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**CLINICAL CASE: KINESIOTHERAPY IN THE EARLY POSTOPERATIVE STAGE
AFTER MINIMALLY INVASIVE SAME TIME BILATERAL
TOTAL HIP REPLACEMENT**

Aleksandar Ljubomirov Andreev, PhD

University of Russe „Angel Kanchev“,

Department of „Public Health and Social Activities“

E-mail: aandrev@uni-ruse.bg

***Abstract:** There are no literature to examine long-term for minimally invasive surgery for “same time bilateral total hip replacement”. This report describes opportunities of the physiotherapy 12 days after the surgery. The minimally invasive operation in combination with cement fixation of the implant allows the load on the joints, early after intervention. To determine the functional status of the patient was used scale of Harris (0-100 points).*

***Keywords:** physiotherapy, hip replacement*

***JEL:** I 1, I 12, I 18*

INTRODUCTION

The contemporary endoprosthetic total hip replacement (ETHR), developed and introduced into praxis first by the famous orthopaedic surgeons Austin Moore, Frederick Thompson, Sir George McKee, Sir John Charnley, Robert Judet, Maurice Müller and others in the 1950s and 60s, is one of the most successful surgical interventions that have been ever introduced into praxis. Eliminating of pain and restoring of function is possible to achieve in a great per cent of the patients who have and suffer from hip trauma. There is no other surgical procedure that offers such an effective a relief like the endoprosthetic total hip replacement (ETHR). Patients of age with neglected arthritic ailments and pseudarthrosis of the femoral neck, bound to the wheelchair are rare these days, (P. Tanchev, 2015).

Same time bilateral total hip replacement is not common in Bulgaria but it increases in popularity as the orthopaedics field develops. The method's effectiveness is still to be tested short and long term.

The present report deliberates on the differences and similarities, as well as the positives and negatives of the unilateral total hip replacement and the same time bilateral total hip replacement in the period between day 1 and 12 after the procedure from the point of view of the kinesiotherapy.

CHARACTERISTICS OF THE MINIMALLY INVASIVE SURGERY

Both standard access and the minimally invasive one are open surgical procedures. The access to the hip is through one or two small incisions (usually smaller than 10 cm). The reason to use the minimally invasive access is the considerably lesser trauma of the soft tissue during operation that potentially facilitates and speeds up the recovery postoperative period. The blood loss and the postoperative pains are smaller, the hospitalization is shorter and cheaper, the restoring of the functions is faster and the cosmetic scar is considerably smaller. On the other hand the surgical procedure itself is challenging for the medical team as it is more complicated and precise and potentially carries a high risk of complications, (N. Popov, 2013).

CLINICAL PARAMETERS

A female patient, age 70 with advanced bilateral Coxarthrosis. The patient had been previously conservatively treated both with medications and through physiotherapy – with no success. Limited volume of movement, pain, restricted functional abilities.

The results from the image diagnostics (Image 1) are showing bilateral degenerative arthritis of the joints with periacetabular osteophytes (including the femoral head and neck), ossification of joint capsule and the acetabular bottom, wearing out of the articular cartilage with abrasion, subchondral osteochondrosis and bilateral degenerative cysts.



Image 1

Minimally invasive front access is used during the surgical procedure, where the components are implanted with cement-hybrid fixation, (Image 2). The full volume of movement is restored, and also stability in the end positions is determined. The intervention of both HIP joints e lasted altogether 3.15 hrs.

