



OUTCOMES OF TENDO ACHILLES RECONSTRUCTION WITH GASTROCNEMIUS FASCIAL TURNDOWN FLAP IN A TERTIARY CARE HOSPITAL

ORTHOPAEDICS

Soham Mandal*

Consultant Orthopaedic Surgeon, Department of Orthopaedic Surgery, G D Hospital & Diabetes Institute, Kolkata, India. *Corresponding Author

ABSTRACT

BACKGROUND - The Achilles tendon is one of the most commonly injured tendons of the lower limb. However, a remarkable number of patients are still neglected without any proper treatment. Our current study was conducted to demonstrate the results obtained from gastrocnemius fascial turndown flap reconstruction for chronic, neglected injuries of the Achilles Tendon. **Study Design** – Prospective, interventional, institution based, conducted at G D Hospital & Diabetes Institute, Kolkata, India. **METHOD** – Our study includes 10 patients operated over a period of 6 months; all patients were reconstructed with gastrocnemius fascial turndown flap and followed up for one year without any noteworthy complications. **CONCLUSION** – Reconstruction of chronic injuries of the Achilles Tendon with gastrocnemius fascial turndown flap gives excellent functional outcomes and therefore remains the standard technique at our institute.

KEYWORDS

Chronic Tendo Achilles Injury, Gastrocnemius Fascial Turndown flap, Single limb Heel Rise Test.

INTRODUCTION

The Achilles tendon, the largest and strongest tendon in the human body, is nevertheless one of the most commonly injured tendons that undergoes a complete subcutaneous tear. Even though Achilles tendon ruptures are frequent, up to 25% of acute injuries are misdiagnosed, and present as chronic injuries.[1] A chronic rupture can be defined as a rupture with a delay in diagnosis or treatment for more than 6 weeks.[2] Usually, small gaps (less than or equal to 2 cm) of chronic Achilles tendon rupture can be directly closed in an end-to-end manner. However, there is still no standard treatment for chronic Achilles tendon rupture with large gaps. The management of chronic Achilles tendon tears is technically more demanding than the primary repair of acute ruptures, because the tendon ends get retracted or attenuated and the status of the surrounding soft tissues makes primary repair increasingly more difficult. Primary repair is not generally possible, because of the increased gap between the two tendon ends. Different surgical techniques have been described to address this problem. Traditional open surgical options include V-Y plasty,[3] flap tissue turn down,[3] local tendon transfer and autologous reconstruction with hamstring tendon. The main concerns of these techniques include complications like wound dehiscence and infections. A prospective study to show the efficacy of gastrocnemius fascial turndown flap reconstruction on patients with chronic Achilles tendon rupture was carried out in our department.

METHODOLOGY:

This prospective, interventional, institution based study was conducted at the Department of Orthopaedic Surgery, G D Hospital & Diabetes Institute, Kolkata, India. Study period was 6 months, (October 2019 to March 2020). Patients in the age group of 20-60 years of age, attending the out patient department of Orthopaedic Surgery with chronic Achilles tendon injury were included in the study. Inclusion criteria were - history of trauma of Achilles tendon; secondly, the interval from injury to surgery more than 6 weeks; thirdly, patients were unable to perform a single - limb heel rise;[4] fourthly, MRI confirmed the final clinical diagnosis. Patients with open injuries, history of local infection, associated fractures or neurovascular injuries, and patients non compliant to follow up were excluded from the study. The patient was placed prone on the operating table and pneumatic thigh tourniquet was applied. A posterolateral or posteromedial incision was made over the position of the injured Achilles tendon. The Achilles tendon was adequately exposed. The surrounding tissue and distal tendon stumps were carefully dissected. For the gastrocnemius fascial turndown flap, the gap between tendon stumps were measured; (figure 1b) the length of the turndown flap was then determined as 2 cm in addition to the length of gap. (figure 1c) The ankle was kept in plantar flexion (up to 20°) for 4–6 weeks using a below-knee cast; then the cast angle in plantar flexion was gradually decreased over weeks. Partial weight bearing and crutch ambulation was allowed 6 weeks postoperatively, with ankle-foot boot. At 12 weeks postoperatively, patients were allowed to participate in routine activities without restrictions. Patients were advised to perform

running and jumping at 1 year postoperatively.

RESULTS

Of the 10 patients operated, 7 were male and 3 were female. All patients were discharged the next day and were called for follow up at 1, 3 and 6 weeks, and 3 monthly intervals thereafter till 1 year. One patient had superficial wound dehiscence, which responded well to oral antibiotics and dressings. All patients were able to perform single limb heel rise and returned to their pre-injury level of activities.

Table -1, General Details

SERIAL NO	AGE	SEX	TIME INTERVAL BETWEEN INJURY AND SURGERY	COMPLICATIONS
1	23	M	6 WEEKS	NIL
2	27	M	8 WEEKS	NIL
3	41	M	10 WEEKS	WOUND DEHISCENCE
4	25	M	6 WEEKS	NIL
5	51	M	3 MONTHS	NIL
6	27	M	10 WEEKS	NIL
7	21	M	7 WEEKS	NIL
8	47	F	4 MONTHS	NIL
9	39	F	6 WEEKS	NIL
10	28	F	8 WEEKS	NIL

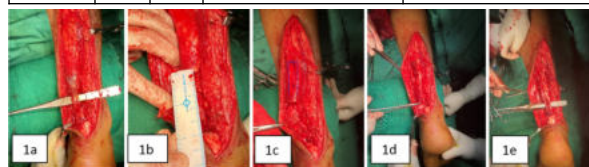


Figure 1a – chronic Achilles tendon rupture showing attenuated part, 1b – measuring the gap, 1c – planning of turndown flap, 1d – after turndown, 1e – after suturing of turndown flap.

CONCLUSION

The maximum gap treated in our study with this technique was 10 cm, and the patient had achieved satisfactory ankle function. We, therefore conclude that the Gastrocnemius fascial turndown flap is a useful technique in the reconstruction of chronic Achilles tendon ruptures with gaps as long as 10 cm and remains the procedure of choice at our institute.

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