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Physiotherapeutic proceedings with patient after petrochanteric fracture

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Abstract

Introduction: The elderly are often affected by hip fractures. A trochanteric fracture is defined as when the fracture fissure is between the capsule and 3 cm below the lesser trochanter. The most common cause of these fractures is osteoporosis in the elderly. Treatment of a trochanteric fracture may be operative or conservative. The aim of this study was to define a plan of physiotherapeutic treatment in a patient after fixation of a trochanteric fracture with an intramedullary nail.

Materials and methods: The work was written based on the medical history of a patient with a trochanteric fracture. The entire treatment procedure was carried out at the Department of Orthopedics, Traumatology and Oncology of the Musculoskeletal System, located at Unii Lubelskiej 1 in Szczecin.

Results: Rehabilitation is an indispensable element in the treatment process of patients after a trochanteric fracture. It is implemented already from 1 day after the surgery in order to activate the patient as soon as possible. Such a procedure is to ensure faster activation of the patient and to avoid adverse changes resulting from too long immobilization.

Conclusion: Rehabilitation is an indispensable element in the treatment of patients after a trochanteric fracture. Early patient activation reduces the risk of postoperative complications.

Key words: fracture; therapy; hip-joint

Introduction:

Trochanteric fractures largely (80%) occur in the elderly. It is estimated that about 20,000 fractures of the proximal end of the femur are operated on each year in Poland. As much as 44% are trochanteric fractures and 6% are trochanteric fractures. A trochanteric fracture is defined as when the fracture fissure is between the capsule and 3 cm below the lesser trochanter. The most common cause of these fractures is osteoporosis in the elderly. The mechanism of injury in the elderly is often falls, and in young people road accidents. The risk factors for trochanteric fractures include: osteoporosis, excessive drinking of coffee and alcohol, low body weight, diabetes, and visual disturbances. The main symptoms of a trochanteric fracture include: pain, shortening of the limb, positioning of the lower limb in external rotation in the hip joint. The main diagnostic examination is the radiological image of the hip joint in various projections (lateral, axial, anterior-posterior) [1,2,3,4].

Treatment of a trochanteric fracture may be operative or conservative. The indications for surgical treatment are unstable fractures, i.e. fractures of the Boyd-Griffin classification II, III, IV. The age of the patient is also an important factor. The older the patient is, the more recommended surgery is. The operation consists in adjusting and fusing the bone fragments with a nail plate or a PFN (proximal femoral nail) or Gamma nail. Screw plates (eg DHS slide plate) and Ender's bars are also used [5,6,7,8]. Nonsurgical (functional) treatment is usually used in young people, but also when there are contraindications to surgery. This treatment relieves the hip joint with a lift. The lower limb is then folded up to 30° and abducted up to 30°. The duration of such treatment is 10 to 12 weeks. There is a total ban on limb loading for six weeks. The mortality rate is lower after surgery. In the case of inoperable treatment, there is a risk of complications such as non-union or limb deformation [7,8,9].

The aim of this study was to define a plan of physiotherapeutic treatment in a patient after fixation of a trochanteric fracture with an intramedullary nail.

Materials and methods:

The work was written based on the medical history of a patient with a trochanteric fracture. The entire treatment procedure was carried out at the Department of Orthopedics, Traumatology and Oncology of the Musculoskeletal System, located at

Unii Lubelskiej 1 in Szczecin. In the first stages of treatment, a radiograph was taken

(Figure 1), showing a transtrochanteric fracture.

Figure 1. Radiological image in the A-P projection after trochanteric fracture [own source].

Further management involved intramedullary anastomosis of the fracture. The operation consisted in setting the bone fragments, and then stabilizing them with a special surgical nail inserted into the bone. Additional stabilization was obtained by means of special screws (Figure 2).

Figure 2. Radiological image in the A-P projection after intramedullary anastomosis [own source].

The entire operation was performed under general anesthesia. The patient was instructed to walk with a gradual load, in the early days with the elbow crutches or a four-wheel support, and to perform exercises learned during his stay at the clinic.

