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Rehabilitation Program on Patient With Meniscus Degeneration and 1st Grade Chondropathy: Case Study

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Abstract: The modern way of life, accompanied by a sedentary lifestyle and increased body weight, leads in most cases to musculoskeletal injuries and situations that make life difficult for people. Meniscus degeneration mainly occurs in the elderly as they lose their elasticity over the years, however it can also occur at younger ages due to repetitive loads on the knees that significantly strain the knee joint. The meniscus is an elastic cartilage between the tibia and the femur. When the knee is bent or extended, the tibia and femur meet, so the meniscus helps reduce friction during movement. It also absorbs vibrations and protects the knee from vertical loads. Injuries to the articular cartilage are very common with meniscus injury. The present study concerns an obese middle-aged man who experienced degeneration in his knee joint. The aim of this study was to study the effectiveness of a rehabilitation intervention program through conservative treatment in a 43-year-old man with degeneration in the posterior horn of the inner meniscus and first-degree chondropathy in the middle femoral compartment.

Key words: knee chondropathy, meniscus, rehabilitation programme

1. Import

Meniscus are menoidal crescent-shaped cartilage discs that interpose between the articular surfaces of the femoral condyle and the tibial glenoid cavity in the knee joint (Wooltorton, 2002). Each knee joint has two meniscus, the lateral and the medial, the medial meniscus has the shape of a crescent and is larger compared to the lateral, its anterior end adheres to the anterior interglinal fossa in front of the outgrowth of the anterior cruciate ligament. The semi-muscular ligament is connected to the posterior part of the medial meniscus and tends to pull the meniscus back and out during flexion. This is why the mobility in the medial is limited and suffers most ruptures (Zedde, Mela, Del Prete, Masia, & Manunta, 2015). The role of the meniscus is to distribute the charges and n increase the articular contact surface of the knee, to absorb vibrations, and in this way to protect the articular cartilage. They also help stabilize the joint by deepening the tibial glenes and facilitate control in some rotational movements as well as help lubricate the articular surfaces (Galliet, 1983; Lutz & Warren, 1995; Prentice, 2007). The most common condition of injury to the medial meniscus is when an internal rotation of the thigh is performed in relation to the antbia and the leg is stable on the ground and knee in a small flexion with valgusity (Rockborn &Messner, 2000). In this research we will deal with the degenerative meniscus ruptures that are common to occur in elderly people. About 60% of elderly people have some kind of degeneration in their meniscus, this is because as the years go by

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the meniscus lose their elastic properties, there is a decrease in the perfusion of the meniscus Usually they start from the inner circumference to the outside and affect the cartilage by showing chondropathy.

2. Treatment

Most often the treatment is done conservatively with immobilization, cold patches, administration of anti-inflammatory drugs, physiotherapy and after reducing edema and pain, a conservative exercise program is followed. High-level athletes are those who prefer surgical treatment for their faster return to the playing fields (Schmidt M. J, Adams S. L., 2009).

3. Method

3.1 Specimen

The sample of the research was a 43-year-old trainee man who had degeneration in the posterior horn of the medial meniscus and chondropathy of the first degree in the medial femoral condyle. The patient in the present condition experienced loss of the extension of the right knee and painful flexion.

4. Intervention Programme

The aim of the rehabilitation program that was implemented was the recovery of the range of motion, the muscle strengthening of the muscles that act in the knee joint and finally the improvement of balance — proprioctory so that our trainee can return to his daily activities without discomfort.

The program lasted 10 weeks and the patient performed a total of three sessions of forty minutes per week. The types of exercises selected for the first two weeks with the aim of regaining the range of motion were the following:

1) Mobility exercises of the knee joint
2) Stretching exercises for the muscles that extend and bend the knee joint
3) Isometric Exercises for the muscles that extend and bend the knee joint

The types of exercises that followed for the next three weeks until the end of the intervention program were the following:

1) Quadriceps femilia strength exercises
2) Exercises to strengthen the hamstring
3) Progressive increase of burden with exercises from open to closed kinetic chain
4) Neuromuscular control exercises to recover proprioception

Exercise chart:

WARM-UP: Stationary foot bike from the supine position 3X10"

1) Passive distension of the flexor and extensor muscles of the knee (3X8")
2) Isometric exercises for the quadriceps femur (3X8")
3) Slip movements on the wall passively and energetically (3X8)

MAIN PART: Strength training exercises

1) From the supine position, the pelvis raises with both feet for the beginning and steadily increase the degree of difficulty (with one foot pelvis elevations and then with the feet on the medicine ball (3×12);

2) With the Medicine ball resting on the wall we perform semi-seats and in the long run we descend to the parallel (3×12);
3) From an upright position we perform split squat with the help of medicine ball (3×8);
4) With the help of the bench or a chair performs Pistols with knee flexion up to 120o (3×8);
5) From an upright position and supported on the wall performs monopodaksaks (3×10);
6) From an upright position performs with the resistance of the hip flexion rubber (3×10);
7) From a prone position performs with the resistance of the rubber bend the knee (3×10).

In the final phase of rehabilitation, the trainee also performs exercises to improve proprioception which are the following:

1) Monopod support on an unstable surface (cushion) (3×8");
2) Lateral displacement with jump from unstable to stable surface (3×10);
3) Lateral displacement with jump from a constant to an unstable surface (3×10);
4) Monopod semi-seating on an unstable surface (3×6).

5. Treatment

Stretching exercises for 5'.

6. Results

The conservative treatment of this case led to the loss of painful symptoms, which existed due to the degeneration of the meniscus and cartilage, to its full reintegration into daily activities and exercise programs. However, in the first weeks at the end of each session it was necessary to place ice on the joint.

7. Discussion & Conclusions

The rehabilitation program was effective as the patient could return to his activity again after 10 weeks. The exercises helped him not to have pain and swelling and to be able to perform all movements without pain and restriction. The isometric exercises as well as the dinastal exercises were instructed to be performed daily as they were particularly effective. In conclusion, the maintenance treatment of this case led to the loss of painful symptoms, which existed due to the degeneration of the meniscus and cartilage, to its full reintegration into daily activities and exercise programs.

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