CHARLES UNIVERSITY

FACULTY OF PHYSICAL EDUCATION AND SPORTS

Department of physiotherapy

Case study of physiotherapy treatment of a patient with the diagnosis of total hip replacement

Bachelor's thesis

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Acknowledgement

I would like to thank my brother and wife and family and all my friends who were supporting me and always standing by me. Also, I would like to thank my supervisors for the help during the realization of this work and my instructor during days of practice in University Hospital Vinohrady. Many thanks to all teachers of our faculty who educated me.

Abstract

The abstract of my study deals with the treatment of patient after total hip replacement of right hip joint after repetitive unhelpful rehabilitations of the right hip the pain was lasting from 4 years and now even during the night. My practice was at University Hospital Vinohrady. The physiotherapy program started on 16.01.2019 and ended on 29.01.2019.

My thesis branched into two parts: theoretical and practical part.

The theoretical part analysis everything related to the hip muscles, joints, ligaments, bones, nerves also the biomechanical and kinesiological point of view about the hip joint. In the practical part, after analysis eight sessions with my patient. Which include, all the examinations, therapy, conclusions and results.

The patient had the operation at ORT. FNKV hospital at 08.01.2019.

Goal of the therapy is to decrease oedema and pain, to increase rom, to increase mobility and elasticity of all soft tissues skin, fascia, ligaments, muscles, strengthening of the right leg, stability of the left leg.

After making the final kinesiological examinations in comparison with the initial was significant improvement, as rom of the hip and knee joint of the right leg, strength, mobility and elasticity of the skin was improved, and oedema and pain according to VAS scale was decreased, also the stability of walking was improved and soon the patient will be able to manage normal ADL independently.

Keywords: Total hip replacement, arthritis, coxarthrosis, arthoplast, osteoporosis, osteoarthritis, PIR, joint play, STT.

Abstrakt

Abstrakt mé studie se zabývá léčbou pacienta po totální výměně pravého kyčelního kloubu po opakovaných neužitečných rehabilitacích v pravém boku bolest trvala 4 roky a nyní i během noci. Moje praxe byla v univerzitní nemocnici Vinohrady. Program fyzioterapie začal na 16.01.2019 a skončil na 29.01.2019.

Moje diplomová práce byla rozdělena na dvě části: teoretickou a praktickou část.

Teoretická část analýzy všeho, co se týká svalových svalů, kloubů, vazů a kostí, nervových i biomechanických a kinesiologických bodů z hlediska kyčelního kloubu. V praktické části, po rozboru osm sezení s mým pacientem. Včetně všech vyšetření, terapie, závěrů a výsledků.

Pacient měl v ORT operaci. Nemocnice FNKV na 08.01.2019.

Cílem terapie je snížit otok a bolest, zvětšit ROMu, zvýšit pohyblivost a pružnost všech měkkých tkání, fascii, vazů, svalů, zpevnění pravé nohy, stability levé nohy.

Po provedení konečných kinesiologických vyšetření ve srovnání s počátečním bylo významným vylepšením, jako ROM se zlepšila pevnost kyčelní a kolenního kloubu pravé nohy, síla, mobilita a elasticita pokožky, a otok a bolest podle stupnice VAS snížila, byla zdokonalena i stabilita chůze a pacient bude schopen řídit běžnou ADL nezávisle.

Total endoprotez kycle, arthritis, coxarthrosis, arthoplast, osteoporosis, osteoarthritis, PIR, joint play, STT.

Declaration

I declare that i wrote this this bachelor thesis based on patient i had during the clinical practice. I wrote the thesis by myself as I learned during my continues study of physiotherapy at Charles University in Prague.

I declare also that no invasive methods were used during the clinical practice in University Hospital Vinohrady, my practice was under supervision of my supervisor mgr. Kateřina Kolářova and by Mgr. Michaela Stupková in department of physiotherapy in Faculty of Physical Education and Sport of Charles University in Prague.

Jaber Jaber

Prague, April 2019

Table of Contents

1 Introduction

This thesis will be including two main parts the theoretical and practical part of the case of total hip replacement, due to coxarthrosis. The case was provided in University Hospital Vinohrady from 16.01.2019 - 29.01.2019.

The theoretical part includes the anatomy, kinesiology, biomechanics, treatment of the hip with rehabilitation. The practical part includes the special part which is the most important part of the thesis.

The special part concern about the case study of total hip replacement, it is systematic procedure of mapping the structural needs of the patient's body after her operation, this include the anamnesis, initial examinations, long-term plan and short-term-plan, progress, final examination, conclusion.

Coxarthrosis is a degenerative disease in the joints caused from overload. As a result of coxarthrosis the total hip replacement was provided.

It is an operation used after damage in the entire joint, this operation can be made from there different directions, over the buttock, from the side, or from anterior side to expose the hip joint. All the damage joint will be removed the head d the femur and the acetabulum and the region will be cleaned from the remaining cartilage and arthritic bones remaining. Then a plastic socket in the pelvis cup and metal ball stem are inserted in the femur. (6)(11)

2 General part

The general part will consist of anatomy of the leg, bones, ligaments, muscles, and nerves. The biomechanics and the kinesiology of the joint will be also considered. This part will deal with the diagnosis and the treatment, surgical and non-surgical procedures and rehabilitation after total hip replacement. (9)

2.1 Anatomy of the hip joint

The hip joint after the knee is the largest weight bearing joint in the baby. At the junction of the leg and pelvis it is a ball and socket joint, the head of the femur is the ball and the acetabulum are the socket.

All components of the hip assist the mobility mechanism of the hip joint, if there is single damage in those components this will affect the mobility and range of motion and ability to bear the body weight. (4)(5)

Picture 1 Hip joint

2.1.1 Bones

Bones of low limb

Pelvis, iliac, ischial, pubic bones, femur, patella, tibia, fibula tarsals, metatarsals, proximal phalanges.

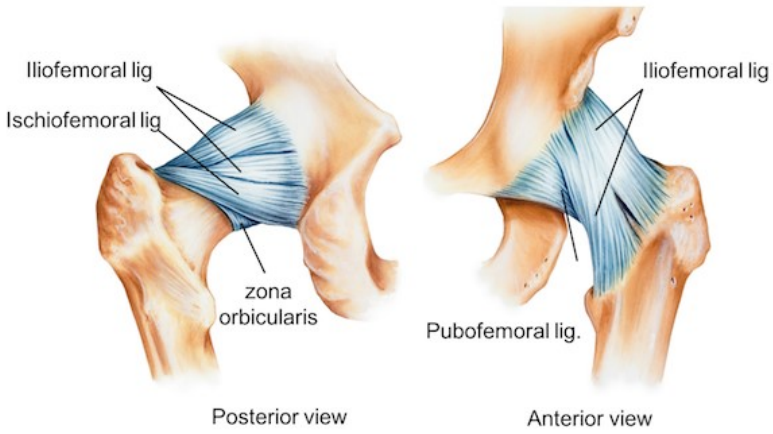
The pelvic bone consists of three bones, iliac, ischial, pubic bones, these bones are fused during puberty together, the acetabulum is on the lateral side od the pelvis which is concaved into the bone in the same area where iliac and ischial and pubic bones fused together.

Femur is the longest and the strongest bone in the body at the proximal part is attached to hip bone and from the distal side attached to tibia and patella in the region where the bone forms to femoral condyles, at the top of the femur is a rounded head which articulate with the pelvis. Also, we can observe the great and the low trochanter and intertrochanteric line intertrochanteric crest where the muscles attach this region is usually painful because of muscle disbalance. (4)(5)(3)

Picture 2 Bones of low extremity

2.1.2 Ligaments

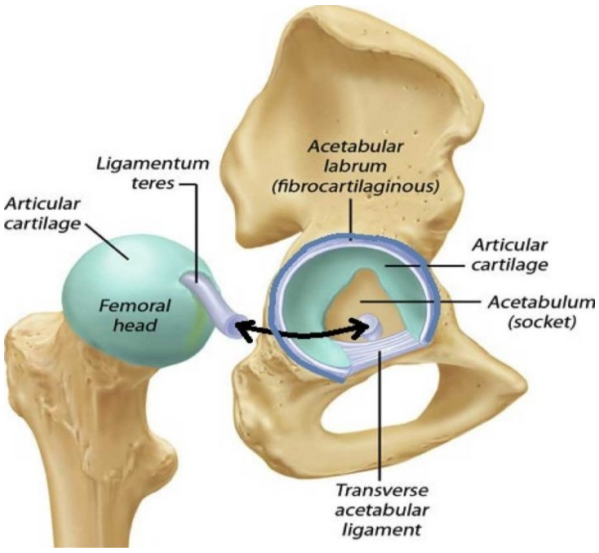
The hip capsule involves ligaments, which have functional and anatomical components. Iliofemoral, pubofemoral, ischiofemoral, ligament Terse and ligament orbicular and two intracapsular ligaments, transverse acetabular and ligament of the head of femur.



Picture 3 Ligaments of the hip joint

From the fovea of the head of the acetabular fossa goes the ligament of femoral head, this ligament does not help strengthen the hip and its weak in structure.

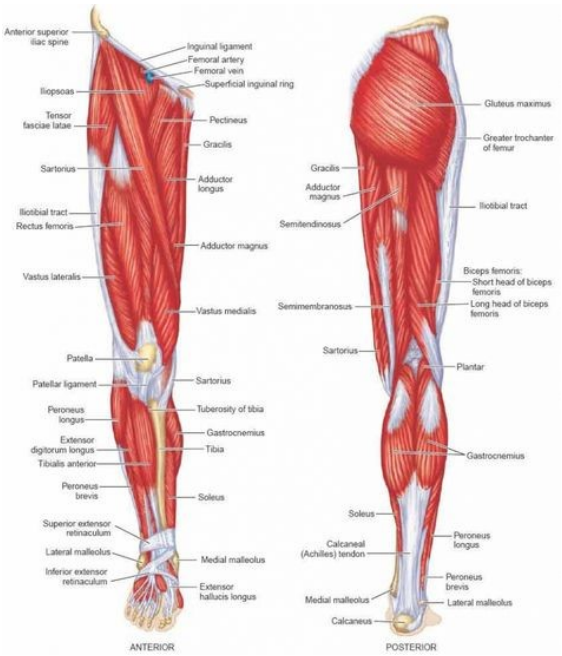
Iliofemoral, pubofemoral, ischiofemoral ligament are the extra capsular ligaments. Anteriorly we can find iliofemoral ligament which has a triangular shape or y shape and it's the strongest ligament in the body and plays a role in upright posture and stability. Posteriorly we can find the ischiofemoral ligament which play a role in hip extension stability and its known as the weakest between the extracapsular ligaments. The pubofemoral ligament limits excessive extension and abduction of the femur and its attached to superior ramus and continuously to iliofemoral ligament. (4)(5)(2)



Picture 4 Acetabular labrum

The acetabular labrum deepens the cavity in the joint and increase the stability and the strength of the hip joint and at the same time serve as shock absorber pressure distributer. (4)(5)(16)

2.1.3 Muscles



Picture 5 Muscles of low extremity

Gluteal muscles (minimus, medius and maximus) they attached to back of the pelvis and they form the buttocks and they are attached to the greater trochanter of the femur, and they are innervated by superior and inferior gluteal nerve L4,5-S1,2.

