tendon rupture: the evaluation and outcome of percutaneous and minimally invasive repair. Br J Sports Med. 2018 Oct;52(19):1281-1282. [PubMed]
3. Haapasalo H, Peltoniemi U, Laine HJ, Kannus P, Mattila VM. Treatment of acute Achilles tendon rupture with a standardised protocol. Arch Orthop Trauma Surg. 2018 Aug;138(8):1089-1096. [PubMed]
4. Kanchanatawan W, Densiri-Aksorn W, Maneesrisajja T, Suppauksorn S, Arirachakaran A, Rungchamrussopa P, Boonma P. Hybrid Achilles Tendon Repair. Arthrosc Tech. 2018 Jun;7(6):e639-e644. [PMC free article] [PubMed]
5. Dams OC, van den Akker-Scheek I, Diercks RL, Wendt KW, Zwerver J, Reininga IHF. Surveying the management of Achilles tendon ruptures in the Netherlands: lack of consensus and need for treatment guidelines. Knee Surg Sports Traumatol Arthrosc. 2018 Jul 03; [PubMed]

BIOGRAPHY

Sree RL Chandra Sekaran, MD, graduated from University of Sriwijaya in Indonesia then joined the Orthopaedics Department of Kuala Lipis Hospital in Malaysia as an intern since June 2017. Dr. Sree has been attracted to the early operative experience in Hospital Kuala Lumpur as a trainee doctor. Kuala Lumpur having high rising cases received related to patients who are involved in road and workplace accidents besides the joints, ligaments and bone problems. Dr. Sree feels that at Kuala Lipis Hospital, provides great orthopaedic experience, She wishes to proceed into the Masters of Orthopaedic Surgery Programme to further her passion in orthopaedics and would like to contribute to the development of the orthopaedics field as a spine specialist.

Email: lakshmy803@gmail.com