Letters to Editor

Paratracheal cyst rupture: A false alarm for tracheal rupture

Dear Editor,

A 55-year-old man, American Society of Anesthesiologists (ASA) class I, was scheduled for elective subacromial arthroscopic rotator cuff repair of right shoulder under general anesthesia with ultrasound guided inter-scalene block. Personal history was significant for chronic smoking with no diagnosis of pulmonary disease. Monitoring was done according to ASA guidelines and anesthesia was induced with propofol 140 mg, fentanyl 100 mcg and vecuronium 6 mg and maintained with...
Iatrogenic tracheo-bronchial rupture (TBR) can be caused by intubation, tracheostomy, bronchoscopy and pre-existing pulmonary diseases along with wide presentations that can mimic rare conditions like paratracheal cyst rupture.[1] Paratracheal air cysts are usually incidental findings on radiographic or CT scan and have right-sided predominance due to the supportive effect of the esophagus on the left side.[2] Paratracheal air cysts are usually asymptomatic and not frequently associated with underlying lung pathology. However, they may sometimes cause compression of the trachea or get infected leading to sepsis and mediastinitis. Communicating channel between cyst and trachea is found rarely.[3] Primarily, one sided intubation, inappropriate cuff inflation with high cuff pressures, tube replacement without deflation of cuff, coughing against blocked tube or closed expiratory valve, are the common pathomechanics for TBR and avoiding these iatrogenic misadventures can significantly reduce the risk. Diagnosis can be made provisionally during the intra-operative period if there is air leakage or inadequate high cuff pressure followed by typical symptoms of unexplained pneumothorax, subcutaneous or mediastinal emphysema.[1]

Differential diagnosis of paratracheal air cysts includes tracheal diverticulum, pharyngocele, laryngocele, zenker diverticulum, apical lung hernia, blebs, bulla, and pneumomediastinum.[4] The other differential diagnoses mentioned above can be ruled out by pharyngo-esophagogram, fiber optic bronchoscopy and chest CT scan. Although, our case was not pathologically proven, but the presence of another communicating paratracheal air cyst adjacent to trachea on 3-D reconstruction chest CT scan and negative fibre optic bronchoscopy confirmed beyond reasonable doubt our diagnosis of paratracheal cyst rupture as etiology of ongoing pathological sequence of events in the patient. Surgery is indicated for transmural tracheal lesions with protrusion of mediastinal tissue or if features of sepsis and mediastinitis appear. Principles of mechanical ventilation in these patients include positioning of tube distal to lesion, if possible, pressure controlled ventilation, alveolar recruitment (Positive end expiratory pressure, spontaneous breathing, prone positioning), reduction of airway pressure, regular monitoring of cuff pressure, low threshold for tracheostomy, intensive care and surveillance with frequent suctioning. Conservative management is indicated in spontaneously breathing patients without protrusion of mediastinal structures, independent of length or location of tracheal lesion.[1]

Paratracheal air cysts, infrequently described in literature, seem to be associated weaknesses in membranous part of right posterior lateral wall of the trachea at thoracic inlet level. Diagnosis of this lesion may be made via CT scan with 3-D reconstructions. It is vital for clinicians to be aware that paratracheal cyst rupture can be a rare and unusual addition to the long list of differential diagnosis for iatrogenic TBR.
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Access this article online
Quick Response Code: 
Website: www.joacp.org
DOI: 10.4103/0970-9185.111739