Results:

Rehabilitation is an indispensable element in the treatment process of patients after a trochanteric fracture. It is implemented already from 1 day after the surgery in order to activate the patient as soon as possible. The patient described above, during his stay in the hospital, was provided with comprehensive rehabilitation care already in the first day after the operation. On day 1 after the operation, he was vertical. Such a procedure was to ensure faster activation of the patient and to avoid adverse changes resulting from too long immobilization in bed, such as circulatory disorders or edema. In the first days after the surgery, the patient was also recommended to perform anticoagulant exercises (Figure 3). In order to maintain the correct range of motion in the hip joint, assisted exercises were performed (Figure 4).

Stabilization exercises were also included in the rehabilitation process. It was recommended to walk with a gradual load, initially with the belaying of the four-wheeled prop (Figure 5). The rehabilitation program should be as individualized as possible to the patient. After the end of hospital treatment, the patient was self-sufficient enough to be able to perform the necessary daily activities. He was advised to follow medical recommendations, exercise regularly and appear for checkups at the Orthopedic Clinic.

Figure 3. Anticoagulant exercise [own source].

Figure 4. Assisted exercise [own source].

Figure 5. Walk with the protection of a four-wheeled prop [own source].

The later stage of rehabilitation should focus on exercises to strengthen the muscles acting on the hip joint. Stabilization exercises should also be an inseparable element. Examples of exercises are shown in Figures 6-10.

Figure 6. Balance exercise [own source].

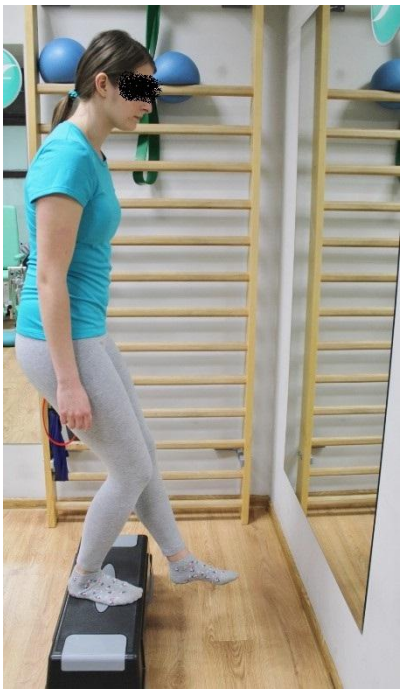

Figure 7 and 8. Stabilization exercises [own source].


Figure 9 and 10. A strengthening exercise [own source].

Discussion

Hip fractures are a very common problem in the elderly. It is a global public health problem due to its frequency and functional consequences. A long recovery period will be associated with a reduced quality of life for patients, as well as a significant increase in health care costs [10]. The aim of this study was to determine the optimal rehabilitation procedure for a patient after an operation involving intramedullary fixation of a transtrochanteric fracture.

According to the latest literature, patient activation should take place on the day after the surgery at the latest. Such a procedure should be implemented in the absence of any contraindications. The rehabilitation plan should be run by a specialized team. Evidence suggests that early rehabilitation is associated with better outcomes and a greater likelihood of returning to functional fitness. However, the available literature lacks detailed recommendations for rehabilitation after a hip fracture [11, 12, 13].

Research shows that the risk of death is more than twice as high among patients not undergoing rehabilitation. Ireland and co-authors in their study demonstrated a 60% reduction in the risk of death after 3 months and 40% within 1 year of hospital discharge in patients who participated in inpatient rehabilitation [14]. Lack of patient activation may also result in serious complications. According to research, a very common problem of patients is difficulties with full load on the operated limb. It is important to include this problem in the rehabilitation process [15].

An important aspect is also the mental condition of patients, which is of particular importance in the treatment process. This underlines the importance of the multi-faceted nature of rehabilitation. In addition, the level of anxiety and motivation of the patient should be taken into account, and professional support and psychological help should be offered [16].

Conclusion

Rehabilitation is an indispensable element in the treatment of patients after a trochanteric fracture. Early initiation of rehabilitation brings tangible benefits during treatment and the patient's return to active participation in social life. Early patient activation reduces the risk of postoperative complications.

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