Quadriceps femoris (vastus medialis, vastus lateralis, vastus intermedius and rectus femoris) they form four heads at the front side of the femur. All the muscle is originated just below the great trochanter except rectus femoris which originate at siai and all of them are attached to tibia tuberosity and its innervated by femoral nerve L2-l4.

Iliopsoas is formed from two muscles m. Psoas major which originate fromthL2-L5 and m. Iliacus which originate from iliac fossa, and both of them are attached to the less trochanter and its innervated by femoral nerve L2-L5.

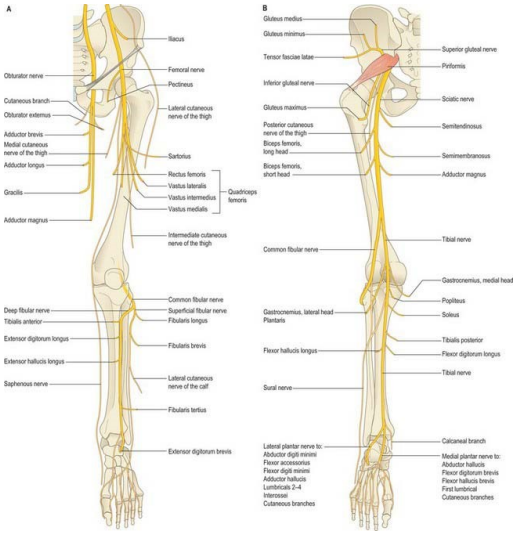
Hamstrings consist of three muscles biceps femoris, semitendinosus, semimembranosus the are placed at the posterior side of the thigh the originate at ischial

tuberosity only the short head of biceps femoris is originated at linea aspera at the femur all of them are innervated by ischial nerve. (2)(5)(4)

Hip adductors as a group of muscles are formed from mm. Gracilis, pectineus, obturator externus, adductor brevis, longus, and magnus hey originate at pubis bone and they are innervated by obturator nerve (2)(5)(4)

2.1.4 Nerves of the thigh

(femoral, ischial, obturator, gluteal)



Picture 6 Nerves of low extremity

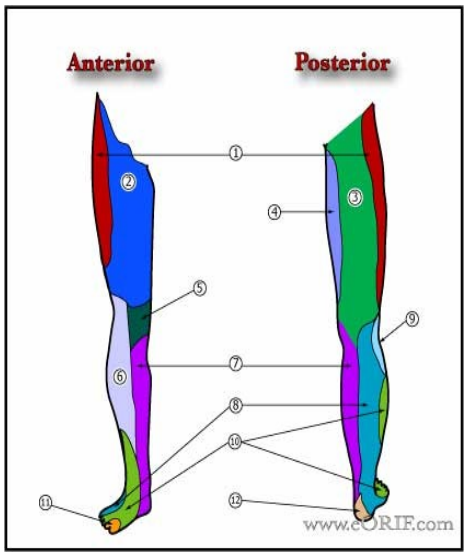
Femoral nerve is originated from lumbar plexus at L2, L3, L4 roots and it has motor functions by innervating mm. Iliacus, Pectineus, Sartorius, and Q.F. and sensory functions by innervating the skin on the anterior thigh and medial leg

Obturator nerve is originated from lumbar plexus at L2, L3, L4 roots and it has motor functions by innervating mm. Obturator Externus, Pectineus, Gracilis, Adductor Longus, Brevis, and Magnum, and sensory functions innervates skin for medial thigh.

Ischial nerve is originated from sacral plexus at L4-S3 roots and it has motor functions by innervating mm. Lateral rotator group except mm. Piriformis and Q.F. and the posterior muscles of the thigh.

Inferior Gluteal nerve L5-S2 is the main nerve supply m. Gluteus maximus which is very important for gait, and superior Gluteal nerve L4-S1 which innervate Gluteus medius, and minimus, and Tensor Fasciae Latae, both nerves are originated from Sacral plexus. (1)(7)

2.1.5 Dermatomes



Picture 7 Dermatomes of low extremity

L1: inguinal and posterior lateral buttock

L2: medial and anterior thigh

L3: anterior thigh and medial knee

L4: medial leg and medial foot

L5: lateral leg and lateral foot

S1: lateral foot and posterior thigh

S2: medial ankle and posterior thigh

S3: coccyx area and groin

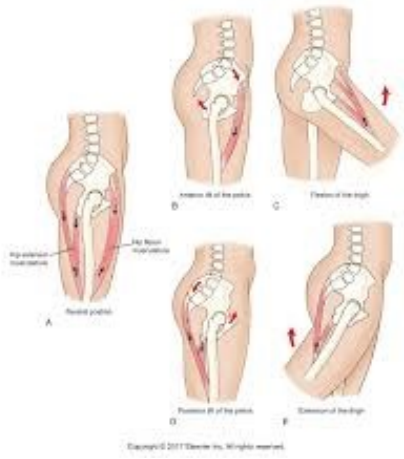
S4: coccyx area. (5)

2.2 Kinesiology of the hip joint

Physiological range of motion of the hip joint according to Kendal:

Flexion	125º
Extension	20º
Abduction	45º
Adduction	10º
External rotation	45º
Internal rotation	45º

Table 1 ROM of the hip



Picture 8 Kinesiology of the hip

In the kinesiology of the hip the muscles and bones and ligaments and tendons and fasciae play very important role in our kinesiology, and ability to reach the physiological rom and normal up righted stable posture. Connection between thoracis and pelvis by all abdominal muscles, connection between lumbar spine and pelvis is m. Iliopsoas, connection between pelvis and low extremities are all muscle groups connected to the thigh from the pelvis such as hip flexors, extensors, adductors, abductors, and external and internal rotators. (12)

The hip joint flexors: when the hip flexor are shorted the lumbar lordosis increase, m. Iliopsoas, rectus femoris, pectineus, gracilis, adductor magnim. Iliopsoas and rectus femoris are the main hip flexors. Pectineus, gracilis, and adductor magnum assist the hip flexion. Those muscles will allow the hip to provide flexion and flexion with internal rotation

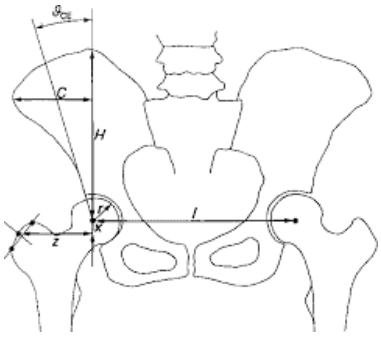
The hip extensors: the main hip extensor is m. Gluteus maximus. The assistive hip extensors are gluteus medius, minimus and hamstrings. Hamstrings works mainly while knee flexion.

The hip adductors: they have very important role for stability of the hip joint while moving, they have tendency to be shorted. Three main muscle adductors, adductor longus, brevis, magnum. Two assistive muscles, gracilis and pectineus.

The hip external rotators: they play big role in fixating the femur into the acetabulum by rotating the head of the femur externally, they have tendency to be shorten. Three main muscles for hip ER. Are mm. Piriformis, Obturator Externus and Internus, Pectineus, Quadratus Femoris, Gluteus Medius and Minimus.

the hip internal rotators: they have important role in postural adaptation of the hip joint and for stabilizing the pelvis while walking and running. (9)

2.3 Biomechanics of the hip joint:



Picture 9 Biomechanics of the hip joint

The biomechanics of the body concerns about the load applied on the bone's structures, muscles, soft tissue structures as skin, ligaments, tendons, fasciae and the ability of those structures to resist the external forces or the body weight during activities.

the hip joint is the biggest joint in the body and carry the highest load in the body while standing running, also the shorted muscles can cause tension and compression at the joint which makes the load bigger than the weight supported.

Forces on the hip:

Standing: 0.3 times the bodies weight

Standing on one limb: 2.4-2.6 times the bodies weight

Walking: 1.3-5.8 times he bodies weight

Walking upstairs: 3 times of the bodies weight

Running: 4.5+ times the bodies weight. (8)(9)

2.4 Implant THR coxae:

2.4.1 Etiology:

The common etiology is aging, but the primary type of osteoarthritis occurs in middle aged and elderly. According latest study, it can be inherited or developed as primary abnormality such as weaken cartilage which became hard which lead to breaking down and causes friction in the joint. (11)

The main degenerative changes affect the cartilage of the joint, capsular fibrosis is developed and osteophytes are formed along the periphery of the surface of the joint. Degenerative changes are established most often in the most burdened area of the surface of the joint. (10)

2.4.2 Symptoms:

Pain: which can radiate to the knee joint and can interrupt the patient sleeping and not allowing patient to relax during the night hours.

Limited ROM of the hip joint to all directions, limitation starts by distraction of movement of abduction, rotations, extension, flexion.

Stiffness: can be considered reason for disorder. Stiffness with time will progress and cause limiting range of motion.

Instability: can be caused by muscle weakness and loss of cartilage and bones.

Deformity: it is result of capsular contractures.

Loss of function: it's the most distressing symptom.

Daily living activities: siting, walking up and down the stars, gait. If the patient has problems by his basic activities this can indicate problem in the hip joint.

Swelling is first thing can be noticed especially in the peripheral joints, for example interphalangeal or metatarsophalangeal joints. (6)(7)

2.4.3 Prevention from osteoarthritis of the hip joint:

It's true that he surgical procedure of the hip now a days its routine matter, but we know several methods in order to prevent the occurrence of osteoarthritis.

Maintain the ideal body weight this will reduce the pressure on the bones.

Physical activity has beneficial results in the general condition of the patient.

Protection of the joints as if reducing excessive movements in the joints as aim the conservation of the energy.

