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Case Study

The Prone Position the Solution in Severe Post Traumatic Acute Respiratory Distress Syndrome Associated to Brain Traumatic Injury: Case Report

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Abstract

The Prone Position must be integrated into the arsenal of care of patients in severe Acute Respiratory Distress Syndrome (ARDS) especially after a thoracic traumatism associated or not to a brain injury. In this situation the refractory hypoxemia can involve the life - threatening of the patient.

Introduction

The Acute Respiratory Distress Syndrome (ARDS) is a common complication in patient with thoracic traumatism, it was caused by a pulmonary contusion. In some situation the ARDS was. severe and in these cases the Prone positioning is the unique solution to improve oxygenation in patients even if they are associated to the traumatic brain injury. In order to illustrate this question, we reported this case.

CASE

The concerned patient is A.A, without any medical history, 23 years old, transferred to medical and surgical emergencies of CHU Oran on October 1st 2017 for a CT scan from a small hospital of a village near Oran in the west of Algeria.

Alerted by the accompanying person for a significant desaturation, the patient was taken over by our team at 19h. Two days ago, the patient was victim of a traffic accident with a 13/15 score on Glasgow Coma Scale, isocoric and reactive pupils, SPO2 value: 96%, blood pressure 12/70. The Brain CT scan showing diffuse cerebral edema associated with a Fracture of the radial lower right extremity and compound type I fracture of the left femur.

Two days after his admission and in front of a significant desaturation, the diagnosis of a fat embolism was mentioned (SPO2 value: 80% associated to the breakdown of the neurogical score wich became at 10/15) so osteosynthesis of the femur was realized, in front of persistence and deepening of hypoxia, the patient is transferred to medical and surgical emergencies for thoracic CT scan.

The team of intensive care decided to intubate and ventilate patient who was in refractory hypoxia at 75% with a FiO2 at 100%. He had a dilated, reactive anisocoria on the left side. BP: 110/70.

The brain CT scan showed a right capsular edematous outbreak measuring 13mm/8mm with the erasure of cortical sulci associated to collapsed ventricle as it is showed in picture n°= 1.

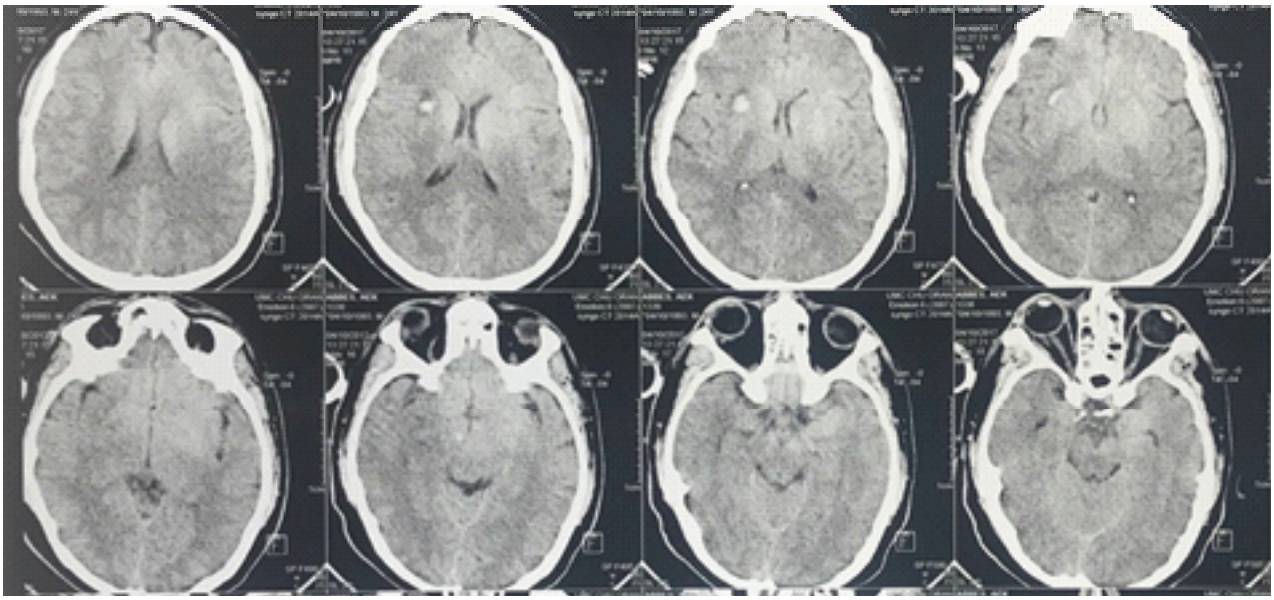

Figure 1: Brain CT scan.

Thoracic CT scan revealed: many diffuses parenchymal condensations outbreak with damaging of the right lung (Figure 2).

