Treatment of calf pain in runners

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Exercise therapy

An individualised rehabilitation program should be based on the information gathered from the objective assessment. The aim of rehabilitation is to improve the load capacity of the muscles in the calf complex and the kinetic chain.

Calf complex

Straight leg and bent leg calf raises can be used to strengthen the calf complex alongside seated calf raises, calf raises on a leg press and soleus squats. The calf complex is exposed to high loads when running, therefore it needs to be exposed to high loads during rehabilitation. Begin strengthening with 15RM progressing to 8-12RM and use the patients' symptoms to guide loading progression.

Local muscles

The ankle invertors and evertors can be strengthened using resistance bands. Patients with calf pain may present with toe flexor weakness. Clinically patients are often unable to maintain an isometric contraction before the foot cramps. A study by Goldman et al. (2012) found that a toe flexor strengthening programme consisting of 3 second heavy isometrics improved jump performance. This study highlights the importance of foot and ankle strength and its role in performance.

Kinetic chain

Strengthening of the kinetic chain can help to reduce the load on the calf complex during running. The quadriceps and gluteal muscles assist in load absorption and should be strengthened if any weakness is identified during the objective assessment.

Neural mobility

Patients with reduced neural mobility may require a combination of spinal mobility exercises, slider/glider exercises and manual therapy. This should be included in the initial stages of rehabilitation, as it may be the main cause for reduced muscle recruitment. Neural mobility exercises should be performed for short periods, often during the day, to avoid lasting neural irritation. Any irritation of symptoms should settle within 15-20 mins of performing exercises.

Training loads

During the subjective assessment identify the distance that the patient can run before onset of symptoms. Use this distance for the patients longest run and gradually increase the distance as symptoms allow. Some patients may only experience symptoms when running at speed. For these patients start by reducing the running intensity whilst maintaining the running volume. Short interval sessions can then be used to gradually increase running intensity as load tolerance improves. Plan training to include a recovery day before a high intensity run to minimise the influence of fatigue.

Patients with calf pain can often manage some volume of running. Only remove running in patients with highly irritable calf pain. A strength and conditioning programme can be used to increase load capacity before gradually reintroducing running.

Gait retraining

Longer contact time, large vertical oscillation, rear foot eversion and over striding increase the peak demands on the calf complex. Increasing step rate and switching to a mid-foot strike will reduce the peak demands on the calf complex.

Links associated with this episode:

Twitter - @Tomgoom
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Articles associated with this episode:

Goldman et al. (2012). The potential of toe flexor muscle to enhance performance

Running physio – Building strength to prevent calf pain when running