Avoid stressing the joint as if repetitive physical activities.

Avoid of injuries during sport activities.

2.4.4 Type of treatment applied:

The conservative way and the non-conservative way.

Conservative treatment:

Refers to the treatment without application surgical approaches before or after operation. Such as using of heat and cold procedures to increase the blood circulation and release the muscle spasm, medication, maintaining the range of motion will decrease the stiffness, strengthening because strong muscle will support the joint, but exercises should be modified for sportive patients.

The role of physiotherapy and its techniques is to insure prevention of worsening in ROM of the hip and surrounded joints by applying different techniques such as PIR, stretching and strengthening, and educational for the patient for self-training and treatment at home.

Non-conservative treatment:

It's performing of surgical operation for treating the disorder. (11)

Indication:

For elderly people, for young patients with destructive disorders, cases of rheumatoid arthritis.

Early symptoms can be intermittent, could be related only to particular activity, rest and avoiding activity will improve the symptoms.

In the next stage, symptoms can become more severe by simply walking.

In the next stage, symptoms can become more severe even after stopping walking for example or certain activity.

In the next stage, the condition becomes less responsive to medical treatments such as pills or injections. (10)(11)

Contraindication:

The contraindications are very important to educate the patient about, strictly to avoid them after the operation, the patient should be educated before the operation to be prepared not to do add, ex. Rotation, in. Rotation and flexion of the operated hip more than 90 degrees.

To avoid flexion, the patient must use chair which is higher than the knees to have less than 90 degrees in the hip joint.

To avoid adduction more than the horizontal axis of the body the patient should use a pillow between the legs while moving from or to the bed.

To avoid rotations in the hip the patient should be instructed to keep the patella faced forward while providing any movement. (23)(12)

Picture 10 contraindication positions after total hip replacement

Options for implants:

The type of the implant depends on different factors such as:

The age, the level of activities of the patient.

The possible options of material can be used:

Metal and plastic material, metal on metal, ceramic on ceramic.

Picture 11 Implant total hip replacement

Picture 12 Synthetic implants used in total hip replacement

2.5 Total hip replacement:

It is an operation used after damage in the entire joint, this operation can be made from there different directions, over the buttock, from the side, or from anterior side to expose the hip joint. All the damage joint will be removed the head d the femur and the acetabulum and the region will be cleaned from the remaining cartilage and arthritic bones remaining. Then a plastic socket in the pelvis cup and metal ball stem are inserted in the femur. (6)(11)

Picture 13 Hip before and after total hip replacement

2.5.1 Pre-operative physiotherapy:

The preparing for the surgery is very important for faster healing after operation this includes conditional exercises to improve cardiorespiratory system and blood circulation. The muscles of the thigh after the operation will be weak and uncoordinated so, we will point our attention on strengthening and coordination of quadriceps femoris hamstrings and hip abductors. The gait and stability exercises are important to improve facilitation proprioceptive system. Also walking with crutches is important because the patient will use it after the operation so it's appropriate to interpret the way of using them.

2.5.2 Postoperative physiotherapy:

After the operation the hip is positioned in abduction and a pillow is placed between the knees to prevent adduction of the hip joint. When the patient starts to be alert, bed exercises will start immediately. After two days the drains will be removed. After first day the operation the patient will be able to sit for short time on the bed or on the chair in semi supine position to prevent flexion and by pacing pillow between the thighs to prevent adduction and internal rotation. From the first day the patient start training the gait even with walker for elderly and by axillary crutches for young people, the patient will be educated for ADL if he\she is living alone to be able to move safely and to be able to dress alone without provoking contraindicated movement which can

cause harm and luxation of the joint, elevated toilet and pillow between the knees when lying on unoperated side will be indicate for the first six weeks after the operation, after six to eight weeks the office workers will be able to go back to work but occupations which is while working is necessary to bend will be allowed after three months, the patient will visit the doctor at three months, at six months, at one year, and after two years to compare to investigate signs of losing or implant frailer. (1)

3 Special part (case study)

3.1 Methodology:

This study deals with the treatment of patient after total hip replacement of right hip joint after repetitive unhelpful rehabilitations of the right hip the pain was lasting from 4 years and now even during the night. My practice was at University Hospital Vinohrady. The physiotherapy program started on 16.01.2019 and ended on 29.01.2019.

The concerned doctor proposed the therapy needed for the patient to be applied after total hip replacement.

Initial kinesiological examinations were evaluated in the first day when we met the patient.

Starts by the anamnesis and subjective and objective feeling and questioning about the way the patient moves from and to the bed and if she knows all hip movements contraindication after the THR.

Follow by the initial kinesiological examinations.

After taking all the measurements and doing all tests for the low extremity such as, Goniometer, Anthropometrics, ROM, strength test, length test, joint play, Neurological examinations, the therapy in the next session afternoon.

The therapy starts by subjective and objective feeling of the patient in her room, then we walk towards the therapy room and we use the elevator one floor down in the beginning and after we start using the stairs.

After the patient lays on the bed, we start by soft tissue techniques as preparation for the therapy to relax and redden the legs by using small soft ball and manual massage.

We continue by mobilization of the foot for restricted joints and for tibiofibular joint and patella.

After we continue by PIR with stretching for the shorted and stiff muscles to increase ROM in restricted joints around the hip and for the hip itself.

After we continue by analytic training in the bed such as isometric contraction of the muscles and improvement of quality of the movements in the hip joint

At the end of the therapy the patient walks back towards her room with the therapist as gait training and correction for the walk pattern. (1)(3)(10)

3.2 Anamnesis

Author: Jaber Jaber

Workplace: University Hospital Vinohrady

Examined person: H.J

Year of birth: 1950

Date:16.01.2019

Diagnosis: Implant TEP coxae dx. for coxarthrosis. 08.01.2019 **code:**m161

Anamnesis: patient had pain in the right hip for 4 years, she feels pain during the day also during the night, conservative therapy without effect, after her hospitalization operation total hip replacement dx. was indicated.

Allergy: no

Abuse: no

Occupational. A.: MuDr. optic, she is standing or siting while working.

Family. A: married and have one child

Medical. A: Sortis 10mg tbl. 0-1-0-0, Ataralgin tbl. 1 tbl. For pain max. 3x daily, Sanval 10 mg tbl. 1\2-1 tbl. For night if she can't sleep, Frontin 0,25 mg tbl. 1tbl. For night if she can't sleep,

Social. A.: working in Vinohrady hospital, living in a building with elevator

Sport. A.: ski, mountains touristic

Operations: TE. Tonsillectomy in young age, OE. Ovariectomy 1. Dx. (1987), colles fracture 1. Dx. (1963) mammy bilat for carcinoma ductal with axial extraction of rue, residual lymphoedema rue (2003).

Status presence: TEP right hip joint 08.01.2019, at orthopedic clinic in the same hospital by surgent prof. Džupa, otherwise occasional pain in right tibia and fibula, and she feels pain during the night of her low back because of degenerative changes in her

spine.

A) objective: the patient is walking using long crutches with escort for now.

Hight: 165cm

Weight: 71kg

BMI: 26.1

Cognition: good

Communication: good

Eye glasses: just for reading

Assistive devices: underarm crutches, waist belt.

Dominant limb: right

B) subjective: patient feels good, according to scale of pain 0-10 patient's feeling 3 at region of the operation - lateral proximal aspect of the thigh.

Prior rehabilitation: Many times, with her right hip she went through rehabilitation, lately without effect, also many times she went through. Rehabilitation for lumbar spine area.

Excerpt from patient's health care file: TE. Tonsillectomy in young age, OE. Ovariectomy 1. Dx. (1987), colles fracture 1. Dx. (1963) mammy bilat for carcinoma ductal with axial extraction of rue, residual lymphoedema rue (2003).

RHB indications: kinesiological report, goniometry for hip and knee, orientationally muscle strength test for the right leg, myofascial techniques for fascia of low extremity, soft tissue for the scar after extraction of the stiches, mobilization for peripheral joints of low extremity, conditional training.

3.3 Differential balance:

Fresh scar with oedema around the wound, oedema after operation, hematoma, pain while active or passive movement in hip joint, muscle disbalance - weak muscle around the hip with hypotonia (quadriceps femoris, gluteus max. Med. Min., tensor fascia late), shorted muscles with hypertonia around the hip (iliopsoas, hip adductors, tensor fascia late, hamstrings). Limited AROM of the hip (abduction, extension, flexion, rotations). Fresh scar with oedema around the wound unstable walking with crutches also up or down of stairs, overloaded upper fixators of scapula and deep neck extensors (upper trapeze, Levator Scapulae, rectus capitis posterior major, semispinalis capitis, splenius capitis).

3.4 Initial kinesiological examinations:(16.01)

3.4.1 **Inspection while sitting on bed** (The patient cannot stand straight and fully load without crutches after the operation)

Front view: hallux valgus bilateral, varosit knees, higher of right leg than left, lightening of right hip while sitting, right latero-flexion of the trunk and flexion with rotation contralaterally, slight elevation of shoulders.

Side view: flat lumbar spine area, bigger kyphosis in thoracic spine, protraction shoulders.

Back view: left shoulder is higher, left scapula is higher, protraction of shoulders and head.

3.4.2 <u>Palpation:</u> (right thigh)

Scar: on lateral proximal side of the thigh, scar is sterile covered, slight painful, oedema around the scar, no hematoma

Skin: color and temperature in norm restriction in all directions around the wound.

Fasciae: restriction medially and anteriorly fasciae of the thigh.

Muscles: hypotrophy: quadriceps femoris, hypertonic muscles: iliopsoas, adductors, hamstrings, tensor fasciae late, tibialis anterior, hypotonic muscles: quadriceps femoris except rectus femoris, gluteus maximus.

3.4.3 Breathing:

unregular breathing wave, upper thoracic breathing stereotype with minimum using of diaphragm.

