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A Case Report on Functional Rehabilitation of Post-Operative Tendoachilles

Prasad B. Risaldar[1], Laukik Vaidya[1] and Kiran Kumar[2*]
[1]*Department of Musculoskeletal Physiotherapy, Ravi Nair Physiotherapy College, Datta Meghe Institute of Medical Sciences, Sawangi (Meghe), Wardha, Maharashtra, India.*
[2]*Associate Professor, Head of the department of musculoskeletal physiotherapy, Ravi Nair Physiotherapy College, DattaMeghe Institute of Medical Sciences (Deemed to be university) Sawangi (Meghe), Wardha, Maharashtra*

ABSTRACT
The Achilles tendon acute rupture (ATR) is a prolonged injury, since the operative reconstruction marks the beginning of a lengthy period of time. Duration of recuperation, a significant feature of post-surgical recovery is in the treatment of such injuries, the aim of early restoration of the level of pre-injury operation, without raising the risk of rupture or elongation of tendons. Despite the growing number of available RCTs and feedback, there is still no general agreement on the most desirable protocol. In addition, the available evidence is routinely ignored. A 40-year-old farmer reported with history of accidental injury by a plough to left foot. There was sudden pain, bleeding following the injury and was not able to stand on his own. The patient was unable to bear weight on the left foot and therefore was unable to take further action. Left tendoachilles tear Surgical repair of tendon followed by physical therapy intervention for functional rehabilitation. Physical therapy for 6 weeks led to early recovery of functional activities.

KEY WORDS: TENDON REPAIR, SURGICAL REPAIR, FUNCTIONAL, REHABILITATION.

INTRODUCTION

The Achilles tendon acute rupture (ATR) is a prolonged injury, since the operative reconstruction marks the beginning of a lengthy period of time. Duration of recuperation, asignificant feature of post-surgical recovery is in the treatment of such injuries, the aim of early restoration of the level of pre-injury operation, without raising the risk of rupture or elongation of tendons (Brumann et al., 2014). Despite the growing number of available RCTs and feedback, there is still no general agreement on the most desirable protocol. In addition, the available evidence is routinely ignored (Brumann et al., 2014). To predict a decreased risk of re-rupture, surgical repair has been suggested to increase strength(Okoroha et al., 2020). Both treatment options-non-surgical closed methods, open-label surgical procedures or percutaneous repair methods-include cast use (Mandelbaum et al., 1995).

A matter of discussion remains the correct postoperative recovery technique for acute Achilles tendon rupture (Zhao et al., 2017). It's indeed crucial that patients recover during the first year after injury, as 1-year results predict whether long-term disabilities will remain or not (Zellers et al., 2019). Traditionally, a prolonged period of operational management has been accompanied by non-weight bearing (NWB) to prevent the dreaded complication of tendon re-rupture with rigid cast ankle immobilization (Lightsey et al., 2019). A number of articles from GBD studies reflect on this issue (James et al., 2020; James et al., 2017;Murray et al., 2020; Murray et al., 2020; Vos et al., 2020). Studies on tendon repair surgeries have been reported (Jawade et al., 1995).

Patient Information and observation: A 40-year-old farmer who was feeding his cattle's nearby his residence, accidently tripped on a plough lying near by leading to an

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injury near the left foot. There was sudden pain, bleeding following the injury and was not able to stand on his own. He was taken to the rural hospital in 'Sawangi(Meghe), Wardha, Maharashtra(IN)' by hisneighbours, then there he was confirmed forachilles tendon cut,he was advised for immediate surgical left tendoachilles repair to prevent complications like re-rupture of the tendon. A reconstructive surgery was performed. A below knee slab was applied to prevent stretching of the tendon and to protect it. He was then referred to physiotherapy for further management of the repair and to help him for his activities of daily living.

Clinical findings: After the physical evaluation of the injured leg, it was discovered that owing to discomfort, the patient was unable to bear weight on the left foot and therefore was unable to take further action. Therefore, he was advised for surgical repair due to left tendoachilles rupture. Soon after the surgery the foot was kept in complete immobilization by the means of plaster cast with fingers left open for the movement for 6 weeks.

Table 1

Joint	Lt Active	Lt Passive	Rt Active	Rt Passive	Limitation
Hip					
Flexion	0^0-60^0	0^0-65^0	0^0-65^0	0^0-70^0	
Extension	60^0-0^0	65^0-0^0	65^0-0^0	70^0-0^0	
Abduction	0^0-35^0	0^0-40^0	0^0-30^0	0-35^0	
Adduction	35^0-0^0	40^0-0^0	30^0-0^0	35^0-0^0	
Knee					
Flexion	0^0-105^0	0^0-110^0	0^0-120^0	0^0-125^0	
Extension	105^0-0^0	110^0-0^0	120^0-0^0	125^0-0^0	
Ankle					
Plantar Flexion	NA	NA	00-450	0-450	Cannot perform on left side
Doris Flexion	NA	NA	0-150	0-150	Cannot perform on left side
Inversion	NA	NA	0-300	0-300	Cannot perform on left side
Eversion	NA	NA	0-200	0-200	Cannot perform on left side

Physiotherapy Intervention

Short term goals

1. To prevent respiratory complications
2. To reduce pain
3. To prevent oedema
4. To increase bed mobility
5. To prevent stiffness

Long term goals

1. To stand on his own
2. To perform his daily activities
3. To make him independent
4. To prevent re-injury

Phase 1: (0-6 weeks) (NWB)
Initially, the patient was taught finger movement to the affected lower limb. also the patient was advised spirometry to improve the respiratory function due to prolonged bed rest.Limb elevationwas given in order to reduce swelling. Passiverange of motion (PROM) for the unaffected limbs was given. To minimize the risk of developing pressure sores positioning was taught. Pelvic bridging was taught to the patient to reduce the pressure on the back and help the patient with his toileting activities and core strengthening will include static abdominals, unilateral bridging. Strengthening of upper limb, Non weight bearing with walker will be initiated with assistance.

Phase 2: (7- 9 weeks) (PWB)
Following the phase 1 exercise programme, the exercises were continued with added resistance with progressions. After the removal of cast, strengthening to the affected lower limb will be initiated, weight bearing will be initiated to the affected leg for up to 10-50% weight bearing.

Phase 3: (9-12 weeks) (TWB)
50-100% weight bearing will be taught in phase 3 where the progression will be taught with the help of axillary crutches followed by full weight bearing. After the full weight bearing is achieved stair climbing and other complex activities are taught and challenged followed return to his daily activities.

DISCUSSION

In this case report we had a farmer with tendoachilles cut for whom a soft tissue reconstruction surgery was done, the rehabilitation objectives was formulated with regards to the surgery done and his nature of work, starting with walker to complete weight bearing with and without walking aid. All the exercises were done in three sessions of 10 repetitions of each exercise in every session, with the help of rehabilitation program he was able to resume his ADLs independently. The acute Achilles tendon rupture was paired with ankle immobilization for 6 weeks mostly as surgical procedure

is performed. The typical recovery treatment involves rigid cast immobilization, normally for six weeks in a below-knee non-weight bearing rigid cast, accompanied by ankle joint mobilization and strength training. (4) A number of related studies were reviewed (Telang et al., 2020; Nikose et al., 2020; Phansopkar et al.,2020;). In this case, we delayed the weight bearing to 6 weeks to promote healing.

Limitation: Weight bearing was delayed to promote healing of the wound and to promote rupture of the wound.

CONCLUSION

Patient showed a great co-operation during the intervention period and now the subject is able to perform his daily activities. The outcome measures of physical therapy intervention progressed him with return to his normal functional tasks.

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