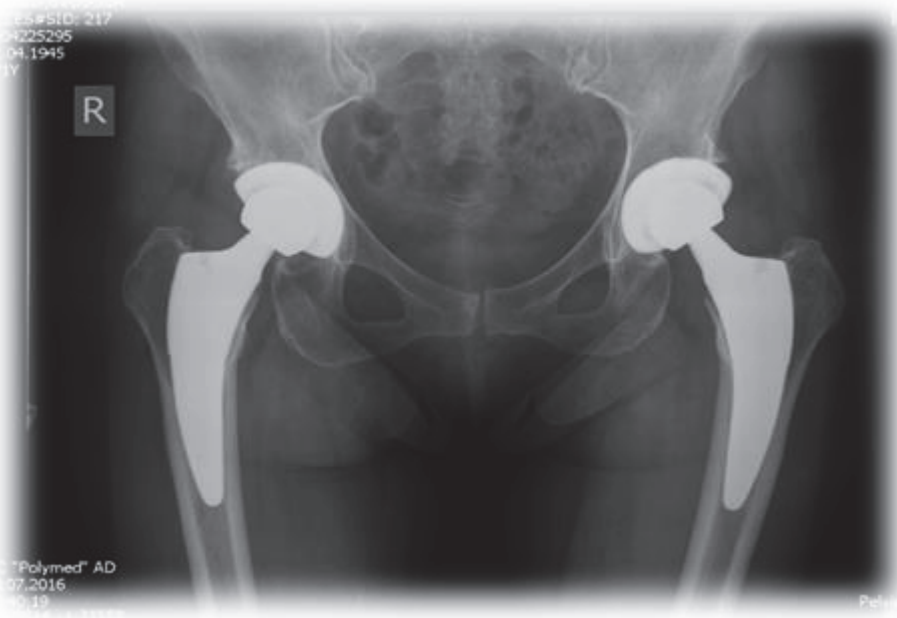


Image 2

RESEARCH METHODOLOGY

To exemplify the result from the research we have used the Harris functional status scale of 100 points, (N. Popov, 2012). We have tested the patient before the surgery and after the 12-day physiotherapeutic program.

Kinesiotherapy in the early postoperative period (1 – 12 day) after same time bilateral total hip replacement

In 2004 J. Berger and co-authors have described an accelerated rehabilitation program after minimally invasive hip replacement. If the A condition of the patient allows the physiotherapeutic procedures should start 5-6 hrs. after the end of the surgical procedure. They consist of getting up and moving from the bed into a chair within the area of comfort, walking with crutches or walking stick, getting up or down the stairs (one step at a time). According to the authors of the program the criteria to be discharged from the hospital are connected with the execution of the following activities: being able to get in and out of bed, sitting down and standing up using a standard stable chair, walking 100 steps, going up and down one flight of stairs. According to the authors, 97 out of 100 patients could do the required exercises on the following day after the, and the rest need an additional day due to postoperative delay and orthostatic reactions.

The rehabilitation program for the period started in clinical conditions (1–7 day) and continued at home and in ambulatory conditions (7–12 day).

The aim of the kinesiotherapy was to optimally restore the functionality within that period.

Tasks of kinesiotherapy were:

To decrease the oedema, to counteract the reactions connected with inactivity, to strengthen the body, to reduce the pain, to train everyday activities, to train unassisted and unsupported walking and to strengthen the muscles of the lower and upper limbs. An accent was put onto teaching the patient about the contraindications.

Means of Kinesiotherapy: Continuous passive motion (CPM), passive, active – isotonic and isometric exercise, aided exercise, exercise against the resistance distal from the operation, breathing gymnastics, training to walk with assistance and unassisted and overcoming steps.

First verticalization happens just hours after finishing the operation. It happens in stages, first stage is sitting in bed, afterwards lowering the legs down the side of the bed, with the assistance of a kinesiotherapist, who is also following the orthostatic reactions and makes sure that the lower limbs do not cross. In the case of unilateral total hip replacement the patient is allowed to use the healthy leg to help down the operated one. On the third day after the operation and under the supervision of the leading medical doctor and the kinesiotherapist the patient is turned and positioned flat on his back.

Usually after cementing operations the patient is allowed to load the endoprosthesis limb asap. after the operation, but there is also a belief that if the loading of the limb happens too early it could lead to micromovement between the bone and the implant. This could potentially disturb the stability of the endoprosthesis limb, impede the bone knitting and enable the loosening, (Popov, 2013). If the operation is unilateral the weight could be taken by the healthy leg and the patient could gradually increase the load. In order to enable the upright position after the same time bilateral technique, one needs the upper limbs and the pectoral girdle to be in a good functional condition in order to burden the weight of the body with some facilities. At the beginning we have used a walk assisted with two crutches. Railing is used to walk up and down stairs and one assisting device stepping with each foot on every (day 5 after the operation).

The patient is hospitalized for 7 days after the operation.

In the period from the 8th till the 12th day the rehabilitation process continues in ambulatory and home conditions. The load on the limb and the walking distance are gradually increased. The crutches are bit by bit replaced by 2 crutches, and around day 12 with only lone while walking up and down stairs.

RESULTS:

After the immediate postoperative tests 62 points were scored according to the Harris scale, and on day 12 after executing the rehabilitation course – improvement of the functional markers. This leads to the conclusion that the surgery was effective and there are good early results. Within only 12 days the functional state is still better than the state before the operation, even with only 7 points.

DISCUSSION

The minimally invasive and the same time minimally invasive bilateral total hip replacement enable the optimisation of the period for functional recovery of the patients. The long term results within a bigger group of patients are still to be observed. The rehabilitation programs are still to be adapted in order for the post operative physiotherapy to follow the innovations in the orthopaedic field.

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