Contribution of isokinetic evaluation and rehabilitation in patients with patellofemoral syndrome

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Introduction.– Isokinetic dynamometers are widely used for joint and muscle conditions. Many teams have used this technique to assess muscle balance of the knee and also to establish rehabilitation protocols according to underlying disease. We were interested in the particular case of patellofemoral syndrome. This is a common clinical syndrome, during which the hypothesis of a possible muscle imbalance is growing steadily. We proposed to study at first knee muscle balance in subjects with patellofemoral syndrome, and then in a second time, to compare the strength of the muscular balance of the knee before and after isokinetic rehabilitation.

Patients and methods.– This was a retrospective study including 36 patients followed at the outpatient clinic for patellofemoral syndrome. All patients were assessed using a Biodex dynamometer at speeds of 60°, 120° and 180°/s. Twenty of these 36 patients underwent isokinetic knee rehabilitation suitable for evaluation.

Results.– A deficit in hamstring muscle strength was noted in 26 patients. The deficit of the quadriceps muscle was noted in 17 patients. Muscle imbalance was noted in 31 patients: in favor of the quadriceps in 20 patients, and for hamstrings in 11 patients. Among 20 patients who received isokinetic rehabilitation, muscle strength gain, of both quadriceps and hamstring, was noted in all cases. A statistically significant correction in the ratio agonist/antagonist was observed in 77.77% of patients.

Conclusion.– The patellofemoral syndrome is multifactorial. Muscular factors: weakness, retractions and/or muscle imbalance are essential. Isokinetic protocols are a useful complement to conventional methods of assessment and rehabilitation used.