3.4.4 low limbs length (in cm):

Right			**Left**		
Functional	Anatomical		Functional	Anatomical	
94	91		91	90	
Thigh	Leg	Foot	Thigh	Leg	Foot
41	41	24	40	41	24,5

Table 2 length of low limbs in cm

3.4.6 Anthropometrics (in cm):

Right	**Circumferences (legs)**	**Left**
51	**Thigh (**15cm above the knee)	53
39	**Thigh** (above the knee)	36
35	**Knee** joint	35
36	**Calf (**biggest area)	37
24	**Ankle** joint	25

Table 3 Anthropometrics of low limbs in cm

3.4.7 Goniometer (According to SFTR method):

Right	**Active**	**Passive**	**Left**	**Active**	**Passive**
Hip	F:10-0-!	F:15-0-!	**Hip**	F:30-0-10	F:40-0-15
	S:0-0-40	S:0-0-50		S:0-0-115	S:10-0-125
Knee	S:0-0-95	S:0-0-95	**Knee**	S:0-0-120	S:0-0-125
Ankle	S:0-0-60	S:5-0-60	**Ankle**	S:15-0-60	S:15-0-60

Table 4 Goniometer Acc. to SFTR method

3.4.8 Neurological examinations (according to Lewit):

Sensation examinations:

Superficial sensation:

Tactile, Algic, Thermal dermatomes examination:

Dermatome	**Right**	**Left**
Dermatome Segment L1	Normal sensation	Normal sensation
Dermatome Segment L2	Normal sensation	Normal sensation
Dermatome Segment L3	Normal sensation	Normal sensation
Dermatome Segment L4	Normal sensation	Normal sensation
Dermatome Segment L5	Normal sensation	Normal sensation
Dermatome Segment S1	Normal sensation	Normal sensation
Dermatome Segment S2	Normal sensation	Normal sensation

Table 5 Dermatomes of low extremity

Deep sensation examination:

	Right	**Left**
Graphesthesia	Negative	Negative
Stereognosis	Negative	Negative
Position sense	Negative	Negative

Table 6 Deep sensation examinations

Deep tendon reflexes:

Area	Segment	Right	Left
Below patella	L2-4	Decreased reflex	Normal reflex
Achilles tendon	L5-s2	Normal reflex	Normal reflex
Short flexors of the foot	L5-s2	Decreased reflex	Normal reflex

Table 7 Deep tendon reflexes

3.4.9 Joint play examinations (According to lewit)

Right leg joints		Direction		Light leg joints	Direction	
Patella		Cranial	Restricted	Patella	Cranial	Restricted
		Caudal	Restricted		Caudal	Free
		Lateral	Free		Lateral	Free
		Medial	Restricted		Medial	Free
Fibula		Latero-ventrally	Free	Fibula	Latero-ventrally	Blocked
		Medio-dorsally	Blocked		Medio-dorsally	Free
Ankle, foot	Lisfranc	Plantar	Blocked	Lisfranc	Plantar	Blocked
		Dorsal	Free		Dorsal	Free
	Subtalar	Dorsal	Free	Subtalar	Dorsal	Free
	Talocrural	Dorsal	Free	Talocrural	Dorsal	Free
	Naviculotalocalcaneus	Medial	Free	Naviculotalocalcaneus	Medial	Free
		Lateral	Blocked		Lateral	Blocked
	Shobert	Plantar	Blocked	Shobert	Plantar	Free
		Dorsal	Free		Dorsal	Blocked
Fingers	1st mtp, itp	Plantar	Blocked	1st mtp, itp	Plantar	Blocked
		Dorsal	Blocked		Dorsal	Blocked
	2nd mtp, itp	Plantar	Blocked	2nd mtp, itp	Plantar	Blocked
		Dorsal	Blocked		Dorsal	Blocked
	3rd	Plantar	Free	3rd	Plantar	Free
		Dorsal	Free		Dorsal	Free
	4th	Plantar	Free	4th	Plantar	Free
		Dorsal	Free		Dorsal	Free
	5th	Plantar	Free	5th	Plantar	Free
		Dorsal	Free		Dorsal	Free

Table 8 Joint play examinations for low limbs

3.4.10 Muscle strength test (According to Kendall and Janda):

Muscle (right)	Grade	Muscle(left)	Grade
Quadriceps femoris	3+	Quadriceps femoris	4
Iliopsoas	3+	Iliopsoas	4-
Triceps Surae	4	Triceps Surae	4+
Gluteus min., med.	2+	Gluteus min., med.	4-
Gluteus maximus	2+	Gluteus maximus	3
Hamstrings	4-	Hamstrings	4+

Table 9 Muscle strength test

3.4.11 Gait analysis (underarm crutches):

The patient is able to walk on 2point support pattern with American crutches to lighten weight on right leg at straight floor and at the stairs. While walking, protraction of head and extension of neck, elevation of shoulders, flexion of the trunk, external rotation of the right hip during toes off face of the foot, no extension in the hip of right leg.

3.4.12 Examination's conclusion:

According to inspection while standing the patient is stable, while sitting the patient is no able to sit straight without lightening operated hip, while standing slight flexion of the trunk and protraction of the head. According to palpation hypertonia of all adductors mostly m. Pectineus, m. Iliopsoas, m. Rectus femoris and hamstrings and m. Tibialis anterior. Slight oedema around the wound, rom of hip and knee are limited, muscles on the right thigh are weak compared to left leg. According to joint play examination patella restricted to all directions, fibular head blocked anterolaterally and posterolateral, Lisfranc joint is blocked, naviculotalocalcaneus joint is blocked.

3.5 The goal of short - term therapeutic plan:

Prevention TEP, to increase flexion and abduction and extension of the operated hip, to stretch fasciae of right leg and around the scar, to strengthen all big muscles around the hip gluteal muscles, quadriceps femoris, to stretch adductors and hamstrings, iliopsoas, and triceps Surae, to correction breathing, to apply scar therapy, to correct walking with crutches and ADL.

3.6 Goals of long-term plan:

Maintain maximum flexion, rotation and abduction of the hip, stability of hip, knee ankle joints of operated limb, obtain optimal muscles length and strength of low limbs, absolute self-sufficient.

3.7 Therapies

3.7.1 Day1

16.01.2019 14:00-14:30

Subjective feelings: the patient is willing for training, first day in the clinic, she couldn't sleep enough, she feels slight pain in region of hip at the operated side (3-10) and at head of fibula (3-10)

Objective findings: today we are making the therapy after the initial examinations, so the patient feels little tiered, wound is sterile covered, oedema at the lateral aspect of the hip around the wound s: 0-0-40

Goal of today's therapy: to reduce oedema, TEP, to increase ROM of hip joint, fascia release at region of thigh, calf and hip of right low limb, to mobilize restricted joints, education of moving from and to the bed, walking by 2point support, verticalization.

Proposed therapy: soft tissue techniques, mobilization of peripheral joints of low limb, PIR for Q.F and hip adductors, analytic training, TEP, verticalization, walking at 2point support with crutches.

Description of today's therapeutic unit: the patient was instructed to use the right side of the bed while going in or out from the bed to avoid big flexion in hip joint, soft tissue techniques by rolling the small soft ball over all low right extremity as preparation for the therapy, mobilization dorsal and plantar direction for last three distal joints of right leg fingers, Lisfranc joint dorsal direction, subtalar and talocrural joint, patella to all directions, head of fibula latero-ventrally medio-dorsally, fascia stretch along the thigh as circular opposite touches, PIR in supine position for hip adductors for Q.F, analytic training by using the over ball in supine position we place the ball under the calf, we ask the patient to flex the knee and the hip by sliding on the ball to perform clear flexion in

the hip 10x, by using TheraBand in sitting position we place it around the knees and we ask for abduction of the right hip, in supine position we place the over ball under the right foot and we ask the patient to push against the ball for 6x, TEP in lying position, performance: planter-dorsal flexion and rotation of the foot with patella facing the ceiling 10x, training of walking at 2 point support in the corridor the patient has tendency to extend her neck with each step so, she was instructed to straighten her neck and to activate more her deep neck flexors while walking, and for the faulty external rotation of the right hip during walking, she was instructed to walk with her knee facing forward while walking, and heel towards the ceiling in phase of taking off to avoid the external rotation in her right hip.

Results of therapeutic unit: after the soft tissue techniques and mobilization the right leg was reddened and more relaxed, muscles and soft tissues had softer feeling while palpation, oedema was slightly decreased, she was educated how to move from and to the bed, she was corrected to walk with straight neck and depressed shoulders, the faulty external rotation of the right hip stayed, right hip prom: s:0-0-50, f:10-0-!

Self – training: TEP 2 exercises in supine position in bed, performance: with extended knees repetitive plantar and dorsal flexion of the foot, and repetitive rotation movement of the foot in both directions in the same position10x.

Active strengthening exercises in bed, performance: in low supine position she places the over ball under her calf, and she perform flexion in hip and knee by rolling on the ball and back to previous position10x.

In supine position with flexion of hip and knees, she places the over ball between the knees, and she perform isometric contraction against the ball10x.

In supine position with extended knees she places the over ball under her foot supported on the bed and she perform plantar flexion against the ball 10x.

In sitting position using TheraBand she places it around both knees and she perform abduction of the right leg without rotating in hip while left leg stay fixed on the bed 10x.

Notes: today we made the initial examinations for the patient, that why we had shorter session to let her relax in her room.

3.7.2 Day2

17.01.2019

Subjective feelings: the patient is willing for training, second day in the clinic, she slept better than first day, she feels slight pain in region of hip at the operated side (3-10) and at head of fibula (2-10)

Objective findings: the patient feels good and willing for training, wound is sterile covered, oedema at the lateral aspect of the hip around the wound s: 0-0-50

Goal of today's therapy: to reduce oedema, to stretch Q.F, TEP, to increase ROM of hip joint, fascia release at region of thigh, calf and hip of right low limb, to mobilize restricted joints, improve stability and correction of stepping while walking by 2point support with crutches, verticalization.

Proposed therapy: Soft tissue techniques by small soft ball for operated leg, mobilization of peripheral joints and knee of right low limb, PIR for Q.F and hip adductors and mm. Peronei, analytic training, TEP, verticalization, walking at 2point support with crutches for correction posture while walking at straight surface and at the stairs.

Description of today's therapeutic unit: soft tissue techniques by rolling the small soft ball over all low right extremity as preparation for the therapy, mobilization dorsal and plantar direction for last three distal joints of right leg fingers, Lisfranc joint dorsal direction, subtalar and talocrural joint, patella to all directions, head of fibula latero-ventrally medio-dorsally, fascia stretch along the thigh as circular opposite touches, PIR in supine position for hip adductors and hamstrings and in prone position for Q.F and in siting for mm. Peronei , analytic training by using the over ball in supine position we place the ball under the calf, we ask the patient to flex the knee and the hip by sliding on the ball to perform clear flexion in the hip 10x, by using TheraBand in sitting position we place it around the knees and we ask for abduction of the right hip, in supine position we place the over ball under the right foot and we ask the patient to push against the ball for

10x, in supine position we ask to flex her hip and knees and we place over ball between the knees and we ask the patient isometric contraction of the knees against the ball at the same time we ask the patient to bridge (extend in hip) and back to previous position, TEP in lying position, performance: planter-dorsal flexion and rotation of the foot with patella facing the ceiling 10x, training of walking at 2 point support in the corridor the patient has tendency to extend her neck with each step so, she was instructed to straighten her neck and to activate more her deep neck flexors while walking, and for the faulty external rotation of the right hip during walking, correction of stepping of the foot from the heels through lateral age of the foot towards first two fingers while walking, she was instructed to walk with her knee facing forward while walking, and heel towards the ceiling in phase of taking off to avoid the external rotation in her right hip.

