

MINI-INVASIVE TECHNIQUE OF ACHILLES TENDON LENGTHENING.

Vasu Pai MS, D[orth], National board [Orth], FICMR, FRACS, MCh[Orth]

Gisborne Hospital

New Zealand

All correspondence to

vasuchitra@gmail.com

INTRODUCTION

Many techniques of Achilles lengthening been described for: club foot, cerebral palsy, Acquired flatfoot, diabetic foot.

Basically consists of lengthening of the heel cord or selective lengthening of the gastro fascia. The lengthening of Achilles can be performed by open Z plasty or percutaneous lengthening.

We report a technique of Mini-invasive lengthening of Achilles which has features of both Open and percutaneous lengthening.

Advantages of this modification are:

- Controlled lengthening of the tendon

- Prevent excessive lengthening

- Easy; quicker

- Early weight bearing cast can be applied

- No skin related problems: scar irritation

- Less chance of tendon adhesion to the skin

- No chance of sural nerve damage

- Early healing as circulation of the tendon is not interfered

TECHNIQUE [Modified White technique⁵]

The patient in prone position, under tourniquet, double skin incisions is made as in Fig 1. The proximal incision is about 2.5 centimetres, six centimetre from the calcaneal tuberosity. The distal incision is 2 centimetres, 1 centimetre proximal to the calcaneal tuberosity]

The tendon sheath is opened and whole width of tendon is elevated with an artery forceps. Now partially tenotomy is performed both proximally and distally. In the proximal part, the lateral half of the tendon is divided and in the distal part medial half of the tendon is divided.

With forceful dorsiflexion of the ankle with knee in extension, the tendon can be stretched and 10° of dorsiflexion is easily achieved. Tendons ends on either side is stitched with a mattress stitch using 1 Vicryl

Wound is closed layers and the ankle is held in a neutral cast for 2 weeks and then in a below knee cast with knee in 10° dorsiflexion for further 6 weeks

DISCUSSION

The gastrocnemius-soleus can be lengthened at either the musculotendinous junction with an elongation at the level of the Achilles tendon through an open or percutaneous approach^{1,2,3,4} or aponeurotic recession^{6,7,8,9}.

Numerous procedures have been used in the treatment of equinus contracture; it is difficult to compare studies and success rates. The surgical management of ankle equinus is a widely debated topic, and procedure selection is often based on surgeon preference because there is no consensus regarding the superiority of a single procedure.

The recurrence rate in the literature ranges from 0% to 50%, depending on the type of patient and the length of follow-up. Rattey et al.⁵ reviewed 57 patients who had 77 open heel cord lengthening. At an average follow-up of 10 years, half of children 3 years old or younger at the time of surgery had a recurrence of deformity compared with no recurrences in children who were at least 6 years old at the time of the initial procedure. They also found that hemiplegic patients were more likely to have recurrences than were diplegic patients, and that recurrences in diplegic were strongly correlated with surgery before age 4 years.

Over lengthening of the gastrocnemius-soleus should be avoided, especially in an ambulatory child, because it can cause weakness in push-off and crouch gait.¹⁰ Because over lengthening is much less common with an aponeurosis recession, many surgeons prefer this in ambulatory children and reserve open Achilles lengthening for patients with severe deformities that cannot be corrected by recession and for non-ambulatory patients.

Several modifications have been reported^{11,12}. We report a modified technique of lengthening of the Achilles tendon in cerebral palsy children which has the advantages of both percutaneous and open technique. This technique has several advantages over open procedures and we emphasize the minimally invasive nature of this technique, the low rate of complications and recurrence, and the absence of secondary deformation of the calcaneus since over-lengthening is not compatible with the technique.

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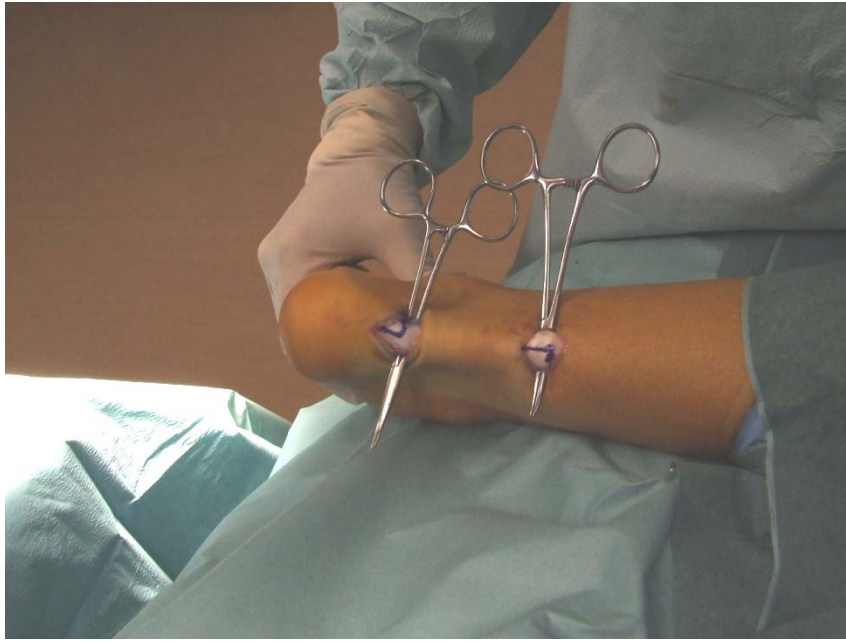


Fig 1: showing proximal and distal skin incision