

INJURIES OF THE HAMSTRINGS

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The hamstrings term includes three muscles: semitendinosus, semimembranosus and biceps femoris. The treatment the injuries of the hamstrings will be different in relation to the amount of injured tissue, the muscle type, the hematoma entity and its localization.

Rest, ice, compression, elevation and crutches protected deambulation remain the principles hinge in immediate post traumatic treatment. Subsequently the patient will begin a progressive recovery program in order to improve range of motion (ROM), muscular strength and endurance, flexibility, coordination and sports specific abilities. Especially eccentric strength training program seems to reduce recovery period and symptoms during sport performance.

ROM recovery will be active and gradual and will be associated with a strength training program according to pain symptoms.

Modalities such as Laser therapy and criotherapy will be added precociously, hyperthermia once exceeded the acute phase of the trauma and, eventually, extracorporeal shock waves in order to improve tendon's flexibility during the execution of late stretching exercises.

Massage is administered only proximally and distally to the lesion site.

Aerobic activity is very important and can be inserted early; in fact a slow running program on a tread mill or soft grounds, if it does not cause pain, is allowed (2).

An accurate kinesiological evaluation is indispensable in order to exclude the presence of articular limitations of the proximal tibio-peroneal joint or the sacro-iliac joint and in case of limitation, have to be solved.

An isokinetic test, accompanied to a full clinical evaluation (a complete recovery of ROM, active painless bending) allows to begin the recovery phase on the rehabilitation field, when flexors muscular strength of the injured limb reaches a value up to 80% regarding the contra lateral limb.

Progressively more complex activities will be gradually tested such as jumps and "kicking the ball" exercises, peak torque requiring activities, coordination and high flexibility requiring exercises, all indispensable for a complete recovery and return to sport. Recovery time may vary in relation to the entity of lesion and its localization. In particular a longer time of recovery must be scheduled for a II grade lesions of proximal third of biceps femoris which usually requires a recovery period longer than 2 months and statistically causes the higher amount of relapses.

The most frequent complication of hamstrings lesions is represented by fibrosis that often appears after a long period of immobilization.

A modern approach to the treatment of the muscular lesions should aim at the biological repair of the tissue. Muscular regeneration in fact occurs only during early repair phases while subsequently regeneration is contrasted from fibrous tissue production.

In order to aid and extend the phase of muscular regeneration, several growth factors have been used (VEGF, BFGF, IGF-1, NGF) and they seem, at least in the models experiences, to effectively promoting muscular regeneration and recovery of muscular strength, thanks to their tissue regenerating capability and to their fibrous tissue inhibiting activity.

In our experience, return to competition is allowed after 20 ± 7 days for I grade lesions, after 36 ± 15 days for II grade lesions and after 45 ± 14 days for III grade lesions.

References

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