

**RESPIRATORY INSUFFICIENCY FOLLOWING LUNG BIOPSY AND WEDGE RESECTION: UNIQUE \*PATIENT'S PERSPECTIVE CASE REPORT OF HIGH FLOW THERAPY WITH NASAL CANNULA.** Caroline Panichello, CRT\*; John J Hill, RRT; Michael J Neary, MD; Marivi Ora, MD; David M.F. Murphy, MD; DEBORAH Heart & Lung Center, Browns Mills, NJ

**Introduction:** Lung surgery, even minor, can lead to respiratory complications. In this case we discuss an episode whereby a patient post lung biopsy and wedge resection manifested to respiratory insufficiency poorly responsive to conventional oxygen therapy. Clinical improvement subsequently occurred using high flow therapy (HFT) by nasal cannula (NC). **Case report:** 45year old female seen for evaluation of abnormal Chest Radiograph (CXR). CXR revealed a low-density 8mm nodule in the right upper lung field overlying the anterior aspect of the right third rib. A Computed Tomography (CT) scan revealed a well defined, 6 mm nodule in the periphery of left lung at the level of the aortic valve and a 7mm nodule in the periphery of the right lung at the left of the bronchus intermedius. Less well defined pulmonary nodules were also seen in the lower lung fields. PPD was negative. Histoplasma and Coccidia serology tests were negative. CXR showed an oval density in the right upper lung field slightly larger compared to a previous CXR. CT scans showed the density in right upper lung field had increased in size and there is an additional nodule just above this density, which measures 7mm in diameter. The other nodules are unchanged. Final diagnosis: Enlarging nodule right lung and multiple pulmonary nodules. A video assisted thoracoscopic lung biopsy with wedge resection was performed. Postoperative CXR revealed blunting of each costophrenic angle and patchy density at the base of each lung. Post op day one there was blunting of the left costophrenic angle and the same patchy density on the right. Post op Arterial Blood Gas (ABG) on 4 LPM NC reveal pH 7.33, Pco<sub>2</sub> 40.9, PaO<sub>2</sub> 72.9, SaO<sub>2</sub>% 93.5. Patient placed on a Non-Rebreather (NRB) + NC at 6 LPM, ABG revealed pH 7.36, PaCO<sub>2</sub> 37.2, PaO<sub>2</sub> 60.3, and SaO<sub>2</sub>% 88 Bilevel support was considered. Instead of bilevel ventilation, HFT with NC (Vapotherm 2000I, Stevensville, MD) was started at 100% FiO<sub>2</sub>, and 30 LPM, SpO<sub>2</sub>% increased from 88% to 96% and RR dropped from 27 bpm to 21 bpm within minutes. Subsequent CXR revealed better aeration of the lung bases than the previous day; 5 hours post HFT with NC. **Discussion:** HFT with NC produced rapid improved re-saturation of SpO<sub>2</sub>%. This may be the result of gas filling the nasopharynx, the existence of small levels of end expiratory pressure created as the patient exhaled against the 30-LPM gas flow combined with the resistance offered by upper airway anatomy. **Conclusion:** In this case HFT with NC proved useful in a patient during respiratory insufficiency following chest surgery. The patient recalls that the NRB + 6-lpm NC was loud and uncomfortable. Upon switching to the HFT with NC, there was immediate comfort it was quieter and the humidified gas was much more pleasant. HFT with NC offers a comfortable and effective method to support patients with respiratory insufficiency.

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