Results of therapeutic unit: after the soft tissue techniques and mobilization the right leg was reddened and more relaxed, muscles and surrounded tissues had softer feeling while palpation, oedema was slightly decreased, rom of hip, knee, ankle of right leg slightly increased, she was educated how to move from and to the bed, she was corrected to walk with straight neck and depressed shoulders, the faulty external rotation of the right hip stayed, right hip prom: s:0-0-60

Self – training: TEP 2 exercises in supine position in bed, performance: with extended knees repetitive plantar and dorsal flexion of the foot, and repetitive rotation movement of the foot in both directions in the same position10x.

Active strengthening exercises in bed, performance: in low supine position she places the over ball under her calf, and she perform flexion in hip and knee by rolling on the ball and back to previous position10x.

In supine position with flexion of hip and knees, she places the over ball between the knees, and she perform isometric contraction against the ball10x.

In supine position with extended knees she places the over ball under her foot supported on the bed and she perform plantar flexion against the ball 10x.

In sitting position using trabant she places it around both knees and she perform abduction of the right leg without rotating in hip while left leg stay fixed on the bed 10x.

Notes

3.7.3 Day3

18.01.2019

Subjective feelings: the patient feels good, she slept well without pain killer, she feels slight pain in region of hip at the operated side (2-10) and at head of fibula (3-10)

Objective findings: the patient came alone from 3nd floor to the 2nd towards the training room, wound is sterile covered, slight oedema at the lateral aspect of the hip around the wound, s: 0-0-60

Goal of today's therapy: to increase mobility of soft tissues at the thigh, calf, foot and around the scar, to increase mobility of peripheral joints of foot and knee of operated leg, fascia release at thigh and calf of right low extremity, to increase rom of hip to flexion abduction and extension and for knee joint flexion, analytic training, to improve breathing, tep, verticalization, walk training with 2point support in the corridor and on the stairs.

Proposed therapy: soft tissue techniques by small soft ball for operated leg, mobilization of peripheral joints and knee of right low limb, static and dynamic breathing exercise, PIR for quadriceps femoris and hip adductors and hamstrings, analytic training, TEP, verticalization, walking at 2point support with crutches for correction posture while walking at straight surface and at the stairs.

Description of today's therapeutic unit: : soft tissue techniques by rolling the small soft ball over all low right extremity and around the scar as preparation for the therapy, static breathing located exercise for activating diaphragm in transverse plan in siting position on bed, dynamic breathing exercise by breathing in while elevating the arms and breathing out while bringing arms back to the table in supine position, mobilization dorsal and plantar direction for last three distal joints of right leg fingers, Lisfranc joint dorsal direction, subtalar and talocrural joint, patella to all directions, head of fibula latero-ventrally medio-dorsally, fascia stretch along the thigh as circular opposite touches, PIR in supine position for hip adductors and hamstrings and in prone position for Q.F, analytic training by using the over ball in supine position we place the ball under the calf, we ask

the patient to flex the knee and the hip by sliding on the ball to perform clear flexion in the hip 10x, by using TheraBand in sitting position we place it around the knees and we ask for abduction of the right hip, in supine position we place the over ball under the right foot and we ask the patient to push against the ball for 10x, in supine position we ask to flex her hip and knees and we place over ball between the knees and we ask the patient isometric contraction of the knees against the ball at the same time we ask the patient to bridge (extend in hip) and back to previous position, TEP in lying position, performance: planter-dorsal flexion and rotation of the foot with patella facing the ceiling 10x, training of walking at 2 point support in the corridor the patient has tendency to extend her neck with each step so, she was instructed to straighten her neck and to activate more her deep neck flexors while walking, and for the faulty external rotation of the right hip during walking, she was instructed to walk with her knee facing forward while walking, and heel towards the ceiling in phase of taking off to avoid the external rotation in her right hip.

Results of therapeutic unit: after the soft tissue techniques and mobilization the right leg was reddened and more relaxed, muscles and surrounded tissues had softer feeling while palpation, oedema was slightly decreased around the scare, better breathing wave, m. Quadriceps femoris and peronei are more stretched and relaxed after PIR and stretching, she was corrected to walk with straight neck and depressed shoulders, the faulty external rotation of the right hip slightly decreased, right hip prom: s:0-0-70

Self – training: TEP 2 exercises in supine position in bed, performance: with extended knees repetitive plantar and dorsal flexion of the foot, and repetitive rotation movement of the foot in both directions in the same position10x.

Active strengthening exercises in bed, performance: in low supine position she places the over ball under her calf, and she perform flexion in hip and knee by rolling on the ball and back to previous position10x.

In supine position with flexion of hip and knees, she places the over ball between the knees, and she perform isometric contraction against the ball10x.

In supine position with extended knees she places the over ball under her foot supported on the bed and she perform plantar flexion against the ball 10x.

In sitting position using TheraBand she places it around both knees and she perform abduction of the right leg without rotating in hip while left leg stay fixed on the bed 10x.

Notes

3.7.4 Day4

21.01.2019

Subjective feelings: the patient feels good, she slept well without pain killer, she feels slight pain in region of hip at the operated side (2-10) and at head of fibula (3-10)

Objective findings: the patient came alone from 3nd floor to the 2nd towards the training room, wound is uncovered half of stiches have been removed, slight oedema at the lateral aspect of the hip around the wound, s: prom: 0-0-70

Goal of today's therapy: to increase mobility of soft tissues fascia release at region of thigh, calf and hip of right low limb and around the scar, to increase mobility of peripheral joints of foot and knee of operated leg, fascia release at thigh and calf of right low extremity, to increase rom of hip to flexion abduction and extension and for knee joint flexion, analytic training, to improve breathing, TEP, verticalization, walk training with 2point support in the corridor and on the stairs.

Proposed therapy: soft tissue techniques by small soft ball for operated leg, massage around the scar, static and dynamic breathing exercise, mobilization of peripheral joints and knee of right low limb, PIR for quadriceps femoris and hip adductors and mm. Peronei, analytic training, TEP, verticalization, walking at 2point support with crutches for correction posture while walking at straight surface and at the stairs.

Description of today's therapeutic unit: soft tissue techniques by rolling the small soft ball over all low right extremity and around the scar as preparation for the therapy, static breathing located exercise for activating diaphragm in transverse plan in siting position i ask the patient to breath under my fingers. On bed, dynamic breathing exercise by breathing in while elevating the arms and breathing out while bringing arms back to the table in supine position, mobilization dorsal and plantar direction for last three distal joints of right leg fingers, Lisfranc joint dorsal direction, subtalar and talocrural joint,

patella to all directions, head of fibula latero-ventrally medio-dorsally, fascia stretch along the thigh as circular opposite touches, PIR in supine position for hip adductors and in prone position for Q.F an in siting for mm. Peronei, analytic training by using the over ball in supine position we place the ball under the calf, we ask the patient to flex the knee and the hip by sliding on the ball to perform clear flexion in the hip 10x, by using TheraBand in sitting position we place it around the knees and we ask for abduction of the right hip, in supine position we place the over ball under the right foot and we ask the patient to push against the ball for 10x, in supine position we ask to flex her hip and knees and we place over ball between the knees and we ask the patient isometric contraction of the knees against the ball at the same time we ask the patient to bridge (extend in hip) and back to previous position, TEP in lying position, performance: planter-dorsal flexion and rotation of the foot with patella facing the ceiling 10x, training of walking at 2 point support in the corridor the patient has tendency to extend her neck with each step so, she was instructed to straighten her neck and to activate more her deep neck flexors while walking, and for the faulty external rotation of the right hip during walking, she was instructed to walk with her knee facing forward while walking, and heel towards the ceiling in phase of taking off to avoid the external rotation in her right hip, at the stairs she was able to walk 2 floors up and down without problems the only correction was not to hurry with crutches while bringing the left leg up the stairs.

Results of therapeutic unit: after the soft tissue techniques and mobilization the right leg was reddened and more relaxed, muscles and surrounded tissues had softer feeling while palpation, oedema was slightly decreased around the scare, better breathing wave, m. Quadriceps femoris and peronei are more stretched and relaxed after PIR and stretching, she was corrected to walk with straight neck and depressed shoulders, the faulty external rotation of the right hip slightly decreased, right hip prom: s:0-0-80

Self – training: TEP 2 exercises in supine position in bed, performance: with extended knees repetitive plantar and dorsal flexion of the foot, and repetitive rotation movement of the foot in both directions in the same position10x.

Active strengthening exercises in bed, performance: in low supine position she places the over ball under her calf, and she perform flexion in hip and knee by rolling on the ball and back to previous position10x.

In supine position with flexion of hip and knees, she places the over ball between the knees, and she perform isometric contraction against the ball10x.

In supine position with extended knees she places the over ball under her foot supported on the bed and she perform plantar flexion against the ball 10x.

In sitting position using TheraBand she places it around both knees and she perform abduction of the right leg without rotating in hip while left leg stay fixed on the bed 10x.

Notes: the low half of stiches at the wound have been removed.

3.7.5 Day5

22.01.2019

Subjective feelings: the patient feels good, she slept well without pain killer, she feels slight pain in region of hip at the operated side (2-10) and at head of fibula (3-10)

Objective findings: the patient came alone from 3nd floor to the 2nd towards the training room, wound is uncovered, scar is healing, pushed at three places upper lower and middle part of the scar, slight oedema at the lateral aspect of the hip around the wound, s: 0-0-90

Goal of today's therapy: to increase mobility of soft tissues at the thigh, calf, foot and around the wound, to increase mobility of peripheral joints of foot and knee of operated leg, fascia release at thigh and calf of right low extremity, to increase rom of hip to flexion abduction and extension and for knee joint flexion, analytic training, to improve breathing, TEP, verticalization, walk training with 2point support in the corridor and on the stairs.

