Patellar tendon re-rupture on the opposite end of the previous site of surgical repair

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ABSTRACT

We describe a rare case of a patellar tendon “re‑rupture” at the opposite end of a previous proximal tendon repair. A 32-year-old male with a history of surgically repaired right proximal patellar tendon rupture presented with an acute non-traumatic right knee pain and instability during sports. Magnetic resonance imaging confirmed a complete rupture of his distal patellar tendon at the tibial tuberosity. The patellar tendon was repaired using two 5.5 mm BioCorkscrews (Arthrex) inserted into the tibial tuberosity; the tendon was stitched with the No. 2 fiberwires using Krackow technique. As the patellar tendon was degenerative, the repair was augmented with a semitendinosus tendon harvested using an open tendon stripper, leaving the distal attachment intact. At 2.6 years followup he had mild anterior knee pain, range of motion 0‑130° and was able to squat. MRI scan done at followup revealed good healing of repaired patellar tendon.

Key words: Patella, patellar tendon, reconstruction, re‑rupture

MeSH terms: Patella, reconstructive surgical procedures, rupture, tendon injuries

INTRODUCTION

Patellar tendon ruptures are uncommon.1 2 The rupture site is usually proximal1 or mid-tendon. Surgical repair to restore the extensor mechanism is the treatment of choice for complete ruptures. Patellar tendon re-rupture are even rarer. If it occurs, the re-rupture usually occurs at the site of surgical repair. We describe a case of patellar tendon re-rupture at the opposite end of a previous proximal tendon repair, which is at the tibial tuberosity insertion. This appears to be the first of such a case reported to the best of our knowledge.

CASE REPORT

A 32-year-old male presented with an acute nontraumatic right knee pain and “giving way” while playing a game of captain’s ball. He heard a “pop” sound and was unable to weight-bear after the incident. He had a previous history of right proximal patellar tendon rupture sustained from a fall during a soccer match 2 years prior to this incident. He underwent successful open surgical repair at another hospital. He attended postoperative physiotherapy for only 2–3 months before defaulting due to work commitments. His patellar tendon healed and he was able to return to light jogging post recovery but did not engage in any high impact sports. He did not experience any aches or pain over the right patellar tendon region prior to this new injury.

Clinical examination revealed a hematoma over the tibial tuberosity with loss of active knee extension. His patella was superiorly displaced when compared to the contralateral lower limb, and a gap could be palpated at the inferior pole. X-ray of the right knee revealed patella alta consistent with patellar tendon rupture [Figure 1]. Interestingly, a magnetic resonance imaging (MRI) scan confirmed a complete rupture of the patellar tendon at the distal attachment to the tibial tuberosity [Figure 2] instead of the previous proximal repair site. He had no known history of systemic diseases or steroid use that could predispose him to a higher risk of
patellar tendon re-rupture. However, he was overweight with a high body mass index of 31.2.

Intraoperative findings revealed complete rupture of the right patellar tendon from the tibial tuberosity. The ruptured tendon was severely frayed and degenerative. The medial and lateral retinacula were completely ruptured as well. Dense adhesions from the previous surgical repair of the proximal end of the tendon were found. Mersilene polyester tape was used to defunction the patellar tendon repair (previously) was ruptured near the distal end but was intact proximally [Figure 3].

The patellar tendon was repaired using two 5.5 mm BioCorkscrews (Arthrex) inserted into the tibial tuberosity; the tendon was stitched with the No. 2 fiberwires using Krackow technique. As the patellar tendon was degenerative, the repair was augmented with a semitendinosus tendon harvested using an open tendon stripper, leaving the distal attachment intact [Figure 4].

The tendon was passed laterally through a transverse bone tunnel made across the patella and brought back down towards the tibial tuberosity. The free end of the tendon was secured to the sutures from the lateral BioCorkscrew. A 5.5 mm biotenodesis screw was also inserted into the patellar tunnel to secure the semitendinosus tendon to improve tendon-to-bone healing and prevent attrition and rupture caused by tendon motion, in the tunnel during knee movements. The ruptured retinacula were repaired with remnant fiber wire sutures.

Postoperatively, the patient was instructed to use non-weight bearing crutches with a locked knee brace kept at full extension for 6 weeks. There was a small dehiscence of his surgical wound postoperatively which eventually healed after regular dressing and empirical antibiotics. He was started on progressive range of motion exercise after 6 weeks and underwent several months of rehabilitation. At 2.6 years followup, he reported only mild anterior knee pain with exertion. He has regained full range of knee motion from 0° to 130° and was able to squat. He started swimming activities but decided not to return to...
The sudden loss of protection resulted in an acute tear at the weakened distal patellar tendon. The severely frayed distal tendon at the rupture site and the fresh ends of the ruptured Mersilene tape supports this hypothesis. Other factors that could have contributed to the re-rupture included the duration and intensity of postoperative rehabilitation, an intense sporting environment post surgery, poor compliance to postoperative rehabilitation or essentially a combination of all the factors.

To summarize, we presented the possible treatment with its followup of a case of patellar tendon re-rupture on the opposite end of previous surgical repair site.

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**Conflicts of interest**
There are no conflicts of interest.

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