

A PERCUTANEOUS KNOTLESS TECHNIQUE FOR MID-SUBSTANCE ACUTE ACHILLES TENDON RUPTURE: HOSPITAL RAJA PERMAISURI BAINUN EXPERIENCE

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INTRODUCTION:

Acute Achilles tendon rupture commonly occurred in middle-aged men during recreational sporting activities. Deciding for percutaneous versus open repair techniques is still a constant debate. We would like to share our virgin experience of using percutaneous knotless technique and its outcome.

METHODS:

Patient is placed prone with a non-sterile thigh tourniquet applied. Both legs are prepared and draped to allow for intraoperative assessment. A horizontal incision about 3 cm long is made approximately 1 cm proximal to the distal end of the palpable defect at the tendon rupture. Sural nerve laterally identified by blunt dissection and paratenon is cut horizontally. Proximal portion of Achilles tendon is grasped with a Kocher clamp and a McDonald elevator is used to free the proximal Achilles tendon from the surrounding paratenon.

The Percutaneous Achilles Repair System (Arthrex) or PARS jig is placed in the incision and advanced proximally between the tendon and paratenon until the gastrocnemius complex muscle belly stops it.

Usage of digital palpation aids to confirm that the tendon stump is captured. A 1.6-mm guide pin with a Nitinol loop (Arthrex) is placed through the No. 1 hole of the jig to secure the tendon stump to the jig. Subsequent guide pin and suture (FiberWire & TigerWire by Arthrex) are inserted following guide as per instruction in the system. The device is then slowly removed from the leg, pulling the suture through the transverse incision site and within the paratenon, avoiding the sural nerve (Fig 1). Process is then repeated for distal stumps. The sutures are then tied in pair following the appropriate color and types while ensuring appropriate tension as compared to normal side (Fig 2).



Figure 2: Comparing tension and operation wound

RESULTS:

Wound healed after 14 days while maintaining patient non-weight bearing and a splint applied in resting position of ankle. Transition 2 weekly to a neutral position splint and then active plantar flexion and dorsiflexion up to 5° to 10° short of neutral. At 7 weeks postop, allowed full weight bearing. At 12 weeks patient is able to walk tip toed and at 16 weeks was discharged with ability to resume normal daily activity.

DISCUSSIONS AND CONCLUSION:

Percutaneous repair of acute Achilles tendon rupture may be considered in a mid-substance type. We do face problem to ensure the suture follow the correct path when passing it through the jig. With more experience this problem can be avoided.

Overall, we believe that this technique can allow earlier return to activities due to faster recovery potential. However, further clinical and biomechanical studies are still needed to verify this claim.

REFERENCES:

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