



## SURGICAL REPAIR OF OLD NEGLECTED CUT INJURY OF TENDUACHILLIES BY MUSCLE SLIDE

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### ABSTRACT

**Background:** Late presentation of cut injury of tendoachillis is very common in our part of the country and retraction of cut ends are a major problem. **Methods:** In the present series 11 cases of different age groups and both sexes old injury of tendoachillis were treated by muscle slide and primary suture. **Results:** The results were excellent to good. **Conclusion:** The muscle sliding procedure is an excellent procedure to repair old tendoachillis.

**KEYWORDS:** old cut injury tendoachillis, repair by muscle slide.

### INTRODUCTION

Injury of tendoachillis by sharp instrument is common in our part of the country. Reporting the cases late is common and many times the cases get infected. Delays in treatment result from decreased pain after the initial injury, as well as misdiagnosis by the first evaluator, in up to 20-36% of patients.<sup>[1]</sup> These delays in treatment, whether operative or non-operative, can have detrimental effects on the final outcomes. Loss of Achilles function leads to loss of plantar flexion strength, weakness, fatigue, limp, inability to run, heel rise, play sports, and climb stairs.<sup>[2]</sup> Different methods are available to bridge the gap of cut ends like turned down strip of tendon,<sup>[3]</sup> fascia lata reefing, mobilisation of proximal stump and muscle bellies to points of entry of neurovascular bundles, transfer of peroneus brevis,<sup>[4]</sup> the posterior tibial tendons or flexor digitorum longus. Unfortunately none of the methods provide consistent results.

In the present series consistent results has been observed after repair of old cut-injury of tendoachillis by muscle slide of gastrocnemius and direct anastomoses of tendon ends.

### MATERIAL AND METHODS

In the present series 11 cases from May 2005 to December 2013 of old cut injury of tendoachillis between the age group of 24 to 50 years were studied. The age of injury Varied from 2 month to 6 months. Out of 11 cases 8 were male and 3 female. Duration of follow up ranged from 3 years to 10 years. 7 of the cases had injury on right side and 4 in left side.

The patients presented with pain and swelling behind the heel with gap in tendoachillis. The area was tender with mild swelling. All had history of injury by sharp cut instrument. They had weak planter flexion and were unable to stand on tip toe on the affected side. The Thompson test and O'Brien's needle test was positive in all the cases.

**Operative procedure:** The operation was performed under spinal anaesthesia. The patients placed under semiprone position under pneumatic tourniquet control. A 10 to 12 cm long lazy 'S' incision was made from the musculotendinus junction of gastrocnemius and distal to insertion of tendoachillis tendon. The tendon sheath was opened and both cut end of the tendon was freshened. The length of gap between tendon ends was measured keeping the knee in 30 degree flexion and the ankle in 20 degree of planter flexion. The gap varied from 1.5 cm to 2.5 cm. The distal end was mobilised up to its bony attachment and the proximal end for a length of 4 to 6 cm. An inverted V incision was made through gastrocnemius bellies just above musculotendinus junction with the arm of 'V' being at least 1.5 times longer than the defect. After sliding down the proximal cut end, the tendon ends were directly sutured by one modified Kessler stitch at the core of the tendon and few intermittent simple peripheral stitches with vicryl no 1 sutures. As per requirement vicryl no 2 sutures were also used. During suture the knee was flexed to 60 degree and ankle to 20 degree. The tendon sheath and muscle bellies were stitched with one zero Vicryl. The muscle bellies in inverted 'Y' manner. The skin were stitched by anacap. Post operatively the limb was immobilised in long leg cast with knee in 60 degree of flexion and ankle in 20

degree of planter flexion. Stitches were removed after opening a window in plaster after 12 days. After 6 weeks the cast was changed. A below knee cast was applied with ankle in 10 degree of planter flexion. Active quadriceps exercises and toes movement against resistance were encouraged. After 4 weeks the plaster was removed. Weight bearing allowed and shoes with about 2 cm raised heel was advised to use for 6 months. The patients were trained for muscle strengthening exercises.

**Table 1.**

Grade	Calf Atrophy (cm)	Range of motion difference (degree)	Toe raise difference (cm)	No. of patients
Excellent	Equal	Equal	<2	4
Good	0.6	<5	5	5
Fair	1.27	<10	10	2
Poor	>1.27	<20	>10	Nil

## DISCUSSION

The patients with chronic cut injury of tendoachillis needs operative intervention in order to have an optimum results. In chronic damage there is fixed retraction of proximal end and with scarring at the site of rupture tendon results in functional lengthening of the tendon and shortening of tricep surae muscle bellies. This leads to reduction in tension production of the muscle as stated by English AE et al.<sup>[5]</sup> The patients walks on heel with no push off. With proximal stump pull down and biomechanical correcting by V-Y technique an optimum outcome can be achieved as stated by Chi et al.<sup>[6]</sup> and Scheller et al.<sup>[7]</sup> current published literature does not allow the surgeon to determine the optimal form of management for chronic Achilles tendon rupture. Many techniques are available and, in experienced hands, they seem to produce acceptable results.<sup>[8]</sup>

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## RESULTS

The final results were assessed by calf circumference to measure wasting. The movement of ankle joint and power of calf muscle were assessed by standing on tip of toes. (Table1). Accordingly the cases were graded as excellent, good, fair and poor. In the present series excellent results were in 4, good in 5 and fair in 2.

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