

Should Flexible Bronchoscopy be Routinely Performed in Aspiration Pneumonitis: Non Liquet

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Flexible bronchoscopy (FB) is a commonly used modality for diagnosing a variety of respiratory ailments.¹ FB is used for performing several diagnostic procedures, including bronchoalveolar lavage (BAL), bronchial brushing, endobronchial biopsy (EBB), and transbronchial lung biopsy (TBLB).¹⁻³ Several therapeutic procedures, including bronchial toileting, foreign body removal, stent placement, debulking of endobronchial tumors, and others can be performed using FB.^{3,4} FB should generally be performed by experts who have been trained and are competent to handle complications associated with FB. To attain basic FB competency, one should have performed at least 100 supervised bronchoscopies and 25–50 flexible bronchoscopies per year independently to maintain competency.⁵

Apart from the indications mentioned above, FB is widely used in the management of critically ill patients. While FB is generally safe, critically ill patients are at a higher risk of complications. The common indications of FB in an intensive care unit are enumerated in Table 1.⁶ In this edition of *IJCCM*, Megahed et al.⁷ describe the use of FB in subjects with aspiration pneumonia. The authors randomized 76 mechanically ventilated subjects with aspiration pneumonitis to undergo early FB (within 24 hours after aspiration) or standard care. The authors demonstrated a reduction in progression to pneumonia in the intervention arm than the standard care arm. While the concept is interesting, the study has several limitations. The mean clinical pulmonary infection score (CPIS) was more than six in both the arms suggesting that most subjects in both the groups already had pneumonia at presentation.⁸ Most of the aspirations occurred outside the hospital and were not witnessed. It is also possible that there could be a difference in time to presentation to the hospital after aspiration. The authors employ a single used AMBU scope that could have significant cost implications in resource-constrained settings. The sample size calculation was done using mortality as an outcome, but the authors describe progression to pneumonia as the primary outcome (www.pactr.samrc.ac.za/201909915486179). The study thus is underpowered to detect a real difference in the progression of pneumonitis to pneumonia. Also, the authors have not utilized any objective criteria for diagnosing aspiration pneumonia or respiratory failure progression. Persistence of leucocytosis, fever, and infiltrates can also be encountered in aspiration pneumonitis.⁹ The demonstration of the bacterial pathogen (quantitative counts) would differentiate pneumonia from pneumonitis.¹⁰ However, there was no difference in the proportion of pathogens isolated in either arm. Notably, the authors could have used repeated measure analysis for demonstrating a difference in the SOFA score, lung

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injury score, CPIS, and hypoxic index for a meaningful interpretation of results.¹¹ Finally, the authors did not demonstrate any difference in mortality, ICU length of stay, or days spent on mechanical ventilation, possibly due to the small sample size. Also, whether FB guided bronchial toileting could reduce the antibiotic duration cannot be ascertained based on this trial's results. Nevertheless, the shortcomings of this study could be used to plan future trials using more objective criteria. We also require studies that would define the mechanism behind such a finding: whether the lavage removes an infective inoculum, whether it mainly acts by removing nidus of infection, or by just removing secretions and thus facilitating better ventilation.

In conclusion, currently, the role of FB in the ICU is limited to the removal of mucous plugs, blood clots, foreign bodies, or other aspirates that result in lobar or segmental collapse or respiratory failure.

Table 1: Indications of flexible bronchoscopy in an intensive care unit

Diagnostic	Therapeutic or assistance
Airway inspection for diagnosing airway foreign body or injury after trauma	Removal of secretions or blood clots
Hemoptysis	Removal of foreign body
Inspection of bronchial anastomosis after lung transplantation	Endotracheal intubation for difficult intubations
Bronchoalveolar lavage	Placement of double-lumen endotracheal tubes
	Percutaneous tracheostomy

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