Tracheal injury following blunt trauma

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Tracheal Injury Following Blunt Chest Trauma
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INTRODUCTION
We report a case of tracheal injury following blunt chest trauma and its anesthetic management from our institution.

CASE DESCRIPTION
A 20 yr old healthy male comes to ER with hemoptysis and chest pain after being involved in a fistfight the night before. Diagnosis of possible tracheal injury was made based on chest x-ray (fig 1) and CT scan (fig 2) findings. He was NPO for last 18 hours. Flexible fiberoptic bronchoscopy (FFB) was done under GA with LMA with spontaneous ventilation, which showed a laceration 2 cm proximal to carina (fig 3). For Right Video Assisted Thoracoscopic Surgery (VATS), a Left Double Lumen Tube (DLT) was placed and advanced under direct FFB guidance. Care was taken to avoid positive pressure ventilation proximal to tracheal tear. Laceration was repaired and DLT switched to LMA at the end with patient spontaneously breathing for smooth emergence.

REFERENCES

DISCUSSION
Application of positive pressure proximal to the tear can cause worsening of the tear or complete disruption. Moreover, worsening of mediastinal emphysema and obliteration of neck landmarks in these conditions can make surgical airway technically challenging. Conventional direct laryngoscopy and blind advancement of endotracheal tube (ETT) past the vocal cords can result in the ETT passing through the tear or the tracheal cuff overlying the injury.

The American Society of Anesthesiologists modified trauma airway algorithm (fig 4) pertaining to airway disruption emphasizes some key management points like maintaining spontaneous respiration, which is especially important until the level of the tear has been determined by direct laryngoscopy and bronchoscopy.1 Once the level has been determined, the algorithm recommends placing the ETT below the tear to avoid increasing the pneumomediastinum and subcutaneous emphysema with positive pressure ventilation.1,2,3 If the tear is too low, close to the carina, or involves one bronchus, a double-lumen tube may be used.

Alternatively, two endotracheal tubes can be inserted, one in each bronchus, and high-frequency positive pressure ventilation or high frequency jet ventilation may be used.4 If the tear involves a complete dissection of the trachea or requires a complicated surgical repair, cardiopulmonary bypass may be needed.1,2,3

CONCLUSION
Maintenance of spontaneous ventilation prior to fiberoptic visualisation of tracheal tear and avoidance of positive pressure ventilation proximal to tear are mainstay in the management of tracheobronchial injuries.

REFERENCES