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[Effectiveness of patellar tendon reconstruction with LARS artificial ligament for old patellar tendon rupture].

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Abstract in English, Chinese

OBJECTIVE: To explore the effectiveness of patellar tendon reconstruction by using LARS artificial ligament in treatment of old patellar tendon rupture.

METHODS: A clinical data of 12 patients with old patellar ligament ruptures, who met the inclusive criteria and reconstructed with LARS artificial ligament between December 2011 and December 2017, was retrospectively analyzed. There were 8 males and 4 females with an average age of 33.5 years (range, 18-55 years). The cause of injury included traffic accident injury in 4 cases, sport injury in 5 cases, and violent injury in 3 cases. There were 5 cases in the left knee and 7 cases in the right knee. The disease duration was 2-12 weeks (mean, 2.5 weeks). The preoperative Lysholm score and Kujala score were 43.2 ± 3.2 and 43.9 ± 2.6 , respectively. The knee range of motion was $(106.5 \pm 14.7)^\circ$. The thigh circumference which was measured at 10 cm above the upper end of the patella was (40.92 ± 1.93) cm. There were 4 cases of patellar ligament body rupture, 1 case of patella distal pole rupture, and 7 cases of tibial tuberosity attachment rupture. Preoperative Caton-Deschamps index was 1.47 ± 0.13 .

RESULTS: All patients were followed up 12-30 months (mean, 20.5 months). All incisions healed by first intention. And no complication such as infection, recurrent rupture, and neurovascular injury occurred. At 1 year after operation, the knee range of motion was $(131.0 \pm 10.2)^\circ$, Lysholm score was 87.4 ± 2.4 , Kujala score was 88.3 ± 4.8 , the thigh circumference which was measured at 10 cm above the upper end of the patella was (42.58 ± 1.93) cm; all showing significant differences when compared with preoperative values ($P < 0.05$). The effectiveness results were excellent in 9 cases and good in 3 cases according to the Insall evaluation criteria. The Caton-Deschamps index was 1.09 ± 0.11 , which was significantly lower than preoperative one ($t = 8.155$, $P = 0.000$).

CONCLUSION: Patellar tendon reconstruction with LARS artificial ligament is an effective method for the old patellar ligament rupture, which can effectively repair the knee extension device and restore knee function.