

USE OF THE VAPOTHERM WITH TRANSTRACHEAL SCOOP PATIENT – CASE STUDY

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Introduction: This abstract describes the use of Vapotherm 2000i with the SCOOP Transtracheal Oxygen System. The Vapotherm 2000i is a high flow therapy system that can deliver warmed and humidified oxygen-enriched air at flow rates of up to 40 lpm through a variety of patient interfaces. **Case Study:** A 65-yr old female with idiopathic obliterative bronchiolitis was admitted to our facility with community-acquired pneumonia, associated with increased mucous production and declining oxygen saturation (SaO₂%). Her course was complicated by atrial fibrillation, which required aggressive medical therapy. At home, this patient uses 1 to 6 LPM supplemental oxygen via SCOOP catheter using heated humidity, provided by a Fisher Paykel HC500 humidification system. This device normally keeps her SaO₂% in the 90-98% range. The SCOOP catheter had been placed in the patient approximately 1.5 years prior to this admission due to resting hypoxemia, and declining physical endurance. After insertion of SCOOP catheter the patient was able to significantly increase her physical activity. During this admission, her SCOOP was connected to a Vapotherm at 10 LPM, 100% FiO₂ along with a nasal cannula (NC) at 6 lpm. The Vapotherm was set to 37°C. While on admission her resting oxygenation was as low as 60%, after introducing Vapotherm system it climbed to the upper 90's. During the first few days the patient required both oxygen supplementation modalities to maintain SaO₂% in the 90's. After 3 days of hospitalization, the 6 LPM NC was discontinued leaving the patient on the Vapotherm at 10 LPM on 100% FiO₂. The 6 LPM NC was re-instituted for walking. FiO₂ titration was started on Day 7 of admission. On Day 12 when the patient could be maintained at a consistent FiO₂ of 50%, the Vapotherm was discontinued, and the patient was placed back on 6 LPM of oxygen via SCOOP catheter. The patient was discharged to home after 13 days of hospitalization. **Discussion:** SCOOP systems bypass the upper airway therefore gases should be warmed and humidified to BTPS. The Vapotherm system can be connected to a SCOOP catheter to provide breathing gas that has been treated to approach BTPS. This patient's course required aggressive use of supplemental oxygen therapy to maintain acceptable SaO₂%. Using Vapotherm therapy via SCOOP catheter made it possible to satisfy very high oxygen requirement in this patient. This, in combination with the decrease in the work of breathing using high-flow intratracheal gas delivery system was likely the reason why endotracheal intubation and mechanical ventilation was avoided in this patient. We feel the Vapotherm can be successfully applied to SCOOP Transtracheal Oxygen catheters to warm and humidify supplemental gas.

OF-05-053