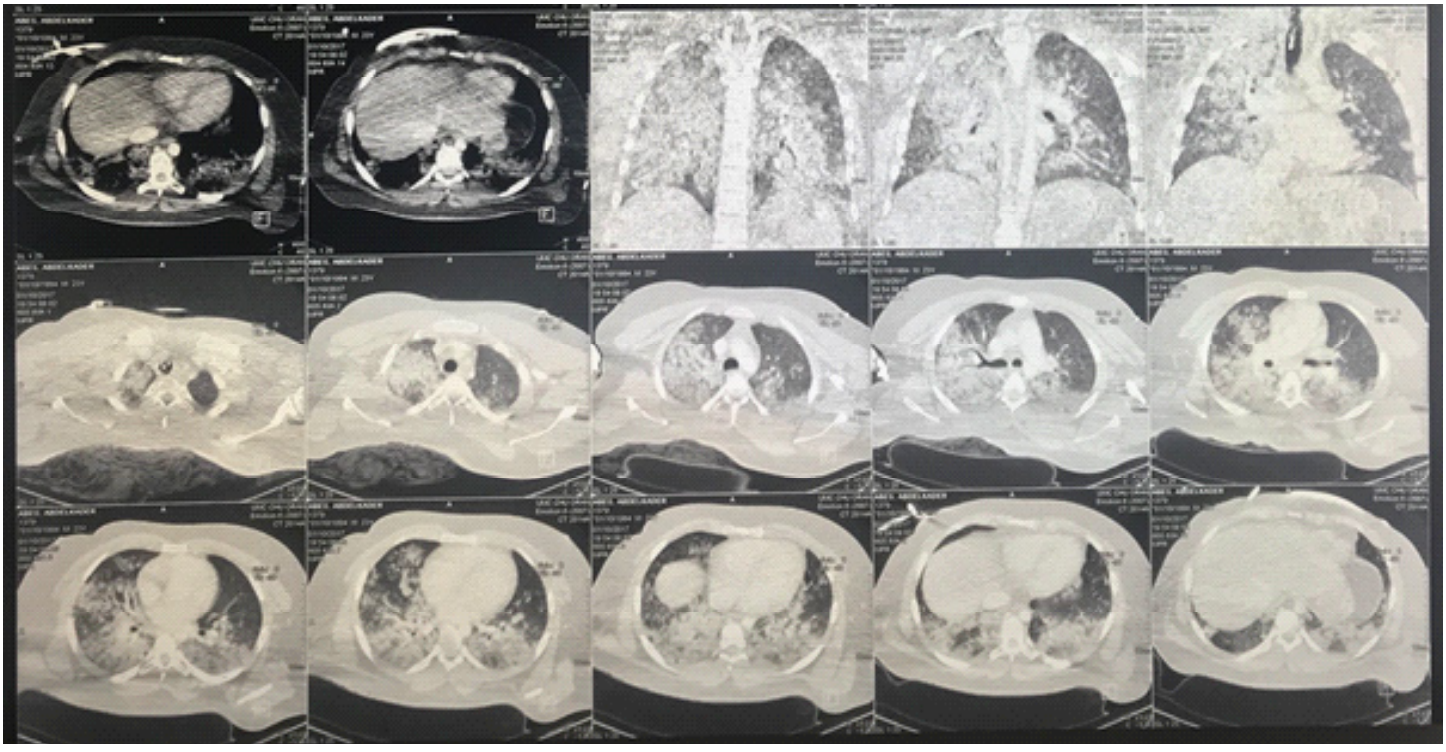

Figure 2: The thoracic CT scan.

Although the curarization and the Peak End Respiratory Pressure at 12, the patient is still hypoxic with SPO2 at 80%.

The decision of a ventilation in a prone position was taken: we noticed a spectacular improvement of the oxygenation and decrease of FiO2 at 60% after four hours.

The next day, the blood gas: PaO2/FiO2 at 60%. The protocol established was sedation with Hypnovel (8mg per hour) and Fentayl (100 micrograms per hour), the patient benefited from a ventilation in prone position for 18hours/day for one week. In the 10th Day, Osteosynthesis of the radius fracture was realized. Three days after the brain CT scan checkup showed a decrease of brain damage illustrated by (Figure 3), as well as a spectacular evolution of pulmonary images (Figures 3 and 4).

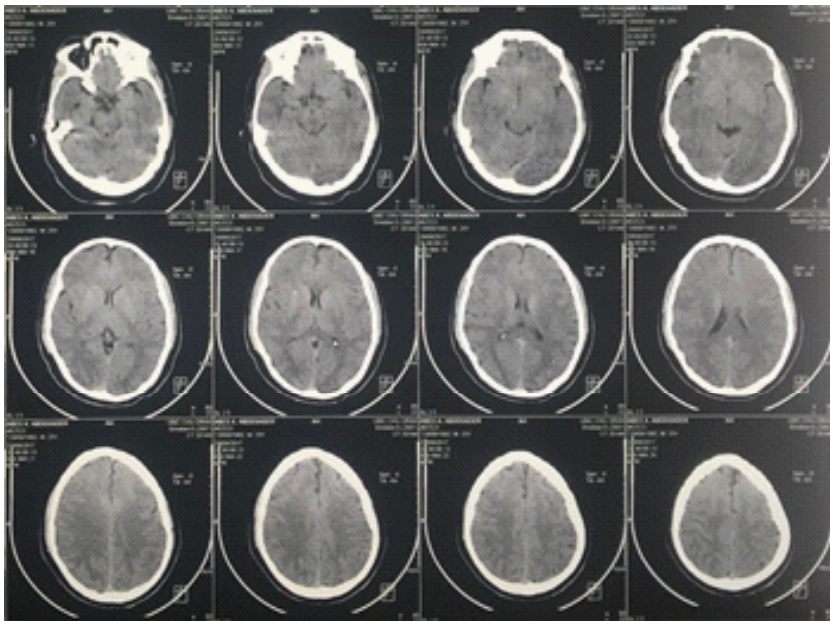

Figure 3: The brain CT scan evolution.

