

Case	(599) Bronchial laceration after a blunt thoracic trauma
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CASE PRESENTATION

A 50 year-old-man was brought to the Emergency Department (ED) after being hit by a train. Due to his multiple injuries, a whole-body CT for polytrauma evaluation was performed.

The contrast-enhanced thoracic CT showed a blunt trauma with right pneumothorax and shifted away mediastinum, subcutaneous emphysema, pneumomediastinum and pneumopericardium. He also showed a consolidation in the right lung because of pulmonary hemorrhage, multiple displaced right costal fractures, a non-displaced linear fracture of the sternum body and other bony fractures. After the performance of a multiplanar CT reformatting with minimum intensity projection, a bronchial laceration was seen, confirmed at surgery.

DISCUSSION

Diagnosis: blunt tracheobronchial trauma with right bronchus laceration.

Blunt tracheobronchial trauma accounts for 0.2%–8% of all cases of blunt chest trauma. It may be due to compression of the airways between the sternum and thoracic spine, shearing at fixation points, or elevated intrathoracic pressure against a closed glottis. (1)

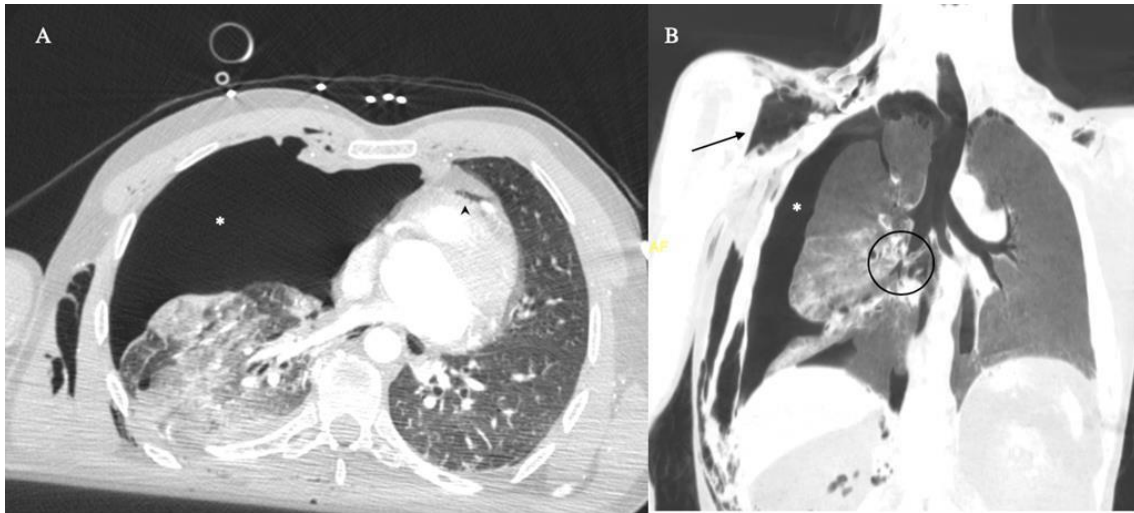
In a tracheobronchial laceration there are direct signs on image such as seeing a discontinuity in the airway, but there are also indirect signs. The most frequent indirect CT findings are pneumomediastinum and soft-tissue cervical and thoracic emphysema. (2)

Multiplanar CT reformats with minimum intensity, volumetric or intraluminal navigation projections are useful in cases of suspected tracheobronchial injury. Bronchial lacerations are more frequent than tracheal lacerations. They are typically parallel to the cartilage rings of the bronchi. On CT it may be seen an angulated bronchus, a bronchial defect, or a bronchial “cutoff”. (2)

If an injury extends to the pleural space there may be persistent tension pneumothorax, refractory to chest tube placement. When the transection of a bronchus is complete, the lung can collapse and fall away from the hilum (“fallen lung” sign) (1)

CONCLUSION

When evaluating a patient with a blunt thoracic traumatism, CT can quickly and accurately help diagnose a variety of thoracic injuries. It is important to evaluate the integrity of the airway and to know the hallmarks that we may find in a bronchial injury, in order to suspect it if we see pneumomediastinum, emphysema or if there is a persistent pneumothorax.



A. Contrast-enhanced thoracic CT. B. Multiplanar CT reformatting with minimum intensity projection. Right tension pneumothorax (*) and shifted away mediastinum, subcutaneous emphysema (arrow), pneumomediastinum and pneumopericardium (arrowhead) and pulmonary hemorrhage. Bronchial laceration on the right bronchus showing a bronchial cutoff (circle), and the “fallen lung” sign.

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