Letters

Palliative Management of Stridor in a Head and Neck Cancer Patient With Noninvasive Ventilation: Is It Safe?

Dear Editor,

We read with interest the article by Lee et al. reporting the use of continuous positive airway pressure (CPAP) as a means of noninvasive ventilation in the palliative management of stridor at the end of life in a patient with head and neck cancer.[1]

Noninvasive ventilation (NIV) is commonly used to improve ventilation and oxygenation and to avoid endotracheal intubation and mechanical ventilation. There are several advantages of NIV over endotracheal intubation and invasive ventilation, including fewer incidences of nosocomial pneumonia and laryngeal stenosis, as well as a decrease in the length of hospital stay and even mortality.[2,3]

The major indications of NIV are the treatment of acute exacerbations of patients with chronic obstructive pulmonary disease or as an auxiliary method in their weaning from invasive ventilation, acute cardiogenic pulmonary edema, and lung infection resulting in respiratory failure in immunosuppressed patients. In addition, NIV can also help in hypoxemic respiratory failure, in the prevention of post-extubation respiratory failure, and in selected cases of acute asthmatic attacks.[2] As the indications for NIV have expanded, it has become a means of providing respiratory support to patients who are not candidates for intubation.[3]

Head and neck cancers are categorized among the top 10 malignancies globally. These cancers include cancer of the upper aerodigestive tract, paranasal sinuses, and thyroid and salivary glands. The incidence of difficult airways in head and neck cancer is higher than in the general population. Prior treatment using radiotherapy results in a "fibrotic airway" associated with woody, noncompliant tissue, which may make both face mask ventilation and laryngoscopy difficult. Thus, exploring the use of NIV in people with these cancers is an important and interesting concept for various reasons.[2]

However, we consider that the authors need to consider some key aspects and proceed with caution especially in this patient population. First, a significant proportion of these patients present with difficult airways requiring a range of advanced airway management techniques.[2] Although the use of NIV may potentially splint the upper airways, the inspiratory pressure required to overcome the airway obstruction could lead to unpleasant and painful iatrogenic interface-related complications such as facial pressure ulcers.[4]

Second, tumor hemorrhage and bleeding are reported to occur frequently in patients with advanced head and neck cancer.[5] High pressure from the lower mask strap can sometimes provoke or aggravate upper airway obstruction by pushing the lower jaw backward.[3] Therefore, this begs to question the safety of the application of NIV in these patients.

Third, the facemask interface though often used for patients with dyspnea in the acute setting poses potential challenges at the end of life. Owing to its position over the mouth, the patients may not be able to effectively communicate with their loved ones at the end of life. In addition, NIV may be uncomfortable and could cause undesirable side effects, such as skin lesions, irritation of the eyes, abdominal bloating, and in rare cases, barotraumatic events.

Finally, the use of sedative medications during application of the NIV interface remains controversial. This is due to the perceived risks of interfering with the ability to protect the airway or depressing respiratory drive.[4] Unfortunately, this is unavoidable in the patient with end-stage cancer. Sedation use may lead to an altered mental state and predispose to aspiration events. Thus, any palliative ventilation intervention needs to be discussed with patients, whenever possible, or their relatives.

Overall, the authors have highlighted a very important issue; however, additional studies are needed to further explore the safety of NIV in patients with head and neck cancer.

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Authors' Response to Palliative Management of Stridor in a Head and Neck Cancer Patient With Noninvasive Ventilation: Is It Safe?

Dear Editor:

We like to thank Obi et al.[1] for their response to our article "The use of continuous positive airway pressure ventilation in the palliative management of stridor in a head and neck cancer patient."[2] We are delighted that she has taken interest in the letter, and we appreciate the time and effort she has put into formulating key principles to aid in the usage of noninvasive ventilation, especially in this vulnerable group of palliative care patients.

We summarize the key areas of consideration she has pointed out:

1. Interface-related complications (pressure-induced ulcers and pain from masks, barotrauma, and bloating).
2. Upper airway obstruction because of lower jaw retropulsion.
3. Barrierlimited meaningful communication with loved ones.

We had proposed mitigating measures to overcome the aforementioned limitations that included the following:

1. The use of barrier creams to reduce interface-related complications.
2. Intermittent breaks from continuous positive airway pressure (CPAP) mask, which may allow time for perfusion of at-risk skin.
3. Ensuring proper mask fitting to reduce leaks and eye irritation.
4. Head and neck positioning while on CPAP (sniffing the morning air position).
5. Using the minimum pressure required for alleviation of symptoms.

Nonetheless, should patients started on CPAP be found unsuitable for continuation of therapy because of unbearable side effects or unacceptable risks, therapy should be ceased immediately.

Ultimately, we recognize that there are many limitations regarding the usage of CPAP ventilation. The patient who initially inspired the first letter benefitted from the use of CPAP after having failed mainstream management strategies of terminal asphyxiation such as the use of opioids and sedatives. Palliative ventilation intervention should be considered only if patients fail conventional therapy and its use is in line with the goals of patients and their family.

Overall, additional studies are needed to further explore the safety of noninvasive ventilation in patients with head and neck cancers at the end of life.

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