*Letter to Editor*

# Malfunction of an Anesthesia Machine with Decoupling Valve

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## ARTICLE INFO

A 65 years' woman was admitted in the operating room for discectomy surgery. The laboratory tests were normal, BP: 150/90, HR: 85; O2 Sat 95% in room air, with a history of hypertension, treated with losartan, with a normal ejection fraction. After admitting the patient, routine monitoring was established. The anesthesia machine was checked before anesthesia and the circuit system was connected correctly.

The induction of anesthesia was started with 2 mg midazolam, 150 microgram fentanyl, 100 mg propofol and 50 mg atracurium and then the patient was intubated. The hemodynamic parameters were normal and the mechanical ventilation was started with the anesthesia machine (Drager Fabius) in normal manner. Three minutes after intubation, the patient was disconnected from the ventilator, turned from supine position to the prone position and reconnected to the ventilator for mechanical ventilation.

We noticed that the ventilator did not work promptly; the airway pressure was increasing and the bag was empty. The tracheal tube was disconnected from the anesthesia machine; the patient was ventilated with ambu-bag. The ventilation with ambu-bag was normal. The inspiratory and expiratory limb of the anesthesia system were disconnected and reconnected. We noticed a kinking in the hose connecting the ventilator chamber to the airway pressure release valve. This problem was solved. The tracheal tube was reconnected to the anesthesia machine; the anesthesia machine in this time worked properly. Afterwards, the anesthesia and surgery continued uneventfully.

The role of the decoupling valve in the Fabius Anesthesia machine is to offer an exact delivery tidal volume to the patient unaffected by increasing the rate of fresh gas flow. During the inspiratory phase of ventilation, the valve closes, permitting only gas from the ventilator piston chamber to be delivered through the inspiratory valve to the patient. During the expiratory phase, the valve opens, permitting the ventilator piston chamber to fill with a mixture of the exhaled gas that has passed through the absorber and fresh gas [1]. A hose connecting the ventilator chamber to the airway pressure release valve serves for this function. This tube is very thin and can be damaged or disconnected or be kinking and these events may lead to malfunction of the anesthesia machine. Fortunately, in the new model of Dragger machine, this tube is not accessible, so the possibility of these malfunctions are decreased [2-3].

New machines have removed many problems associated with older machines. However, addition of several mechanical apparatuses increase the possibility of some of events such as leak or obstruction [4].

### References

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