

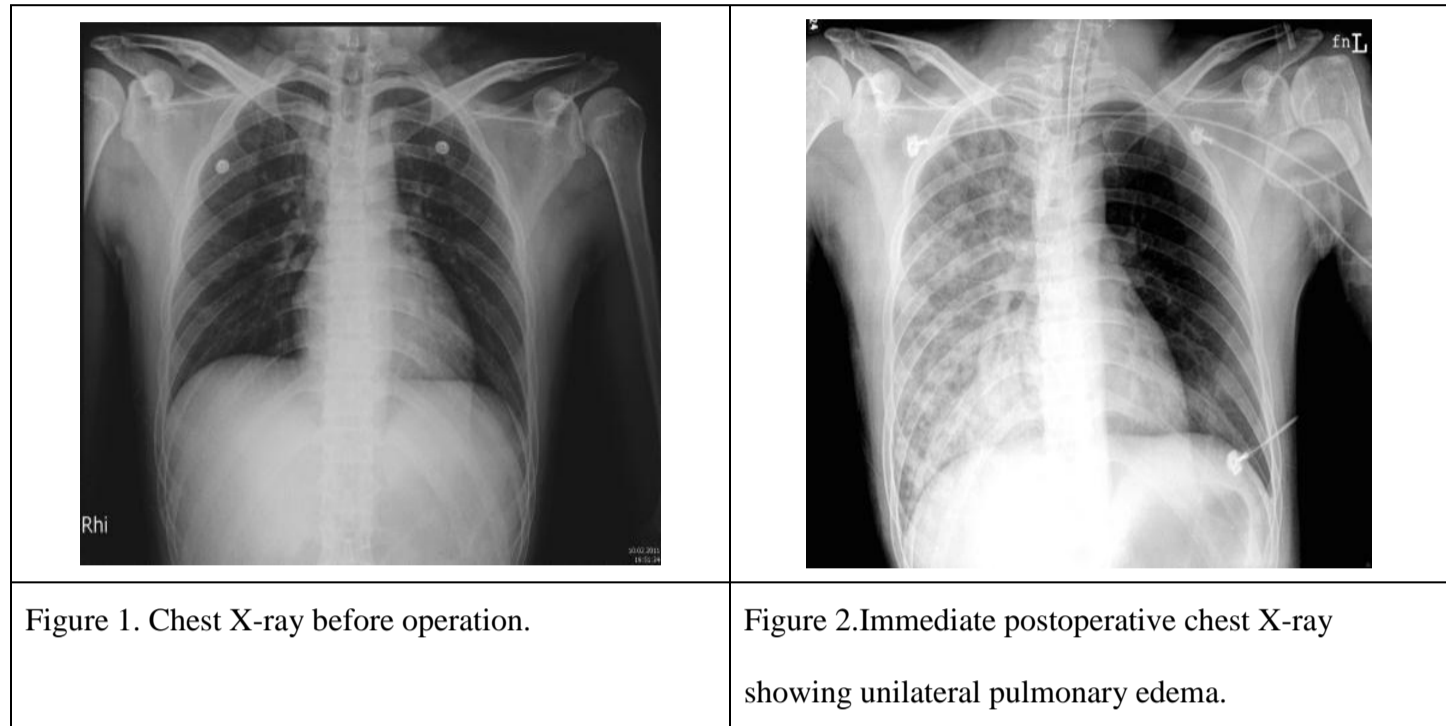
Unintentional acute unilateral pulmonary edema- a case report

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Report of a case: This 21 year-old man without remarkable medical history was sent to our ER after traffic accident where chest X-ray revealed normal heart contour, increased infiltration over right lung field, right 5th and 6th ribs fracture (Figure 1).

On the following day, the patient received elective surgery for ORIF with interlocking nail for right femoral shaft fracture under general anesthesia with endotracheal intubation.

During emergence, patient regained spontaneous ventilation but was irritable and began to cough and clench his teeth upon the endotracheal tube. Then tachypnea and acute desaturation happened. SpO₂ decreased to 84% under FiO₂ 100% . Then massive pink, frothy sputum was noted from the endotracheal tube. We sedated the patient with intravenous propofol 60mg and thoroughly suctioned the endotracheal tube. Beside massive pink, frothy sputum, there was no food or bile content. Under positive pressure ventilation with FiO₂ 100% oxygen, SpO₂ was around



86%-94%. Arterial blood gas revealed pH:7.29, pCO₂:41.7mmHg, pO₂:126mmHg, HCO₃:20.6mmol/L, BE:-4.9mmol/L, SaO₂:98.7%. Respiratory auscultation found diffused wheezing and rales. Follow-up chest X-ray revealed diffused opacifications over right lung with air bronchogram which corresponded to unilateral right-sided pulmonary edema (Figure 2).

After diuretic, analgesic and sedative treatment, concomitant with mechanical ventilation with positive end-expiratory pressure, the clinical symptoms/signs and follow-up chest X-ray taken 7 hours after the event dramatically improved (Figure 3). Complete resolution of the pulmonary edema occurred within 34 hours (Figure 4) and the patient was extubated without any uneventful sequelae.

Discussion:

Unilateral negative pressure pulmonary edema has previously been described in unrecognized bronchial intubation, unilateral airway obstruction/stenosis, and in the dependent lung. In this case, when the patient bit against the endotracheal tube, negative intrathoracic pressure was generated. Together with increased permeability after trauma, unilateral negative pressure pulmonary edema could occur in the injured lung.

