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# What is the role of a physiotherapist in palliative care? Cases report

## Abstract

Physiotherapy may enhance the quality of life of patients provided with palliative care. In this article the authors present 3 cases of advanced cancer patients, whose symptoms were successfully treated with physiotherapy. In addition, this publication describes individual physiotherapy interventions and how they benefit patients with advanced cancer. The authors proved that physiotherapy applied in patients provided with palliative care is of great importance to the process of symptom treatment. It minimizes complications and effects of the disease and optimizes patients' condition.

**Key words:** physiotherapy, palliative care

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## Introduction

Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual [1]. In this context, physiotherapy is an important part of palliative care. Physiotherapy aims to improve patient's quality of life by helping them to achieve their maximum potential of functional ability and independence or gain relief from distressing symptoms [2].

Palliative care is a rapidly expanding field that also involves physiotherapy. Nowadays, the number of publications concerning physiotherapy intervention in palliative care increases. There is some evidence that rehabilitation intervention improves functional status of palliative care patients. Implementation of a massage and exercise therapy program, respiratory physiotherapy techniques and

modified manual lymphoedema treatment has been assessed in the studies [3–13]. Their authors conclude that physiotherapy intervention helps to maximize patient's functional potential. Moreover, high level of satisfaction with the physiotherapy intervention were observed [13].

In this article we present 3 advanced cancer patients, whose unbearable symptoms were successfully treated with physiotherapy. In addition, this publication describes individual physiotherapy interventions and how they benefit patients with advanced cancer.

## Case report no. 1

An 80-year-old woman was admitted to Palliative Care Unit from Neurology Department in July 2008. In 2007 the patient was diagnosed with advanced breast cancer and was not qualified for curative treatment. She was transferred to Palliative Care Unit in poor general condition, suffering from abdominal pain, metastatic bone and musculoskeletal pain. The symptoms were successfully

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treated with subcutaneous morphine (up to 280 mg/24 h) and transdermal fentanyl (50 µg/h) and, due to metastatic bone pain, 90 mg pamidronate *i.v.* every 4 weeks.

Long-term immobility resulted in musculoskeletal pain which required the implementation of physiotherapy. Thus, the physiotherapist's primary task was to eliminate that pain, as it significantly decreased the level of physical function. The most intensive pain was located in both knees. The range of knee flexion was considerably restricted. Therefore achieving sitting position with legs down was not possible. The treatment started with soft tissue therapy. The physiotherapist employed general myofascial release techniques (MFR). These techniques include special grips stretching the fascia and releasing bonds between fascia, integument, muscles, and bones. The fascia is mobilized, directly or indirectly, to allow the connective tissue fibers to reorganize themselves in a more flexible, functional fashion [14]. After myofascial therapy kinesiology taping was used. Kinesiology taping was developed by the Japanese chiropractor Dr. Kenzo Kase in cooperation with the Japanese company Nitto Denko in the 1970s. In this method we use special tapes, which are modeled on the skin's characteristics and thus able to transmit "positive sensory information" to the body. The goal of the kinesiology taping is not to limit motion but rather to make physiological movement of joints and muscles possible, which in turn activates control and healing. The positive results of kinesiology taping are explained by the improvement of microcirculation, activation of the endogenous analgesic system and support of joint functions [15]. In our patient, we applied tapes on both knees (Figure 1). In addition, chest physical therapy and active exercises were carried out by the patient with the physiotherapist assistance. The aim of these exercises was to prevent accumulation of secretions, improve mobilization and drainage of secretions, promote relaxation to improve breathing patterns and increase the joint range of movement, augmenting muscle forces and improving neuromuscular coordination. In the following days the pain was reduced and the range of knee flexion was significantly improved. We decided to continue myofascial release therapy and kinesiology taping. Later further pain reduction was observed and the range of knee flexion was significantly improved. It allowed to achieve sitting position with legs down. The patient was very satisfied with the effects of physiotherapy. The most important thing for her was to have an opportunity to sit with legs outside the bed. Physiotherapy treatment was continued

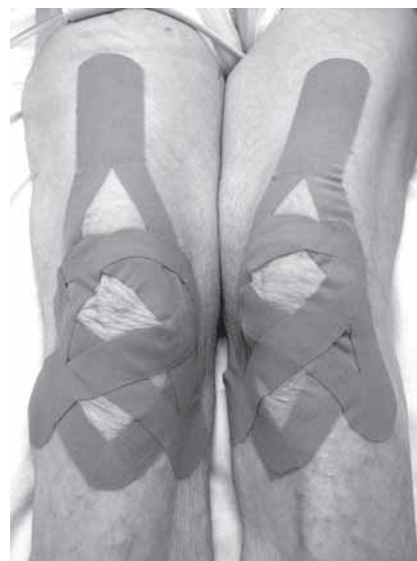


Figure 1. Kinesiology taping application — patient 1

until the patient's death 4 months after her admission to Palliative Care Unit.

## Case report no. 2

A 47-year-old man was admitted to Palliative Care Unit from Urology Department in April 2007. In 2005 the patient was diagnosed with bladder cancer and subsequently treated with a transurethral tumor resection. In 2 following years the patient did not have a contact with a physician. In March 2007 due to double hydronephrosis, double nephrostomy was performed in the Urology Department and advanced cancer spreading abdomen and pelvis was diagnosed. Afterwards the patient was transferred to Palliative Care Unit for further symptom management.

He suffered from lower limbs pitting lymphoedema and abdominal pain. Abdominal pain was successfully treated with long-acting morphine (60 mg a day). Lymphoedema required implementing physiotherapy.