Proposed therapy: soft tissue techniques by small soft ball for operated leg, massage around the scar by small soft ball, mobilization of peripheral joints and knee of right low limb, fascia release at region of thigh, calf and hip of right low limb, PIR for quadriceps femoris and hip adductors and hamstrings, analytic training, TEP, verticalization, walking at 2point support with crutches for correction posture while walking at straight surface and at the stairs.

Description of today's therapeutic unit: description of today's therapeutic unit: soft tissue techniques by rolling the small soft ball over all low right extremity and around the scar as preparation for the therapy, static breathing located exercise for activating diaphragm in transverse plan in siting position on bed, dynamic breathing exercise by breathing in while elevating the arms and breathing out while bringing arms back to the table in supine position, mobilization dorsal and plantar direction for last three distal joints of right leg fingers, Lisfranc joint dorsal direction, subtalar and talocrural joint, patella to all directions, head of fibula latero-ventrally medio-dorsally, fascia stretch along the thigh as circular opposite touches, PIR in supine position for hip adductors and hamstrings and in prone position for Q.F , analytic training by using the over ball in supine position we place the ball under the calf, we ask the patient to flex the knee and the hip by sliding on the ball to perform clear flexion in the hip 10x, by using TheraBand in sitting position we place it around the knees and we ask for abduction of the right hip, in supine position we place the over ball under the right foot and we ask the patient to push against the ball for 10x, TEP in lying position, performance: planter-dorsal flexion and rotation of the foot with patella facing the ceiling 10x, training of walking at 2 point support in the corridor the patient has tendency to extend her neck with each step so, she was instructed to straighten her neck and to activate more her deep neck flexors while walking, and for the faulty external rotation of the right hip during walking, she was instructed to walk with her knee facing forward while walking, and heel towards the ceiling in phase of taking off to avoid the external rotation in her right hip, at the stairs she was able to walk 2 floors up and down without problems the only correction was not to hurry with crutches while bringing the left leg up the stairs.

Results of therapeutic unit: after the soft tissue techniques and mobilization the right leg was reddened and more relaxed, muscles and surrounded tissues had softer feeling while palpation, oedema was slightly decreased around the scare, better breathing wave, m. Quadriceps femoris adductors and hamstrings are stretched and relaxed, she was corrected to walk with straight neck and depressed shoulders, the faulty external rotation of the right hip slightly decreased, right hip prom: s:0-0-90

Self – training: TEP 2 exercises in supine position in bed, performance: with extended knees repetitive plantar and dorsal flexion of the foot, and repetitive rotation movement of the foot in both directions in the same position10x.

Active strengthening exercises in bed, performance: in low supine position she places the over ball under her calf, and she perform flexion in hip and knee by rolling on the ball and back to previous position10x.

In supine position with flexion of hip and knees, she places the over ball between the knees, and she perform isometric contraction against the ball10x.

In supine position with extended knees she places the over ball under her foot supported on the bed and she perform plantar flexion against the ball 10x.

In sitting position using TheraBand she places it around both knees and she perform abduction of the right leg without rotating in hip while left leg stay fixed on the bed 10x.

Notes:

3.7.6 Day 6

23.01.2019

Subjective feelings: the patient feels good, she slept well, she feels slight pain in region of hip at the operated side (2-10) and at head of fibula (2-10).

Objective findings: the patient came alone from 3nd floor to the 2nd towards the training room, stiches all have been removed, 24cm scar is healing and pushed at three places upper, lower and middle part of the scar, slight oedema at the lateral aspect of the hip around the scar, prom: s: 0-0-90.

Goal of today's therapy: scar therapy, to increase mobility of soft tissues at the thigh, calf, foot and around the scar, to increase mobility of peripheral joints of foot and knee of operated leg, fascia release at thigh and calf of right low extremity, to increase rom of hip to flexion abduction and extension and for knee joint flexion, analytic training, to improve breathing, TEP, verticalization, walk training with 2point support in the corridor and on the stairs.

Proposed therapy: soft tissue techniques by small soft ball all over operated leg, scare pressure massage, mobilization of peripheral joints and knee of right low limb, fascia release at region of thigh, calf and hip of right low limb, PIR hip adductors and hamstrings

and mm. Peronei, analytic training, static and dynamic breathing exercise, TEP, verticalization, walking at 2point support with crutches for correction posture while walking at straight surface and at the stairs.

Description of today's therapeutic unit: soft tissue techniques by rolling the small soft ball over all low right, scar pressure massage and s and c touches all over the scar, static breathing located exercise for activating diaphragm in transverse plan, static breathing located exercise for activating diaphragm in transverse plan in siting position on bed, dynamic breathing exercise by breathing in while elevating the arms and breathing out while bringing arms back to the table in supine position, mobilization dorsal and plantar direction for last three distal joints of right leg fingers, Lisfranc joint dorsal direction, subtalar and talocrural joint, patella to all directions, head of fibula latero-ventrally medio-dorsally, fascia stretch along the thigh as circular opposite touches, PIR for hamstrings and hip adductors in supine position and mm. Peronei in siting position, analytic training by using the over ball in supine position we place the ball under the calf, we ask the patient to flex the knee and the hip by sliding on the ball to perform clear flexion in the hip 10x, by using TheraBand in sitting position we place it around the knees and we ask for abduction of the right hip, in supine position we place the over ball under the right foot and we ask the patient to push against the ball for 10x, TEP in lying position, performance: planter-dorsal flexion and rotation of the foot with patella facing the ceiling 10x, training of walking at 2 point support in the corridor the patient has tendency to extend her neck with each step so, she was instructed to straighten her neck and to activate more her deep neck flexors while walking, and for the faulty external rotation of the right hip during walking, she was instructed to walk with her knee facing forward while walking, and heel towards the ceiling in phase of taking off to avoid the external rotation in her right hip, at the stairs she was able to walk 2 floors up and down without problems the only correction was not to hurry with crutches while bringing the left leg up the stairs.

Results of therapeutic unit: after the soft tissue techniques and mobilization the right leg was reddened and more relaxed, muscles and surrounded tissues had softer feeling, oedema was slightly decreased around the scare, better breathing wave, m. Quadriceps femoris and peronei are more stretched and relaxed after PIR and stretching, she was corrected to walk with straight neck and depressed shoulders, the faulty external rotation of the right hip slightly decreased, right hip prom: S:0-0-90

Self – training: TEP 2 exercises in supine position in bed, performance: with extended knees repetitive plantar and dorsal flexion of the foot, and repetitive rotation movement of the foot in both directions in the same position10x.

Active strengthening exercises in bed, performance: in low supine position she places the over ball under her calf, and she perform flexion in hip and knee by rolling on the ball and back to previous position10x.

In supine position with flexion of hip and knees, she places the over ball between the knees, and she perform isometric contraction against the ball10x.

In supine position with extended knees she places the over ball under her foot supported on the bed and she perform plantar flexion against the ball 10x.

In sitting position using TheraBand she places it around both knees and she perform abduction of the right leg without rotating in hip while left leg stay fixed on the bed 10x.

Notes: stiches all have been removed, maximum allowed flexion has been fulfilled.

3.7.7 Day7

24.01.2019

Subjective feelings: the patient feels tired, she couldn't sleep properly, she feels slight pain in region of hip at the operated side (2-10) and at head of fibula (4-10).

Objective findings: the patient came alone from 3nd floor to the 2nd towards the training scar is healing and more flexible and less pushed in, slight oedema at the lateral aspect of the hip around the wound, AROM: f: 10-0-!. S: 0-0-75

Goal of today's therapy: scar therapy, to increase mobility of soft tissues at the thigh and calf and around the scar, to increase mobility of peripheral joints of foot and knee of operated leg, fascia release at thigh and calf of right low extremity, to increase rom of hip to flexion abduction and extension and for knee joint flexion, analytic training, TEP, verticalization, walk training with 2point support in the corridor and on the stairs.

Proposed therapy: soft tissue techniques by small soft ball for operated leg, scare pressure massage, mobilization of peripheral joints and knee of right low limb, fascia release at region of thigh, calf and hip of right low limb, PIR for quadriceps femoris and hip adductors and hamstrings, analytic training, TEP, verticalization, walking at 2point support with crutches for correction posture while walking at straight surface and at the stairs.

Description of today's therapeutic unit: soft tissue techniques by rolling the small soft ball over all low right, scar pressure massage and s and c touches all over the scar, mobilization dorsal and plantar direction for last three distal joints of right leg fingers, Lisfranc joint dorsal direction, subtalar and talocrural joint, patella to all directions, head of fibula latero-ventrally medio-dorsally, fascia stretch along the thigh as circular opposite touches, PIR for m. Quadriceps femoris and hip adductors and mm. Peronei, analytic training by using the over ball in supine position we place the ball under the calf, we ask the patient to flex the knee and the hip by sliding on the ball to perform clear flexion in the hip 10x, by using TheraBand in sitting position we place it around the knees and we ask for abduction of the right hip, in supine position we place the over ball under the right foot and we ask the patient to push against the ball for 10x, in supine position we ask to flex her hip and knees and we place over ball between the knees and we ask the patient isometric contraction of the knees against the ball at the same time we ask the patient to bridge (extend in hip) and back to previous position, TEP in lying position, performance: planter-dorsal flexion and rotation of the foot with patella facing the ceiling 10x, training of walking at 2 point support in the corridor the patient has tendency to extend her neck with each step so, she was instructed to straighten her neck and to activate more her deep neck flexors while walking, and for the faulty external rotation of the right hip during walking, she was instructed to walk with her knee facing forward while walking, and heel towards the ceiling in phase of taking off to avoid the external rotation in her right hip, at the stairs she was able to walk 1 floors up and down without problems.

Results of therapeutic unit: after the soft tissue techniques and mobilization the right leg was reddened and more relaxed, muscles and surrounded tissues had softer feeling, oedema was slightly decreased around the scare, better breathing wave, m. Quadriceps femoris and peronei are more stretched and relaxed after PIR and stretching, she was

corrected to walk with straight neck and depressed shoulders, the faulty external rotation of the right hip slightly decreased, right hip AROM: f:10-0-!, s: 0-0-75

Self – training: TEP 2 exercises in supine position in bed, performance: with extended knees repetitive plantar and dorsal flexion of the foot, and repetitive rotation movement of the foot in both directions in the same position10x.

Active strengthening exercises in bed, performance: in low supine position she places the over ball under her calf, and she perform flexion in hip and knee by rolling on the ball and back to previous position10x.

