The Use of Fascia Lata Graft in the Repair of neglected Patellar Tendon Tear: A Case Report

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ABSTRACT

Background: Neglected Patellar tendon injuries are rare. It may pose serious management challenge especially when the patellar tendon remnants have become atretic. The aim is to report the use of fascia lata graft in the treatment of neglected patellar tendon tear in a 20 year old man. Method: A case of a 20-year old man who had repair of a 9-month old right patellar tendon tear using fascia lata graft which was made into a tendon-like cord is presented. Result: A 20-year old man presented with a 9-month history of inability to extend his right knee joint and difficulty clearing his right foot from the ground while walking, following an open injury to the anterior right knee. He had right quadriceps muscle wasting and walked with a limp. The cruciate and collateral ligaments were clinically intact. Passive flexion and extension of the right knee was normal but straight-leg raising and active extension of the right knee were not possible. Lateral X-ray of the right knee showed normal distal femur and proximal tibia with a high riding patellar. The Insall-Salvatti ratio was > 1.2. He was treated using fascia lata graft made into a tendon-like cord and knee function was restored post operatively. Fascia lata graft is an option for repair of an old, neglected patellar tendon tear.

Keywords: Fascia lata, Graft, Repair, Patellar tendon.

INTRODUCTION

Neglected tear of the patellar tendon is a rare condition[1,2,3,4]. However, when it occurs, it may pose a management problem to the orthopaedist. Surgical management of these neglected injuries is usually difficult and the outcomes less favourable because of retraction, adhesion, atrophy of the quadriceps muscle and proximal patellar migration[1,4,5].
Several techniques of repair have also been described to be useful[1-5].

We report a case in which fascia lata graft was constituted into a tendon-like cord and used for the repair of an old, neglected patellar tendon tear, without pre-operative or intra-operative hardware traction or augmentation of graft by hardware.

CASE REPORT

A 20-year old man presented with a 9-month history of inability to extend his right knee joint and difficulty clearing his right foot from the ground while walking. This followed an open injury to the anterior knee**.** He was treated by the Traditional Bone Setters until the wound healed.

Upon examination, he had a scar over the anterior aspect of the right knee. There was wasting of the right quadriceps muscle and he walked with an abnormal gait. The cruciates and collateral ligaments were clinically intact. Passive flexion and extension of the right knee was normal with range of movement of 0^0 to 150^0. Straight-leg raising and active extension of the right knee was not possible.

Lateral X-ray of the right knee showed normal distal femur and proximal tibia with a high riding patellar (Fig.1). The Insall-Salvatti ratio was >1.2. MRI was not done due to logistics reasons but was highly desirable. Diagnosis was based on clinical and X-ray assessment.

Surgery was through the standard anterior approach to the knee. Intra operative finding was fibrous and atretic remnants of the tendon. The proximal and distal portions of the tendon remnants measured 1cm and 1.5cm respectively. The patellar was high riding, but easily maneuvered downwards to its normal position. The atretic tendon remnants were defined after clearing them of surrounding fibrous tissues. A 3cm x 16cm fascia lata graft was harvested via a lateral thigh incision, doubled on itself and sutured together in a continuous interrupted method into a strong tendon-like cord using vicry 2 suture material (Fig. 2). A 4.5mm drill bit was used to drill transversely through the tibial tuberosity site of insertion of the torn patellar tendon. The same transverse drilling was repeated at the distal pole of the patellar.

