
Should Patients With Posterior Nasal Packing Require ICU Admission?

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BACKGROUND

Ten percent of all episodes of epistaxis occur in the posterior nose, making posterior epistaxis a commonly encountered emergency for both emergency department physicians and otolaryngologists.¹ Severe idiopathic non-traumatic posterior nasal epistaxis is an otolaryngologic emergency that occurs primarily in middle aged and elderly individuals who often have underlying chronic cardiac and respiratory comorbidities. Sudden unexplained deaths have been reported with posterior nasal packing as well as respiratory distress, hypoxia, cardiac dysrhythmias, myocardial infarction, and cerebral ischemia. Once the bleeding has been controlled with posterior packing, the decision of where to admit the patient for observation must be made. Because of the above complications, debate remains as to whether patients with posterior nasal packing require intensive care unit (ICU) monitoring.

LITERATURE REVIEW

Overall, there is a lack of data exploring this specific question. Most studies in the literature addressing this question deal primarily with treatment options relating to posterior epistaxis. Secondary conclusions from some studies report hospital admission criteria for patients with posterior nasal packing. In a retrospective study, Monte et al.² studied the records of 46 patients who had been admitted with posterior nasal packing to control epistaxis. Some of their reported criteria, in terms of addressing our question, were monitoring methods, oxygen administration, concomitant medical conditions including hypertension, coronary artery disease, renal disease, pulmonary disease, morbid obesity, arrhythmias, and smoking and alcohol history. They reported that six patients (13%) were admitted to the

ICU, two (4%) were admitted to a monitored floor, and 38 (83%) were admitted to the ear, nose, and throat (ENT) ward. Of note, six patients (16%) of those admitted to the ENT ward had continuous pulse oximetry, seven patients (18%) had spot checks, and the other 25 (66%) had no oxygen monitoring. Unclear in the article is the physician's judgment used to admit the patient to a particular ward. They did note that because it was a retrospective study, and they could not randomize the patients to different wards. Thus, patients with more medical comorbidities were likely to be admitted to more closely monitored wards. They concluded that admission to the ENT floor did not have an increase in complications, and proposed that most patients with posterior nasal packing should be admitted to the ENT floor with continuous oximetry, selectively admitting some patients to higher levels of care.

In a review article, Middleton³ described management following posterior nasal packing. Besides admitting all patients with posterior nasal packs, the author also described how uncomfortable the posterior nasal packs were, so that patients required sedation with intravenous drugs, which predisposed them to hypoxia. After packing, it was difficult to discern whether a hypoxic event was related to the packing itself or the sedative.

Rotenberg et al.⁴ performed a systematic review of the literature prior to 2009. The article addressed the development of adverse respiratory events following posterior nasal packing. A conclusion of their review was the lack of data supporting a theory to explain hypoxia in the setting of posterior nasal packing. Likely, the adverse respiratory events were a result of a combination of factors including previous history of concomitant cardiovascular or pulmonary disease and severe obstructive sleep apnea (OSA). All of these aspects should be kept in mind in terms of managing patients after posterior nasal packing. ICU monitoring should be considered for those patients with significant comorbidities.

Tam et al.⁵ recently performed a cross-sectional survey from the Canadian Society of Otolaryngology–Head and Neck Surgery. Their survey consisted of three sections including one section addressing management following posterior nasal pack placement. The nasopharyngeal reflex has been attributed as the cause of hypoxia in the setting of posterior nasal packing.

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However, research has shown no evidence for the existence of this reflex. The authors suggest that worsening OSA due to a posterior nasal pack might be the cause of the observed hypoxia. Because most of the postoperative OSA patients are monitored in the otolaryngology ward, they suggest that this ward is appropriate for patients with posterior nasal packing. A caveat is that if patients have multiple comorbidities causing the hypoxia, then patients should be stratified by past medical history in terms of deciding where to admit. The authors concluded that most admitting ENT physicians agreed that monitoring of vital signs is needed for all patients, but survey respondents felt that a lower monitoring setting than the ICU would be appropriate.

BEST PRACTICE

The literature reporting ward admission of patients with epistaxis treated with posterior nasal packing is relatively poor. There are no prospective randomized studies specifically analyzing this question. The preponderance of published evidence suggest admitting most

patients with posterior nasal packing to the otolaryngology ward, with continuous pulse oximetry, and selectively admitting some patients with serious comorbidities (heart disease, arrhythmias, OSA) or major blood loss to higher levels of care.

LEVEL OF EVIDENCE

In this best practice review, there is one level 2a study, one level 2b study, one level 4 study, and one level 5 study.

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