Peer Review File
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Reviewer A

Comment 1: Although the authors used "pulmonary hypertensive crisis" in the title, this term is usually used for children with congenital heart disease. The authors should not use this term for this patient.
Reply 1: We modified our text as advised (see page 1, line 1-2).
Changes in the text: Veno-Venous Extracorporeal Membrane Oxygenation Rescue for Pulmonary Hypertension and Hypoxemic Respiratory Failure to Obesity Hypoventilation Syndrome: A Case Report.

Comment 2: In Introduction, the authors cited a case report that was quite similar to this article (reference number 10). What is the new and different point from this case report? Case presentation and Discussion need to be rewritten in a way that focuses on those points.
Reply 2: Our study, unlike reference 10, right side heart failure and pulmonary hypertension documented by echocardiography (see page 4, line 94-99, and figure 1). After the patient recovery, echocardiography showed that right ventricular dysfunction was restored (see page 5, line 129-130).
In our case, worse oxygen status and hemodynamic instability were observed. We added vital signs at hypoxemic respiratory failure (see page 5, line 110-112).
Changes in the text: Mean arterial pressure was decreased to 50 mmHg and patient required infusion of norepinephrine at 0.3 mcg/kg/minute.

Comment 3: With arterial blood gas analysis, the values of SpO2 cannot be obtained, change to SaO2 is required.
Reply 3: We modified our text as advised (see page 4, line 91 and 107/ page 5, line 132).
Changes in the text: SpO2 has been replaced by SaO2.

Comment 4: What was the diagnosis of this patient? It is not exactly stated. It seemed that this patient had right heart failure due to pulmonary hypertension, which was caused by obesity hypoventilation syndrome (OHS). Is this correct? And did this patient also have left heart failure, especially diastolic dysfunction, due to dilated right ventricle and septal shift?
Reply 4: Your opinion is correct.
We added text based on your recommendation (see page 4, line 101-102).
Diastolic function added as your advised (see page 4, line 94-97).
Changes in the text: We diagnosed a patient with OHS, leading to PH with right heart failure and acute respiratory failure (see page 4, line 101-102). Two-dimensional transthoracic echocardiography (TTE) revealed preserved left ventricular systolic function (left ventricular ejection fraction [LVEF], 70%), and impaired relaxation with ratio between peak early mitral inflow velocity and late mitral diastolic velocity (E/A) of 0.74 (see page 4, line 94-97).

Comment 5: It had been reported that continuous positive airway pressure (CPAP) or noninvasive ventilation (NIV) improved clinical symptoms with OHS. Why did the authors choose high flow nasal cannula instead of CPAP or NIV?

Reply 5: At the time, we did not have properly fitted mask or helmet. The patient' respiratory distress rapidly worsened, and intubation was decided. NIV was applied immediately after endotracheal extubation (see page 4-5, line 103-110/ 130-131).
Changes in the text: To overcome hypoxemic respiratory failure without an appropriate non-invasive ventilation (NIV) mask of helmet, a high-setting airflow of 60 L/min and a fraction of inspired oxygen (FiO2) of 80% were applied using a high-flow nasal cannula (HFNC; AIRVO2, Fisher & Paykel Healthcare, Auckland, New Zealand).

Comment 6: The setting of the mechanical ventilation was not mentioned. During invasive mechanical ventilation, patients with obesity are more prone to lung collapse and require higher PEEP to avoid it. How much PEEP did you apply? Have you made any efforts to set up an appropriate PEEP?
Reply 6: We modified our text as advised (see page 4-5, line 108-110).
Changes in the text: He was intubated, and mechanical ventilation was applied with a tidal volume of 420 mL (6 mL/kg of predicted body weight) and positive end expiratory pressure (PEEP) of 12 cmH2O.

Comment 7: Details of VV-ECMO were not mentioned. What was the configuration of ECMO? And what was the first setting?
Reply 7: We modified our text as advised (see page 5, line 113-117).
Changes in the text: An ECMO system (Capiox Emergency Bypass System, EBS; Terumo Inc.) was performed with a 21-French drainage cannula through left femoral vein and a same sized return cannula was inserted through right femoral vein into right atrium. The initial settings of ECMO was started at a flow 4 L/kg/min, speed of 2600 rotations/min, FiO2 of 100%, and sweep gas flow of 4 L/min.

