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Respiratory and motor rehabilitation in the patients with chest drainage


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Abstract

Introduction: Chest drainage is a procedure applied in life or health-threatening situations. It is an integral part accompanying patients undergoing thoracic surgery. It allows evacuation from the pleural cavity of pathological fluid, blood, air and perulence.

The patients with chest drainage are struggling with many symptoms, such as pain, feeling of pressure or dyspnoea associated with a given disease entity through movement restrictions, especially on the side affected by drainage. Currently, respiratory and motor rehabilitation is an important part of treatment in patients undergoing thoracic surgery. Breathing and movement exercises and other elements of rehabilitation are of great importance in the whole treatment process, and when applied together, properly and regularly contribute to improvement of patient's health, reduce the risk of complications and improve the comfort of treated person.

The goal of the thesis: The goal of the thesis was to review literature about pulmonary rehabilitation in patients with chest drainage.

Results: Respiratory and motor rehabilitation conducted in the patients with chest drainage has a significant impact on their recovery. Educating patients about postoperative rehabilitation has a beneficial effect on their performance of individual rehabilitation elements.

Key words: Respiratory and motor rehabilitation, chest drainage, thoracic surgery

Chest drainage

Chest drainage consists in introducing a drain through the intercostal space into the pleura. This treatment is one of the most common general and traumatic surgeries performed in the chest area.

The purpose of establishing a pleural cavity drain is to remove air or fluid, fully relax the lungs, remove the outbreak of infection, or monitor the dynamics of bleeding.

Respiratory and motor rehabilitation

Rehabilitation is a complex and long-lasting process that includes therapeutic, pedagogical and social activities aimed at restoring efficiency and human independence [1,2]. Rehabilitation in people suffering from respiratory diseases includes a very wide range of activities and it is an integral part of treatment process. Rehabilitation improves the functioning of the respiratory system and helps in the prevention and treatment of complications [3].

The diaphragmatic path is the basic path in thoracic surgery, which the patient learns already before the procedure. Diaphragmatic breathing involves free and relaxed prolongation of inspiration and exhalation. The exercises are performed in a lying position, with lower extremities bent in hip and knee joints. A patient puts one hand on the chest and the other on the stomach. In the inspiratory phase, the abdominal wall is highlighted, and during the exhalation phase, it is falling. It is recommended for a patient learn to perform an effective cough at the top of the exhale, which is an important element of therapy after the procedure. The best position for this exercise is a forward-leaning sitting position with lowered legs. It is necessary to draw air through the nose so that the abdominal wall is exposed, and then make a deep exhale with the lips. Exhaling the air using this method makes people cough. Another exercise recommended by physiotherapists is lifting the lignin flake with exhaled air. A patient performs a 2-minute cough every 20 minutes regularly throughout the day. [4,5].

After thoracic surgery, the patient should be physically activated as soon as possible. It is very important to implement analgesic therapy, mobilize the patient to perform stretching exercises, effective coughing and walking [3,6].

In addition to the standard analgesic treatment, the postoperative wound stabilization technique can also be helpful. It is recommended to put the opposite hand to the postoperative wound and press strongly. In patients with posterior lateral thoracotomy, the postoperative wound is out of reach of the patient's hand so the help of a physiotherapist or nurse is needed. It is necessary to press postoperative wound from the back with adequate strength, while squeezing the chest at the front of the patient. Applying such methods reduces pain, which intensifies during coughing after surgery [1,4,7].

General improvement exercises are an important element in the first day after surgery. A patient can do them in bed, in a semi-sitting position. The exercises begin from the smallest joints of the lower limbs. The general improvement exercises include those that strengthen the muscles of the lower limbs and gluteal muscles and should end up with patient's verticalization [1,3,4,7].

The patients with chest drainage should perform exercises that increase the mobility of the shoulder girdle. Such exercises can be performed both in bed and in a standing position. It is recommended to stand in a slight straddle and lift both upper limbs during inhalation and lower them while exhaling the air. The patients should perform alternating aspects of the upper limbs upwards, sideways and raising the hand above the head with simultaneous sideways slope. The exercise that can be performed in bed is lying on the non-operated side and raising the hand above the head, in the same position, it is also possible to lift the lower limb. Each exercise should be systematically repeated throughout the day. Self-discipline in performing daily activities is the most important form of rehabilitation. The patients should be encouraged to use the recommended exercises while performing their daily activities. The patients with chest drainage are encouraged to perform as many daily activities as possible on the operated side [4,7,8,9]. Thoracic prophylaxis in

the form of exercises is also recommended after thoracic surgery. It is necessary to perform dorsiflexion of the feet and bending of the lower limbs in the knee and hip joint [4,6].

In a situation where breathing exercises performed by the patient are ineffective for various reasons, a patient can get a breathing device. The most commonly used device applied to support breathing is Triflo, or a bottle with a tube filled with water [4,9].

After removing the drain and discharging the patient from hospital, it is recommended to continue performance of these exercises, both physical and respiratory as part of pulmonary rehabilitation [1,10].

Respiratory and motor rehabilitation has a significant impact on the recovery of patients with chest drainage. Physical exercises have a major impact on a fast recovery of the patients, and performing them incorrectly and rarely contributes to the occurrence of complications. The patients who do not fully implement recommended elements of rehabilitation are more exposed to complications. An important element is adequately education of the patients in the field of rehabilitation after inserting the drain into the pleural cavity.

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