In supine position with flexion of hip and knees, she places the over ball between the knees, and she perform isometric contraction against the ball10x.

In supine position with extended knees she places the over ball under her foot supported on the bed and she perform plantar flexion against the ball 10x.

In sitting position using TheraBand she places it around both knees and she perform abduction of the right leg without rotating in hip while left leg stay fixed on the bed 10x.

Camoped (machine which provide passive motion for hip to increase flexion of operated leg).

Notes: today we used for first time Camoped for low extremities

3.7.8 Day8

25.01.2019

Subjective feelings: the patient feels tired, she couldn't sleep properly, she feels slight pain in region of hip at the operated side (2-10) and at head of fibula (2-10).

Objective findings: the patient came alone from 3nd floor to the 2nd towards the training scar more movable and less pushed in, slight oedema at the lateral aspect of the hip around the wound, AROM: f: 10-0-!, s: 0-0-75

Goal of today's therapy: scar therapy, to increase mobility of soft tissues at the thigh and calf and around the scar, to increase mobility of peripheral joints of foot and knee of operated leg, fascia release at thigh and calf of right low extremity, to increase rom of hip to flexion abduction and extension and for knee joint flexion, analytic training, TEP, verticalization, walk training with 2point support in the corridor and on the stairs.

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Description of today's therapeutic unit: soft tissue techniques by rolling the small soft ball over all low right, scar pressure massage and s and c touches all over the scar, mobilization dorsal and plantar direction for last three distal joints of right leg fingers, Lisfranc joint dorsal direction, subtalar and talocrural joint, patella to all directions, head of fibula latero-ventrally medio-dorsally, fascia stretch along the thigh as circular opposite touches, PIR for m. Quadriceps femoris and hip adductors and mm. Peronei, analytic training by using the over ball in supine position we place the ball under the calf, we ask the patient to flex the knee and the hip by sliding on the ball to perform clear flexion in the hip 10x, by using TheraBand in sitting position we place it around the knees and we ask for abduction of the right hip, in supine position we place the over ball under the right foot and we ask the patient to push against the ball for 10x, in supine position we ask to flex her hip and knees and we place over ball between the knees and we ask the patient isometric contraction of the knees against the ball at the same time we ask the patient to bridge (extend in hip) and back to previous position, TEP in lying position, performance: planter-dorsal flexion and rotation of the foot with patella facing the ceiling 10x, training of walking at 2 point support in the corridor the patient has tendency to extend her neck with each step so, she was instructed to straighten her neck and to activate more her deep neck flexors while walking, and for the faulty external rotation of the right hip during walking, she was instructed to walk with her knee facing forward while walking, and heel towards the ceiling in phase of taking off to avoid the external rotation in her right hip, at the stairs she was able to walk 1 floors up and down without problems.

Results of therapeutic unit: after the soft tissue techniques and mobilization the right leg was reddened and more relaxed, muscles and surrounded tissues had softer feeling, oedema was slightly decreased around the scare, better breathing wave, m. Quadriceps femoris and peronei are more stretched and relaxed after PIR and stretching, she was corrected to walk with straight neck and depressed shoulders, the faulty external rotation of the right hip slightly decreased, right hip AROM: f:10-0-!, s: 0-0-75

Self – training: TEP 2 exercises in supine position in bed, performance: with extended knees repetitive plantar and dorsal flexion of the foot, and repetitive rotation movement of the foot in both directions in the same position10x.

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In supine position with extended knees she places the over ball under her foot supported on the bed and she perform plantar flexion against the ball 10x.

In sitting position using TheraBand she places it around both knees and she perform abduction of the right leg without rotating in hip while left leg stay fixed on the bed 10x.

Camoped for low extremities.

Notes: today Epicrisis was made for the patient. Evaluation: stable walking at 2point walking type with long crutches, she is able to walk independently, during the therapy program we achieved better walking stereotype, bigger AROM toward flexion 75 and abduction 15, hypertonia of the muscles of right hip adductors was decreased, right leg in general is stronger than before wound without stiches pushed inside in the middle part and its healing.

3.8 Final kinesiological examinations:(29.01)

3.8.1 Inspection while sitting:

Lightening of right hip while sitting with right latero-flexion of the trunk with flexion and rotation contralaterally, slight elevation of shoulders, protraction of the head. Stable standing with lightening of right leg, flexion of the trunk and protraction of the head and slight elevation of shoulders while standing.

Front view: hallux valgus bilateral, varosit knees, higher of right leg than left, less lightening of right hip while sitting with decreased right latero-flexion of the trunk and flexion with rotation contralaterally, pelvis right side slightly tilted up, slight elevation of shoulders.

Side view: small lumbar spine lordosis, retroversion of pelvis bigger kyphosis in thoracic spine, protraction shoulders.

Back view: pelvis right side slightly tilted up, left shoulder slightly higher, left scapula slightly higher, protraction of shoulders and head.

3.8.2 Palpation: (right thigh)

Scar: scar is healing, slight painful, slight pushed in in the middle part of the scar, slight oedema around the scar, no hematoma

Skin: color and temperature in norm restriction at lateral side of the thigh in all directions and around the wound.

Fasciae: restriction medial fasciae of the thigh.

Muscles: hypertonic muscles: iliopsoas, adductors, hamstrings, tensor fasciae late, tibialis anterior, hypotonic muscles: quadriceps femoris except rectus femoris, gluteus maximus.

3.8.3 Breathing:

improvement of breathing wave, upper thoracic breathing stereotype with minimum using of diaphragm.

3.8.4 Anthropometrics:

Right	Circumferences	Left
51	**Thigh (**15cm above the knee)	51
38	**Thigh** (above the knee)	35
36	**Knee** joint	38
36	**Calf**(biggest area)	38
30	**Ankle** joint	31

Table 10 Anthropometrics of low limbs

3.8.5 Goniometer (SFTR method)

Right	Active	Passive	Left	Active	Passive
Hip	F:20-0-!	F:25-0-!	**Hip**	F:30-0-10	F:35-0-10
	S:10-0-80	S:15-0-90		S:15-0-110	S:20-0-115
Knee	S:0-0-125	S:0-0-130	**Knee**	S:0-0-100	S:0-0-115
Ankle	S:10-0-60	S:15-0-65	**Ankle**	S:15-0-50	S:20-0-55

Table 11 Goniometer Acc. SFTR method

3.8.6 Low limbs length:

Right			**Left**		
Functional	Anatomical		Functional	Anatomical	
94	83		94	82	
Thigh	Leg	Foot	Thigh	Leg	Foot
41	41	24	40	41	24,5

Table 12 Low limb length

3.8.7 Neurological examinations (according to lewit):

Superficial sensation:

(tactile, algic, thermal) dermatomes examination:

Dermatome	Right	Left
Dermatome segment l1	Normal sensation	Normal sensation
Dermatome segment l2	Normal sensation	Normal sensation
Dermatome segment l3	Normal sensation	Normal sensation
Dermatome segment l4	Normal sensation	Normal sensation
Dermatome segment l5	Normal sensation	Normal sensation
Dermatome segment s1	Normal sensation	Normal sensation
Dermatome segment s2	Normal sensation	Normal sensation

Table 13 Dermatomes of low extremity

Deep tendon reflexes:

Area	Segment	Right	Left
Below patella	L2-4	Decreased reflex	Normal reflex
Achilles tendon	L5-s2	Normal reflex	Normal reflex
Short flexors of the foot	L5-s2	Decreased reflex	Normal reflex

Table 14 Deep tendon reflexes

3.8.8 Joint play examinations (according to lewit):

Right leg joints		**Direction**	**Degree of freedom**	**Light leg joints**	**Direction**	**Degree of freedom**
Patella		Cranial	Restricted	Patella	Cranial	Free
		Caudal	Free		Caudal	Free
		Lateral	Free		Lateral	Free
		Medial	Free		Medial	Free
Fibula		Latero-ventrally	Free	Fibula	Latero-ventrally	Restricted
		Medio-dorsally	Restricted		Medio-dorsally	Free
Ankle, foot	Lisfranc	Plantar	Restricted	Lisfranc	Plantar	Restricted
		Dorsal	Free		Dorsal	Free
	Subtalar	Plantar	Free	Subtalar	Plantar	Free
		Dorsal	Free		Dorsal	Free
	Talocrural	Dorsal	Free	Talocrural	Dorsal	Free
	Naviculotalocalcanius	Medial	Free	Naviculotalocalcanius	Medial	Free
		Lateral	Restricted		Lateral	Restricted
	Shobert	Plantar	Restricted	Shobert	Plantar	Free
		Dorsal	Free		Dorsal	Blocked
Fingers	1st mtp, itp	Plantar	Blocked	1st mtp, itp	Plantar	Blocked
		Dorsal	Blocked		Dorsal	Blocked
	2nd mtp, itp	Plantar	Blocked	2nd mtp, itp	Plantar	Blocked
		Dorsal	Blocked		Dorsal	Blocked
	3rd	Plantar	Free	3rd	Plantar	Free
		Dorsal	Free		Dorsal	Free
	4th	Plantar	Free	4th	Plantar	Free
		Dorsal	Free		Dorsal	Free
	5th	Plantar	Free	5th	Plantar	Free
		Dorsal	Free		Dorsal	Free

Table 15 joint play examinations

3.8.9 Strength test right leg:(according to Janda and Kendall)

Muscle (right)	Grade	Muscle(left)	Grade
Quadriceps femoris	3+	Quadriceps femoris	4
Iliopsoas	4-	Iliopsoas	4-
Triceps Surae	4	Triceps Surae	4+
Gluteus min., med.	4-	Gluteus min., med.	4-
Gluteus maximus	3	Gluteus maximus	4
Hamstrings	3+	Hamstrings	4+

Table 16 Strength test of low extremity

3.8.10 Gait analysis (with long crutches):

The patient is able to walk independently on 2point support pattern with underarm crutches to lighten weight on right leg at straight floor and at the stairs alone without assistant, good orientation and stability. While walking, slight protraction of head, slight elevation of shoulders, slight flexion of the trunk, slight external rotation of the right hip during toes off face of the foot, no extension in the hip of right leg.

