

CASE OF THE WEEK



BLUNT TRACHEOBRONCHIAL INJURY WITH RIGHT MASSIVE PNEUMOTHORAX

AT APOLLO HOSPITALS, GANDHINAGAR

Blunt Tracheobronchial injury is one of cases which are relatively rare, but must be suspected to make diagnosis and managed as early as possible. This can be possible mostly with computed tomography (CT) scan of chest and flexible bronchoscopy. This kind of injury is found usually in penetrating chest injury.

CASE REPORT

A 26 year old man brought to emergency department with history of Road traffic accident (RTA) – 2 wheeler vs 4 wheeler. Patient before 2 days with complain of bilateral chest pain and difficulty in breathing. He was managed at nearby hospital and a chest tube was inserted for Right pneumothorax. However there was severe persistent air leak requiring a second chest tube and referred to Apollo Hospital for further management.

Despite the appropriate chest tube drainage, the patient was tachypneic on 15 lit of O₂ on arrival. Patient underwent CT scan of the chest. Considering the high energy nature of crash, continued severe air leak, and failure of lung expansion with chest tube insertion, a tracheobronchial injury was suspected and CT chest plain showed large hemo-pneumothorax with complete collapse of right lung. Right intermediate bronchus was completely obliterated with hypodense material. Fracture involving 1st to 6th ribs on right side and left 1st rib fracture involving manubrium sternum. Fiberoptic bronchoscopy was performed which showed right intermedius bronchus tear with slough noted extending till right middle lobe and lower lobe filled with clots and mucous. Tracheobronchial toileting was done. Broncho alveolar lavage (BAL) taken for analysis and culture which showed no growth.

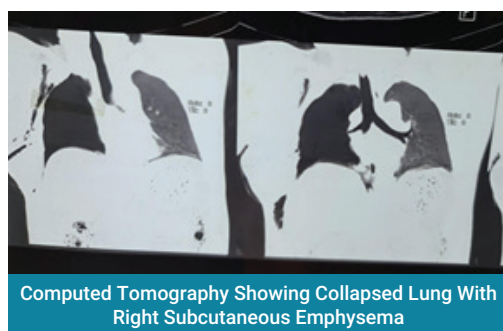
Hence he underwent right postero-lateral thoracotomy. Findings: collapsed right lung with complete transection of bronchus intermedia at the level of lower end of middle lobe and upper end of lower lobe of right lung. Bronchial transection repaired with 4-0 polydioxane sutures interruptedly. On Valsalva maneuver, there was no significant air leak. 32 Fr. Intercostal drainage tube was kept for drainage. Post operatively patient was closely monitored for all vital parameters, He improved significantly postoperatively and he was off oxygen support after 48 hours. He was doing good incentive spirometry and mobilized from postop day 3. He was discharged on 6th postoperative day.

DISCUSSION

Several mechanisms were suggested for tracheobronchial injury in blunt trauma, including sudden deceleration of the pendulous lungs fixed at the hilum; transverse widening of the chest due to decrease in anteroposterior diameter causing lateral movement of the lungs and traction of the trachea, which is fixed at the level of carina; direct pressure from the sternum on the vertebral column, which may crush the trachea or the main bronchi in theory. Also, trauma from the direct external force on the chest may cause closure of the glottis, resulting in increased airway pressure. When this increased pressure surpasses the dilatability of the airways, a rupture in the wall of trachea and/or main bronchi occurs. Prompt diagnosis is the most important factor to prevent any potential respiratory insufficiency in critically ill cases or to prevent any late complications



Before Tracheobronchial Repair



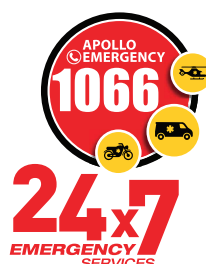
Computed Tomography Showing Collapsed Lung With Right Subcutaneous Emphysema



Post Tracheobronchial Repair

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