

ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

КАФЕДРА ФІЗИЧНОЇ РЕАБІЛІТАЦІЇ ТА СПОРТИВНОЇ МЕДИЦИНИ  
З КУРСОМ ФІЗИЧНОГО ВИХОВАННЯ ТА ЗДОРОВ'Я

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*Zub K.O.*

**ACHILLES TENDON RUPTURE: A REHABILITATION CLINICAL  
CASE STUDY**

Department of physical rehabilitation and sport medicine  
with course of physical education and health  
Kharkiv national medical university  
Supervisor: Lapko S.V.

Achilles tendon rupture is known to be the toughest tendon in human body, however one of the most vulnerable ones. The rupture could happen due to sudden load on the ankle.

A 34-year-old male patient presented to the trauma department with complete Achilles rupture of the right ankle 3 months ago. The patient had undergone surgical restoration of the tendon integrity followed by a rehabilitation course. Plaster cast was put for 6 weeks.

3 days after the surgery therapeutic exercises were prescribed: isometric tension of the triceps tibia with an attempt to simultaneous plantar flexion of the foot and extension of the knee joint. Such exercises were repeated for 10 minutes 9-12 times a day for 6 weeks. After the plaster cast is removed postsurgical rehabilitation involved full axial load, increased mobilization of the limb, and the beginning of stretching exercises. From the 6<sup>th</sup> till 9<sup>th</sup> weeks of postsurgical period the patient used crutches, during the following 3 weeks the patient was allowed to wear usual shoes with heel cuff placed under the operated heel.

Beginning from the 6<sup>th</sup> week the patient daily performed full plantar flexion (at least 6 times a day for 15 minutes) while sitting on the edge of a couch. Plantar flexion with resistance was performed from the 8<sup>th</sup> week of rehabilitation period (the patient performed plantar flexion while his knee-straightened leg lied on the couch. Additionally, the patient trained on an exercise bike from the 6<sup>th</sup> week (3 times a week for 20 minutes). “Back-to-front” walking on a treadmill (1,5 km per hour) was begun on the 10<sup>th</sup> week after surgery (3 times a week for 20 minutes). Step-up exercises (10 cm high with a gradual increase up to 20 cm) were conducted 3 times a week for 20 minutes from the 9<sup>th</sup> till 12<sup>th</sup> week. During the period from the 12<sup>th</sup> till



20<sup>th</sup> week rehabilitation procedures aimed to increase the strength of plantar flexion: step-down exercises (from 10 to 20 cm) were performed daily for 10-20 minutes. Additionally, the patient daily conducted unilateral lifting on the toe at the edge of the step (10-20 times).

On the 20<sup>th</sup> week of rehabilitation period the isokinetic testing of plantar flexion and dorsiflexion of the operated joint was compared with the contralateral limb. The isokinetic assessment constituted to be 88% of the normal level. Such result contributes to high efficiency of conducted rehabilitation procedures. The patient further continues to perform exercises aimed to increase of amplitude and freedom movement as well as strength and endurance of muscles involved into plantar flexion and dorsiflexion.

Therefore, postsurgical rehabilitation of Achilles tendon rupture was conducted during 20 weeks. The course included stretching exercises plantar flexion, “back-to-front” walking on a treadmill, step-up exercises, step-down exercises as well as unilateral lifting on the toe at the edge of the step. As a result, 88% of normal function was restored. The patient continues further rehabilitation.