Comment 8: A more detailed description of diuretics and nutritional controls is required. How much of a negative balance did you target? How much calorie target did you set?
Reply 8: We modified our text as advised (see page 5, line 119-122).
Changes in the text: During ECMO period, a net fluid balance of -10050 mL was achieved and less than 1500 calories per day were supplied by parenteral and enteral nutrition.

Comment 9: The case presentation should be described chronologically. The authors need to mention the weight loss during ECMO period before talking about ECMO weaning. And the decrease of BMI during four weeks of hospitalization should be mentioned after the description of endotracheal removal on day 26.
Reply 9: We modified our text as advised (see page 5, line 119-124).
Changes in the text: During ECMO period, a net fluid balance of -10050 mL was achieved and less than 1500 calories per day were supplied by parenteral and enteral nutrition. ECMO was successfully weaned on day 19. On day 26, the endotracheal tube was removed, and nocturnal non-invasive ventilation (NIV) was started. After four weeks of hospitalization, the BMI steadily decreased from 42 kg/m^2 to 32 kg/m^2.

Comment 10: What did the authors want to say with the result of the pulmonary function test?
Reply 10: Although the patient had recovered transient severe pulmonary hypertension, restrictive pattern and decreased DLCO on PFT might suggest a risk of recurrent event. Thus, we would like to suggest the need for long-term NIV treatment and weight control.
Changes in the text: No change

Reviewer B

Comment 1: The indication for treatment with ECMO or the need for IOT is not clear, since at no time has there been respiratory acidemia, nor is it clearly stated that a treatment with non-invasive ventilation has been attempted, which would be the most indicated from my point of view.

Reply 1:

At the time, we did not have properly fitted mask or helmet. The patient' respiratory distress rapidly worsened, and intubation was decided. We modified our text as advised (see page 4-5, line 103-110).

After invasive mechanical ventilation, hypoxemia and hypotension steadily worsened to determine ECMO. VAV ECMO was not necessary because blood pressure gradually improved after VV ECMO.

We modified our text as advised (see page 5, line 110-113).

Changes in the text: To overcome hypoxemic respiratory failure without an appropriate non-invasive ventilation (NIV) mask of helmet, a high-setting airflow of 60 L/min and a fraction of inspired oxygen (FiO2) of 80% were applied using a high-flow nasal cannula (HFNC; AIRVO2, Fisher & Paykel Healthcare, Auckland, New Zealand). The ABGA showed a pH of 7.35, PaCO2 of 84 mmHg, PaO2 of 67 mmHg, and SaO2 of 91% in the HFNC situation. He complained of rapidly worsening dyspnea and exhibited respiratory distress. He was intubated, and mechanical ventilation was applied with a tidal volume of 420 mL (6 mL/kg of predicted body weight) and positive end expiratory pressure (PEEP) of 12 cmH2O.

On the first hospital day, PaCO2 of 60 mmHg and PaO2 of 48 mmHg were observed for a FiO2 of 100%. Mean arterial pressure was decreased to 50 mmHg and patient required infusion of norepinephrine at 0.3 mcg/kg/minute. Extracorporeal life support with VV-ECMO was performed.

Comment 2: There is a very marked variation in weight in a very short space of time that leads me to think that it is a volume overload (probably diastolic heart failure). This point deserves some comment by the authors.

Reply 2: Diastolic function added in out text (see page 4, line 94-97).

We modified our text as advised (see page 5, line 119-122).

Changes in the text:

Two-dimensional transthoracic echocardiography (TTE) revealed preserved left ventricular systolic function (left ventricular ejection fraction [LVEF], 70%), and impaired relaxation with ratio between peak early mitral inflow velocity and late mitral diastolic velocity (E/A) of 0.74. During ECMO period, a net fluid balance of -10050 mL was achieved and less than 1500 calories per day were supplied by parenteral and enteral nutrition.

Comment 3: I think that categorizing a DLCO of 59 ml/min/mmHg as decreased is probably a typographical error. I suggest reviewing it or providing the anthropometric measurements of the patient and the theoretical value of DLCO.

Reply 3: It was typographical error. We modified our text as advised (see page 5, line 125-126).

Changes in the text: At resting condition, pulmonary function tests showed a reduced diffusing capacity of the lungs for carbon monoxide (DLCO) of 59 % with a mild restrictive

pattern.