

Rehabilitation before reimplantation in degenerative hip arthritis-case report

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Dear Editor,

Dysplasia of the hip is the hip joint disorder that might proceed to degenerative diseases of joint in young adults, and if not treated, they may result in secondary osteoarthritis at a rate of 50% until the age of 50 (1).

The patient population in hip osteoarthritis that is developed secondarily to hip joint dysplasia is different from those in primer osteoarthritis. This pathology is usually observed in young adult women and leads to pain and functional limitations as a result of joint degeneration in early age (2).

Total hip arthroplasty (THA) is a successful surgical treatment method whose application is becoming widespread both in our country and in the world. It is used in solving the problems of the hip that are not corrected with medical treatments. However, it must be born in mind that the success of the THA depends on proper patient selection, correct preoperative planning, selecting the implant that is proper for the indication, and efficient rehabilitation applied in postoperative period (3).

Infection and thromboemboli in total hip arthroplasty are the most commonly feared two complications. The infection after surgery is a very serious problem. Painful and expensive infections are observed at a rate between 7% - 62%, limitation and mostly require the removal of the cement together with both components and cause serious morbidity (4).

The basic aim of the rehabilitation after THA is to increase the functional performance to the highest level, and ensuring that patients perform their daily activities, personal hygiene and self-care on their own. In this period, the most important physical disability that limits patients is the pain, the hip joint motion width being limited, and

the weakness in muscles. After THA, the rehabilitation consists of three basic parts, which are training, exercise, and functional mobility training. The success of the rehabilitation depends on the efforts of the team consisting of the orthopedist, physician, physiotherapists, and other relevant unit professionals (5).

55-year-old woman patient applied to our policlinic with the diagnosis of developmental hip dysplasia, and with the complaints like burning and paresthesia in her feet during nights. She was hospitalized at the Physical Medicine and Rehabilitation Service. THA surgery was applied to the left side hip joint of the patient in whom coxarthrosis due to developmental hip dysplasia developed by Orthopedics and Traumatology Department in 2012; and the same operation was applied to the right side in 2013. She received 5 more operations from left side, one of which was spacer change, due to chronic infection.

After the last operation, it was reported that the image of the soft tissue was not good, and the prosthesis was removed. The blood and bone mineral density of the patient was examined and the results were evaluated as being normal for her age, and rehabilitation program was started before re-implantation. The patient ambulated alone with walker, and stated that she did not have pain in her first evaluation.

The isokinetic concentric knee flexion and extension and hip adduction-abduction power measurements of the patient were performed with Biodex System 3 Pro isokinetic Power Dynamometer (Biodex System 3, Shirley, NY, United States).

The rehabilitation program applied is as follows;

- Isometric exercise training for the muscles around the hip and knee joints

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- Functional exercises
- Balance and coordination exercises
- Gait training strategies to optimize walking ability
- Choosing the right orthosis
- Informing the prevention of falls

According to the isokinetic evaluation at the end of the 30-session rehabilitation program, it is observed that there are important increases in the muscle power values. Patient exercised for at least 5 days per week, for 30 to 45 minutes. When the patient applied to us, she was performing her mobilization with walker; however, after the treatment, she was mobilized with single-tripode.

When patients with developmental hip dysplasia are not diagnosed because of being asymptomatic, they experience difficult health problems at further ages if they are neglected in their past or if they have not received adequate treatment. Coxarthrosis is indispensable in such patients at further ages, and the most frequent second reason of coxarthrosis at further ages is the acetabular dysplasia (6).

The treatment of osteoarthritis with total hip arthroplasty, which develops in the congenital hip dislocation, is a successful method despite technical difficulties and high complication risk. Proper surgery will ensure that the pain of such patients decreases and increases their life qualities (7).

Infections are among the most destructive complications of arthroplasty, and are the possible morbidity and portability reasons, which are rare, but difficult to treat. Nearly 12% of the total joint replacements have infections. 8% of these infections in old patients end up with mortality (8).

The case was sent to us for rehabilitation program before re-implantation depending on chronic infection after THP, and a clear recovery was observed in the functional status and muscle power values of the patients after 30-session rehabilitation program.

There are studies in the literature reporting that early intensive rehabilitation program fastened functional level, decrease the hospitalization duration and economic burdens (9). However, the number of the studies in which the effects of preoperative and postoperative rehabilitation programs on the infection status were examined is extremely limited.

On the last decade, rehabilitation practices after THP

have gained importance with the increasing demands on reduce hospital expenses and the hospitalization time. In order to discharge the patients after THP in terms of rehabilitation, they must perform the home exercise program in an independent manner. While patients care for the in-hospital rehabilitation programs in the early period, their participating decreases in the home exercise programs decrease when their limitations are over (10).

Different surgical methods used in THP require different rehabilitation approaches. Functional levels of patients increase with time and proper exercise programs, and their hospitalization time and economic burdens.

Further multi-centered prospective studies, in which objective methods will be used (like isokinetic evaluation, gait analyzes, electromyographic analyses, etc), are needed to reveal the acute and chronic effects of pre-post rehabilitation programmes in infection status after THP.

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