PLEURAL SUCTION ADITIONAL TO THORACOSTOMY TUBE FOR TRAUMATIC HEMOTHORAX

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1 JUSTIFICATION

Hemothorax is a common emergency and is commonly the result of trauma, both blunt and penetrating. Although closed drainage thoracostomy is commonly adequate for the initial management of a hemothorax in most cases, failure of closed thoracostomy and formation of the coagulated hemothorax can occur in up to 5 to 30% of cases.

Therefore, we want to impact through a simple and low-cost procedure such as traumatic hemothorax aspiration in the adult population, prior to insertion and fixation of the thoracostomy tube to evacuate all the hemothorax, thus reducing the formation of clots in these patients and the probability of coagulated hemothorax, therefore acting early on the incidence of this complication so ominous for the prognosis and follow-up in the evolution of the patient

1.1 Problem to intervene

Generation of post-traumatic clotted hemothorax, that usually requires surgical intervention for the evacuation of the hemothorax and pulmonary decortication to resolve lung entrapment.

1.2 HYPOTHESIS

1.2.1 Null:

Adult patients who come to the emergency department with post-traumatic hemothorax have no benefit in reducing the incidence of coagulated hemothorax and / or empiema with aspiration of the hemothorax with Yankauer cannula, prior to insertion of the tube into the chest for closed drainage

1.2.2 Alternating:

Adult patients who come to the emergency department benefit from aspiration of the hemothorax with a Yankauer cannula, prior to insertion of the tube into the chest for closed drainage, in reducing the incidence of coagulated hemothorax and / or empyema

2 OBJECTIVES

2.1 General:

Reduce the incidence of post-traumatic clotted hemothorax in the adult population admitted to the emergency department with traumatic hemothorax, by aspiration with a Yankauer cannula through the insertion hole of the thoracostomy tube prior to its introduction by the surgeon.

2.2 Specific:

- Evidence other complications other than coagulated hemothorax, related to closed thoracostomy
- To determine the specific complications of the operated group in relation to aspiration under sedation of the pleural space
- Microbiological analysis of coagulated hemothorax in the population included in the study that presents this complication

3 METHODOLOGY

3.1 Type of study:

Prospective, randomized, controled

3.2 Target population:

Pablo Tobon Uribe Hospital (HPTU) patients

3.3 Study population:

Patients over 18 years of age, with blunt and / or penetrating chest trauma, who are admitted to the HPTU ER, with documented hemothorax or hemoneumothorax and comply the inclusion and exclusion criteria

3.4 Inclusion criteria:

Patients with a diagnosis of traumatic hemothorax of any origin, who have criteria for performing a closed thoracostomy as part of their treatment, will be included in the study

3.5 Exclusion criteria:

- Any previous surgical procedure in the hemithorax to intervene
- Hemodynamic instability requiring urgent thoracotomy in the patient
- Drawing blood from the chest cavity that defines massive hemothorax
- Outflow of intestinal / gastric material, bile, chyle or saliva from the hemithorax at the time of performing a closed thoracostomy
- Patient who entered the service with a closed thoracostomy performed

- Need for major surgical intervention in the injured hemithorax to perform repair of an intrathoracic injury.
- Contraindication for sedation and moderate analgesia in the emergency department: those patients at risk of complications such as craniofacial malformations, predictors of difficult airways, serious or decompensated heart disease, lung, liver, kidney or central nervous system diseases, morbid obesity, sleep apnea, pregnant women

3.6 Sampling and type of sampling

Taking into account local statistics on the incidence of coagulated hemothorax of 16.7%, with the intention of reducing it to 5%, we need a sample of 125 patients in each arm, that is, approximately 250 patients in total, calculating a loss of patients of 15% in each arm. According to statistical data from the Pablo Tobon Uribe Hospital, in 2015, 148 patients underwent closed thoracostomy, for which a total patient collection time of approximately 20 months is calculated.

3.7 Bias control

3.7.1 Information bias:

The data will be entered in the form intended as interventions are carried out on the patient

3.7.2 Diagnostic bias:

Chest x-ray read by surgeon and urgentologist on duty. A nomogram will be used to measure the amount of blood in the chest and define if it requires a closed thoracostomy

3.7.3 Randomization:

Randomization was made in EPIDAT4.0, defining the sequence of the intervention and non-intervention groups based on the consecutive admission of the patient to the study.

3.8 Collection of information

A direct source consisting of the completion of a form by the professionals in charge of the patient is used, from the moment they enter the emergency department.

The patient and companions will be questioned about trauma situations and possible risk factors

3.9 Data analysis

The form data will be entered in a database of the SPSS program. Analysis of each separate group will be performed and then a comparison based on days of hospitalization, percentage of hemothorax retained, empyema, need for surgery, postoperative pain, reoperation or readmission. Chi2 test to establish statistical significance of these differences, with a bivariate analysis