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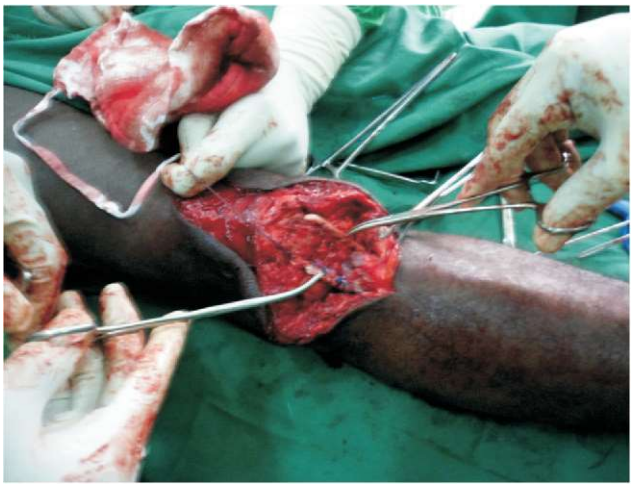
Figure 1: Lateral Right Knee X-ray

Figure 2: Tendon-like cord of fascia lata

Figure 3: Fascia lata graft in place shortly before closure



The prepared graft was formed into a circlage by passing it through the drilled holes from medial to lateral aspect of the tibial tuberosity hole then, through the lateral and medial aspects of the patellar hole. It was sutured to itself medially using vicryl 2, while distal tension was maintained on the patellar to ensure its normal position compared to the left side (Fig. 3). Quadricepsplasty was not required as the quadriceps was stretched by the distal tension on the patellar to its normal position. The remnant patellar tendon tissue was reconstituted over the graft including the fat pad to protect it from the skin. A suction drain was inserted and the wound was closed. Theknee was supported in a plaster slab. This was changed to a right functional knee brace at 6weeks post operatively, and he was allowed self physiotherapy for range of movement (ROM) of the right knee as tolerated. Five months post-operatively, his ROM of right knee joint was 0^0-130^0. The right patellar was no more high riding and straight-leg-raising was 85^0. Active knee extension was possible. He now ambulates properly, clearing the right foot from the ground.

DISCUSSION

Neglected patellar tendon injury is a rare condition and much of the available literature was case reports1-5. Its incidence is unknown[5]. Bek[1] mentioned that patellar tendon tear can be missed in a group of patients while some authors[1,2,4] have noted that even with proper physical examination, patellar tendon tear can be easily missed in patients with multi-trauma, obesity, and knee haemathrosis. This is the reason for neglected injuries in some patients. The index patient was however, not diagnosed in a hospital as he had unorthodox treatment with Traditional Bone Setters.

Several methods[1-4], have been described to bring patellar down to its normal position during patellar tendon reconstruction but none of these was required in the index patient as the patellar could manually be brought down to its normal position. This is also reported by Mittal *et al.*[5]. Methods described to bring down the patellar include, pre-operative hardware traction[4], intra-operative hardware traction[1,2,3] the use of llizarov[3] and the use of External fixators[4].

Hamstring tendons are commonly used as graft[1,2], or used to augment repair[1]. Eckeret *et al.*[2] opined that hamstring tendons are stronger than fascial strips. However in our patient, fascia lata strip was constituted into a tendon-like cord

using vicry 2 which makes it stronger. Other authors[4], also used facial strip in their repair. We report our experience with the use of fascia lata strip made into a tendon-like cord for reconstruction without supporting hardware like high gauge wire[2], Steinmann's pin[2], and External fixators[4], or Illizarov[3].

It should in any case be noted that, repair in our patient was supported with the application of a plaster back-slab which was followed by a full leg cast in three weeks to prevent knee flexion by the patient which can disrupt the construct. Knee flexion was allowed only after six weeks when repair and healing was certain. Thereafter, self physiotherapy was commenced and stepped up gradually as the patient tolerated. Transversely drilled holes ensured stability of the patellar in all planes after the reconstruction. At five months post-operatively, active right knee extension and straight-leg raising returned and patient was able to clear his foot from the ground and walk without a limp.

Long follow-up is required in this patient since the graft which was taken away from its native site could progressively thin down overtime and negatively affect quadriceps function. However, incorporation of the graft into remnant patellar tendon tissues is expected as early results have shown.

CONCLUSION

Fascia lata graft is an option for neglected patellar tendon tear repair particularly when there are contraindications to Hamstrings tendon harvest or unavailability of tendon stripper.

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