Brian P. Kavanagh, M.B., F.R.C.P.C., Editor

Delayed Tension Pneumomediastinum after Cardiac Surgery

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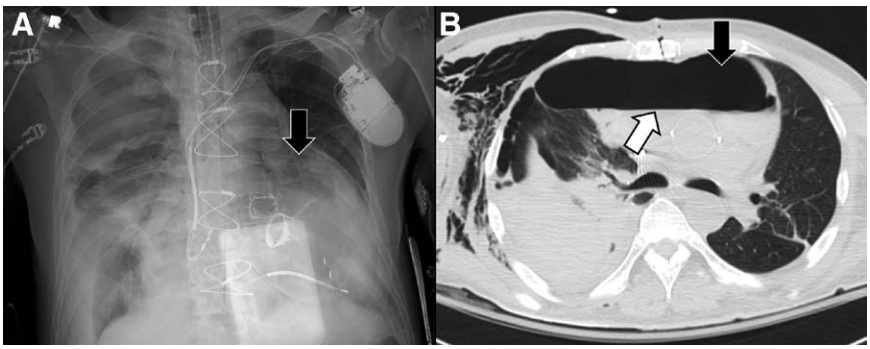

A 61-YR-OLD man underwent redo aortic and mitral valve replacement for valvular insufficiency. Routine chest radiography on postoperative day 10 revealed new mediastinal air, which progressed to tension pneumomediastinum, as seen on chest radiography (*image A, black arrow*) and computed tomography (*image B, black arrow*). Perioperative ventilatory requirements were unremarkable, with his only risk factor being recent chest surgery.

As pneumomediastinum can occur in trauma, during mechanical ventilation, or following chest or laparoscopic surgery, perioperative clinicians should be attuned to the diagnosis and management.[1] Patients may report dyspnea, dysphagia, cough, or chest pain. Clinical signs may not be specific; signs include subcutaneous emphysema, electrocardiographic changes (tachycardia, premature contractions, inverted T-waves, and low voltage readings), or Hamman's sign—a phasic crunching heard synchronous with the cardiac cycle as the heart beats against air-containing tissue.[1,2] Some of these findings are also seen in pneumothorax, pericarditis, or hemopericardium, making diagnosis difficult, but diagnostic resolution is possible with chest radiography or computed tomography.

Anatomic distortion may make both intubation and rescue surgical airway challenging. Positive-airway pressure should be minimized and nitrous oxide avoided, as either may expand the pneumomediastinum.[2] Patients without cardiorespiratory compromise are managed expectantly. For unstable patients, where mediastinal air causes tension pneumomediastinum with direct cardiac compression (*image B, white arrow*) and impeded venous return, volume resuscitation and vasoactive support are administered until surgical mediastinotomy can be performed to drain the compressed air.[2,3] This patient required extracorporeal membrane oxygenator support as a bridge to mediastinotomy and recovery.

Competing Interests

The authors declare no competing interests.

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