Service Priorities and Programmes

Electronic Presentations

Convention ID: 340
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Enhance patient empowerment on early mobilization after cardio-thoracic surgeries by innovative wheeled chest drain stands

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Keywords:
Patient empowerment on early mobilization
Innovative wheeled chest drain stand
Pulmonary rehabilitation
Patient safety
Patient satisfaction

Introduction

The chest drain insertion is commonly to treat patient having pneumothorax, haemothoraox, empyema and other collections within the pleural cavities. And, having chest drainage system is not a rare condition for those cardiothoracic surgery patients. A chest drainage system involves four components: drainage tubing; a valve (underwater seal or flutter valve); a collection chamber; suction control device (optional). However, over the last four decades chest drainage systems have evolved from reusable, glass, three-bottled units to all-in-one plastic devices. And, 'Atrium' chest drainage system is commonly used in the Department of Cardiothoracic Surgery The chest drainage system has the capacity of 2 liters per drain and it has a build-in handle for patient to carry during mobilize. Thus, patient needs to carry the chest drainage system by holding the build-in handle during ambulation. As a result, it may be too heavy and easily to be dropped down if not holding well for an immediate post-operative patient. Therefore, an innovative wheeled stainless steel chest drainage stand was introduced. Then, enhance patient empowerment on early mobilization after cardio-thoracic surgeries by innovative wheeled chest drain stands can be achieved.

Objectives

With patient empowerment on early mobilization after cardio-thoracic surgeries by innovative wheeled chest drain stands, it will be beneficial in: 1. Early mobilization to enhance the efficiency and effectiveness on pulmonary rehabilitation for these surgical patients 2. Reducing the complications of immobility 3. Reducing the pain as it reduces the traction of the lengthen drainage tubes 4. Increasing patient satisfactory as patients can freely mobilize on his/ her own although chest drains are in-situ 5. Reducing length of stay in hospital that patient can go home earlier

Methodology

A tailor-made wheeled chest drainage stand is innovated for the chest drainage system. And the features of that innovative chest drain stand are as follows: 1. have 4

wheels so that the drainage system can be wheeled in a stabilized manner 2 a T-bar is fixed at the drainage holder to hold the Atrium chest drainage system 3. a basket is used to hold the Atrium to keep the chest drain in a upright position and prevent it from falling down. 4. a hook is designed to fix on the T-bar for holding the pairs of artery forceps. 5. the handle of the stand is built high enough and sharped curvedly in order to facilitate the wheeling of chest drain system by individuals.

Result

With this innovation of the wheeled chest drainage stand, there is less traction from the wound. Therefore, patient will make the early mobilization easily according to her/his own time schedule as patient feels less pain. Since the chest drain can be held upright and in proper position and less risk in falling down,risk of pneumothorax related to improper placement of drainage box will be reduced. And, two or more chest drains can be used as patient can wheel the drainage system rather than holding up 2 liters of fluid per chest drain. Besides, whenever there has any disconnection of chest drainage system, emergency clamping can be performed as two pairs of artery forceps are readily for use over the hook of the innovative wheeled chest drain stand. This helps reduce the risk of complications from immobility and may also allow for an earlier discharge. Therefore, patient satisfaction is increased. Besides, the essential goals in today's healthcare environments to reduce length of stay and hospital costs may also be achieved, too. As a conclusion, there are definite anatomic, physiologic, psychological and economic advantages to the practice of early ambulation by having this innovated wheeled chest drainage stand.