

Evidence Discussion – Post Endobronchial Valve (EBV) Placement (CH-5.3)

The most common acute complications following EBV placement are pneumothorax, pneumonia, COPD exacerbation and valve migration.(1) Pneumothorax occurs in 20-30% of patients, the majority within the first 48 hours after the procedure. Patients who have an acute increase in dyspnea, cough or chest pain, or an acute perceived loss of benefit, should have a chest X-ray (CR) to rule out pneumothorax. If the CR is non-diagnostic, a CT chest should be done to evaluate the valve position, the target lobe and volume reduction more precisely.(2)

Following EBV placement, it may take several days to one month for significant volume reduction and atelectasis of the target lobe to occur. If no significant lung volume reduction is seen on CR at one month, a CT should be done to evaluate valve position.(1) A CT chest is performed routinely at some centers 6-8 weeks after EBV placement.(2) If there has been no clinical benefit and no lobar atelectasis is evident on CT at 6 weeks, a revision bronchoscopy may be necessary.(3) The two most common causes of lack of benefit are the presence of interlobar collateral ventilation or valve misplacement/migration.

References:

1. Slebos DJ, Shah PL, Herth FJ, Valipour A. Endobronchial valves for Endoscopic Lung Volume Reduction: Best Practice Recommendations from Expert Panel on Endoscopic Lung Volume Reduction. *Respiration*. 2017;93(2):138-150.
2. Koster TD, Klooster K, Ten Hacken NH, et al. Endobronchial valve therapy for severe emphysema: an overview of valve-related complications and its management. *Expert Rev Respir Med*. 2020 Dec;14(12):1235-1247.
3. Klooster K, Slebos DJ. Endobronchial Valves for the Treatment of Advanced Emphysema. *Chest* 2021;159(5):1833-1842.