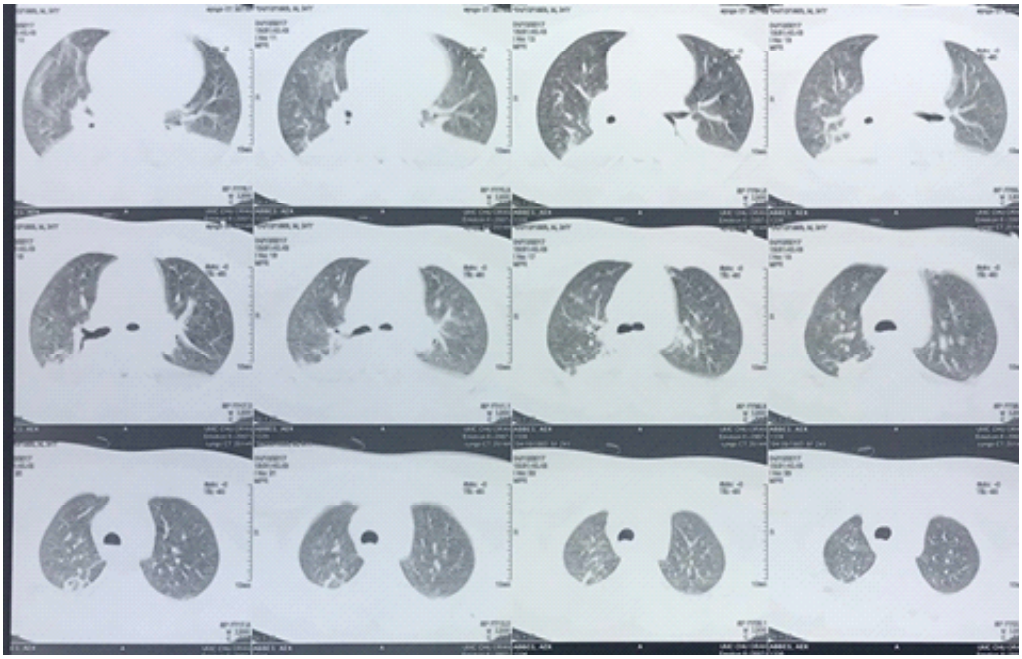

Figure 4: The brain CT scan evolution.

A tracheostomy was established in the seventeenth day of hospitalization. Improvement was very succeful for the patient. He is wean from the ventilator at the twenty second day and he lefted at the twenty six. The patient regains his normal activity and starts working back, he travelled to turkey in June 2019.

Discussion

Prone positioning improve oxygenation and could prevent ventilator-induced lung injury [1-5]. In several previous trials, these physiological benefits did not translate into better patient outcomes, since no significant improvement was observed in patient survival with prone positioning. Claude Guérin and his collaborators have done a multicenter, prospective, randomized, controlled trial, we randomly as- signed 466 patients with severe ARDS to undergo prone-positioning sessions of at least 16 hours or to be left in the supine position. This study had showed the benefits of prone position in Severe ARDS.

In the last years all the guidelines of many learned society have done the prone position strongly in favor. This therapeutic option had contraindication like the brain hypertension, in this case, we have to monitor the brain pressure when it's possible and we will take decision to practice it or not. Every patient is different and we have to consider the risk of severity hypoxemia compared to the complications of traumatic brain injury.

References

1. Broccard A, Shapiro RS, Schmitz LL, Adams AB, Nahum A, et al. (2000) Prone positioning attenuates and redistributes ventilator-induced lung injury in dogs. Crit Care Med 28: 295-303.

2. Mentzelopoulos SD, Roussos C, Zaky- nthinos SG (2005) Prone position reduces lung stress and strain in severe acute respira- tory distress syndrome. Eur Respir J 25: 534-544.

3. Galiatsou E, Kostanti E, Svarna E, Kitsakos A, Koulouras V, et al. (2006) Prone position augments recruitment and prevents alveolar overinflation in acute lung injury. Am J Respir Crit Care Med 174: 187-197.

4. Papazian L, Gainnier M, Marin V, Donati S, Arnal J, et al. (2005) Comparison of prone positioning and high-frequency oscillatory ventilation in patients with acute respiratory distress syndrome. Crit Care Med 33: 2162-2171.

5. Claude Guérin, Jean Reignier, Jean-Christophe Richard, Pascal Beuret, Arnaud Gacouin, et al. (2013) Prone Positioning in Severe Acute Respiratory Distress Syndrome the new England journal of medicine 368:2159-2168.