Oedema, with positive Stemmer's sign, was located mostly in the shins. It changed its size during the day. It was bigger in the evenings after the day activity and smaller in the mornings after the night rest with limbs elevation. The skin was dry without hyperkeratosis. The measurement was taken on four levels: C<sub>0</sub> — circumference above ankles, C<sub>1</sub> — circumference below knee, C<sub>2</sub> — circumference above knee and C<sub>3</sub> — circumference below buttock fold.

Lymphoedema was a serious problem for the patient. He complained about feeling a heaviness in the leg and gait problems. Our patients' lymphoedema

was probably caused by progression of the cancer and other concurrent factors related with this stage of disease such as hypoproteinaemia and immobility. It was necessary to begin the lymphoedema treatment. The aim of the therapy was to improve the quality of life through decreasing lymphedema volume and eliminating disturbing symptoms. Therapy started with right limb multi-layer compression shins bandaging, elevation, skin care (white soft paraffin was applied), exercise and chest physical therapy.

Multi-layer compression bandaging consists of four stages. The first stage — bandaging the toes using 5 cm retention bandages. The second — applying a layer of tubular retention bandage. The third — reshaping and protecting the limb using appropriate padding (extra layers were used along the tibial crest and dorsum of the foot). The last stage — applying low stretch bandages. There are two general goals of compression bandaging. The first one is to create a palpable compression gradient from the distal to the proximal end of the extremity. The second one is to create a functional, effective, comfortable, and durable compression environment [16].

Next day the oedema was assessed to reduce by about 30%. The abdomen circumference did not change and diuresis increased. Therefore the physiotherapist decided to use multi-layer bandaging with the left limb as well. The following day right limb oedema reduced by about 40% and the left one by about 30%. Moreover, the patient claimed that the feeling of a heaviness in the legs had gone. During the following days the oedema reduction reached 60% in both limbs. Furthermore, higher level of patient independence and physical activity was achieved.

General condition of the patient was so good that he started to think about going home. The physician discussed the option with the patient and his wife and decided to discharge him from hospital. Therefore, the change of compression was offered (knee-high compression stockings). Unfortunately, economical situation of the patient was so difficult that he could not afford to buy compression stockings. He bought bandage and was trained on self-bandaging. The patient was very happy to be able to return home.

### **Case report no. 3**

A 72-year-old man was admitted to Palliative Care Unit from Orthopedic Rehabilitation Unit in October 2007. In 1992 he was diagnosed with kidney cancer (*carcinoma clarcellulare*). He underwent right nephrectomy and radiotherapy. In following years progression of the cancer was observed (me-

tastasis to the skin, lungs, lymph nodes and adrenal glands). Radiotherapy and hormonotherapy was applied. In August 2007 right thigh bone metastasis tumor was diagnosed. Radiotherapy and chemotherapy was applied. In October 2007 bone tumor resection was performed.

Symptom control and physiotherapy continuation were the main aims of admission patient to our unit. Because the patient's general condition was good it was important to him to regain his maximum potential of functional ability and independence. Reeducation of the gait was very important part of the therapy-plan, because the patient was living alone.

He suffered from bone pain, which was successfully treated with tramadol (150 mg a day).

In the first week, the physiotherapy started with legs isometric exercises, which proved to be an effective method of increasing muscle force. Isometric exercises are safe, they can be used when a limb is immobilized or when the movement might cause bone or joint injury. The second part of the treatment included arms active exercises with resistance. Yellow Thera-Band was used as a source of external resistance. The main goals of these exercises were: increasing muscle force, improving neuromuscular coordination and increasing afferent signals to stimulate motor cortex representation patterns. Between each exercise chest physical therapy was carried out. The last part of the first week therapy-plan included self-repositioning in bed exercises. Frequent change of position is a part of preventing bedsores and muscle wasting.

Next week, balance exercises in standing position were added. They help to build lower extremity muscle strength as well as to improve vestibular system. The patient did not claim the increase of pain while standing. Walker-assisted gait was the next step in the therapy-plan. The patient was instructed how to move with a walker. Every day the walking distance was lengthened. On the last day of the week crutches were ordered in rehabilitation equipment shop. In the third week of therapy, all the exercises were continued. In addition, crutches-assisted gait was practised. First, we trained walking on a flat surface. Then, safe climbing up and down was practised. It was very important for the patient, because in place where he lived, he had to climb up a few steps before getting to the lift. The patient was very satisfied with the effects of physiotherapy. One day he said, he was ready to go home. The physician and physiotherapist did not see any reason why the patient should not have been discharged from hospital. He received home exercise program. The symptoms control was lead by home hospice care.

## Discussion

In the past, rehabilitation was perceived as a treatment, which was to lead to full recovery of a patient. This concept of rehabilitation may seem paradoxical in palliative care, especially for patients with an advanced illness who are approaching death. At present, the purpose of rehabilitation is to improve the quality of life, so that patient life will be as comfortable and productive as possible and he/she will be able to function at a minimum level of dependency regardless of life expectancy [17]. Rehabilitation plays a significant role in palliative care. According to Fulton & Elise, physiotherapy aims to optimize patient's level of physical function and take into consideration the interplay between the physical, psychological, social, and vocational domains of functions [18].

Unfortunately, in professional education programs, little time is devoted to death and dying issues. Moreover, there is a paucity of physical therapy literature to educate, guide and support therapists involved in carrying for patients who are dying [8]. Fortunately, more and more studies, cases reports and review articles concerning physiotherapy in palliative care are appear nowadays.

In this article the authors present 3 advanced cancer patients, whose lymphoedema, musculoskeletal pain and immobilization were successfully treated with physiotherapy. The description of individual physiotherapy interventions shows us the possible role of a physiotherapist in palliative care. In palliative care patients goals of physiotherapy should be realistic and achievable in relatively short time. Physiotherapist must be flexible and able to adapt the appropriate approach even in the patients deteriorating condition.

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