3.8.11 Final examination's conclusion:

According to inspection while standing the patient is stable, she is able to load her right hip while sitting but the patient still not able to sit straight without lightening operated hip, while standing with crutches slight flexion of the trunk and protraction of the head. According to palpation hypertonia of all adductors mostly m. Pectineus, m. Iliopsoas, m. Rectus femoris and hamstrings and m. Tibialis anterior, hypotonic muscles: quadriceps femoris except rectus femoris, gluteus maximus. According to gait analysis, she is able to walk more straighten in the trunk and neck and more depression of shoulders and less E.R. in right hip joint. Slight oedemic around the wound from posterior side, rom of hip joint with flexed knee increased AROM S:10-0-90, F:20-0-! and PROM S:15-0-90, F:25-0-! and ROM of knee increased AROM s:130-0-0, PROM s: 135-0-0, muscles on the right thigh gained strength and slightly volume. According to joint play examination patella restricted only in cranial direction, fibular restricted medio-dorsally, Lisfranc joint restricted in plantar direction, naviculotalocalcaneus joint is restricted.

3.9 Evaluation of effect of therapy:

3.9.1 Goniometer (SFTR method):

Duration	Final				Initial			
Movement	Right		Left		Right		Left	
	Active	Passive	Active	Passive	Active	Passive	Active	Passive
Hip	F:20-0-!	F:25-0-!	F:30-0-10	F:40-0-15	F:10-0-!	F:15-0-!	F:30-0-10	F:40-0-15
	S:10-0-90	S:15-0-90	S:0-0-115	S:10-0-125	S:0-0-40	S:0-0-50	S:0-0-115	S:10-0-125
Knee	S:0-0-125	S:0-0-130	S:0-0-120	S:0-0-125	S:0-0-95	S:0-0-95	S:0-0-120	S:0-0-125
Ankle	S:10-0-60	S:15-0-65	S:15-0-60	S:15-0-60	S:0-0-60	S:5-0-60	S:15-0-60	S:15-0-60

Table 17 Evaluation of ROM

3.9.2 Anthropometrics:

	Final		Initial	
Circumferences	Right	Left	Right	Left
Thigh (15cm above the knee)	51	51	51	53
Thigh (above the knee)	38	35	39	36
Knee joint	36	38	35	35
Leg	36	38	36	37
Ankle joint	30	31	24	25

Table 18 Evaluation of circumferences of low extremity

3.9.3 Joint play examinations:

Initial						
Right leg joints		**Direction**		**Light leg joints**	**Direction**	
Patella		Cranial	Restricted	Patella	Cranial	Restricted
		Caudal	Restricted		Caudal	Free
		Lateral	Free		Lateral	Free
		Medial	Restricted		Medial	Free
Fibula		Latero-ventrally	Free	Fibula	Latero-ventrally	Blocked
		Medio-dorsally	Blocked		Medio-dorsally	Free
Ankle, foot	Lisfranc	Plantar	Blocked	Lisfranc	Plantar	Blocked
Final						
Right leg joints		**Direction**	**Degree of freedom**	**Light leg joints**	**Direction**	**Degree of freedom**
Patella		Cranial	Restricted	Patella	Cranial	Free
		Caudal	Free		Caudal	Free
		Lateral	Free		Lateral	Free
		Medial	Free		Medial	Free
Fibula		Latero-ventrally	Free	Fibula	Latero-ventrally	Restricted
		Medio-dorsally	Restricted		Medio-dorsally	Free
Ankle, foot	Lisfranc	Plantar	Restricted	Lisfranc	Plantar	Restricted

Table 19 Evaluation of joint play

3.9.4 Gait evaluation of effect of therapy:

Slight progress of the gait at straight surface and on the stairs. Posture is more stable in general, she is able to walk more up righted in the trunk and whole spine, head is less extended and protracted and shoulders are less protracted, the excessive ER. Of the right hip while walking slightly reduced, good stability while walking on stairs.

3.9.5 Prognosis:

After the progress she achieved in the hospital, the patient is aware about the things needed to do after going back home and about all contraindications.

if she will follow the instructions and keep training and stretching, she will be able soon to go back to work and to manage ADL.

4 Conclusion

The THR needs a suitable physiotherapeutic approach to influence the post-operative pain and oedema and ROM.

Every day the patient was gaining bigger ROM and feeling better.

The patient is more prepared for ADL after gaining better stability while walking and better mobility needed to avoid contraindications and wrong posture while walking and sitting.

my work with the patient was for me great experience, it was fluent, and she was satisfied about the therapies during all sessions.

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6 supplements

6.1 List of pictures

6.2 List of tables

6.3 List of abbreviations

- AROM-active range of motion
- PROM-passive range of motion
- ER-external rotation
- IR-internal rotation
- QF-quadriceps femoris
- PIR-post-isometric relaxation
- SFTR-sagittal, frontal, transversal, rotational
- TEP-trombo-embolic prevention
- ABD-abduction
- ADD-adduction
- FLX-flexion
- EXT-extension
- CI-contraindication
- THR-total hip replacement
- MTP-metatarsophalangeal
- M-muscle
- ADL-active daily living

CHARLES UNIVERSITY
FACULTY OF PHYSICAL EDUCATION AND SPORT
José Martího 31, 162 52 Prague 6-Veleslavín

Application for Approval by UK FTVS Ethics Committee

of a research project, thesis, dissertation or seminar work involving human subjects

The title of a project: CASE STUDY OF PHYSIOTHERAPEUTIC TREATMENT OF A PATIENT AFTER TOTAL HIP REPLACEMENT

Project form: Bachelor thesis

Period of realization of the project: January 2019

Applicant: Jaber Jaber, UK FTVS – Physiotherapy department

Main researcher: Jaber Jaber, UK FTVS – Physiotherapy department

Workplace: Klinika rehabilitačního lékařství Fakultní nemocnice Královské Vinohrady

Supervisor: Mgr. Michaela Stupková

Project description: Case study of patient after total hip replacement. The aim of the case study is to first exam the patient's initial state using questionnaires, specific physiotherapy examination and observation. After two working weeks of physiotherapeutic techniques the patient will undergo a final examination using observation, specific physiotherapy examination and questionnaires observe changes from the initial state and evaluate the effectiveness of the physiotherapeutic procedures used.

Characteristics of participants in the research: Female patient aged 68. The patient is staying at Klinika rehabilitačního lékařstvi Fakultní nemocnice Královské Vinohrady the full two working weeks that the research is accurring.

Ensuring safety within the research: Risks to the patient will be minimised. There will be team of qualified physiotherapists and doctors on the same building during the research and all procedures. The patient is notified about using a scale of pain between 1-10 (10 being maximum) and to not continue with a specific procedure if pain levels go over a level 5. No invasive methods will be used during the research. The physical presence of the responsible supervision Mgr. Michaela Stupková.

Ethical aspects of the research: All data obtained during the research will strictly be used only for the Bachelor thesis and possible further research at UK FTVS. The bachelor thesis will contain no data leading to the identification of the patient used in the research. After anonymization the personal data will be deleted. Any photographs containing the patient likeness will be suitably blurred or adapted to ensure to the maximum extent possible that he data will be misused

Informed Consent: attached

It is the duty of **all participants of the research team** to protect life, health, dignity, integrity, the right to self-determination, privacy and protection of the personal data of all research subjects, and to undertake all possible precautions. Responsibility for the protection of all research subjects lies on the researcher(s) and not on the research subjects themselves, even if they gave their consent to participation in the research. All participants of the research team must take into consideration ethical, legal and regulative norms and standards of research involving human subjects applicable not only in the Czech Republic but also internationally.
I confirm that this project description corresponds to the plan of the project and, in case of any change, especially of the methods used in the project, I will inform the UK FTVS Ethics Committee, which may require a re-submission of the application form.

In Prague, 25.01.2019 Applicant's signature:

Approval of UK FTVS Ethics Committee

The Committee: Chair: doc. PhDr. Irena Parry Martínková, Ph.D.
Members: prof. PhDr. Pavel Slepička, DrSc.
doc. MUDr. Jan Heller, CSc.
PhDr. Pavel Hráský, Ph.D.
Mgr. Eva Prokešová, Ph.D.
MUDr. Simona Majorová

The research project was approved by UK FTVS Ethics Committee under the registration number: ……..

Date of approval: …….

UNIVERZITA KARLOVA
FAKULTA TĚLESNÉ VÝCHOVY A SPORTU
José Martího 31, 162 52 Praha 6-Veleslavín

INFORMOVANÝ SOUHLAS

Vážená paní, vážený pane,

v souladu se Všeobecnou deklarací lidských práv, zákonem č. 101/2000 Sb., o ochraně osobních údajů a o změně některých zákonů, ve znění pozdějších předpisů, Helsinskou deklarací, přijatou 18. Světovým zdravotnickým shromážděním v roce 1964 ve znění pozdějších změn (Fortaleza, Brazílie, 2013) a dalšími obecně závaznými právními předpisy Vás žádám o souhlas s prezentováním a uveřejněním výsledků vyšetření a průběhu terapie prováděné v rámci praxe na ……, kde Vás příslušně kvalifikovaná osoba seznámila s Vaším vyšetřením a následnou terapií. Výsledky Vašeho vyšetření a průběh Vaší terapie bude publikován v rámci bakalářské práce na UK FTVS, s názvem .....

Získané údaje, fotodokumentace, průběh a výsledky terapie budou uveřejněny v bakalářské práci v anonymizované podobě. Osobní data nebudou uvedena a budou uchována v anonymní podobě. V maximální možné míře zabezpečím, aby získaná data nebyla zneužita.

Jméno a příjmení řešitele ..... Podpis:.....

Jméno a příjmení osoby, která provedla poučení..... Podpis:.....

Prohlašuji a svým níže uvedeným vlastnoručním podpisem potvrzuji, že dobrovolně souhlasím s prezentováním a uveřejněním výsledků vyšetření a průběhu terapie ve výše uvedené bakalářské práci, a že mi osoba, která provedla poučení, osobně vše podrobně vysvětlila, a že jsem měl(a) možnost si řádně a v dostatečném čase zvážit všechny relevantní informace, zeptat se na vše podstatné a že jsem dostal(a) jasné a srozumitelné odpovědi na své dotazy. Byl(a) jsem poučen(a) o právu odmítnout prezentování a uveřejnění výsledků vyšetření a průběhu terapie v bakalářské práci nebo svůj souhlas kdykoli odvolat bez represí, a to písemně zasláním Etické komisi UK FTVS, která bude následně informovat řešitele.

Místo, datum .....

Jméno a příjmení pacienta ..... Podpis pacienta: .....

Jméno a příjmení zákonného zástupce .....

Vztah zákonného zástupce k pacientovi ..... Podpis: .....