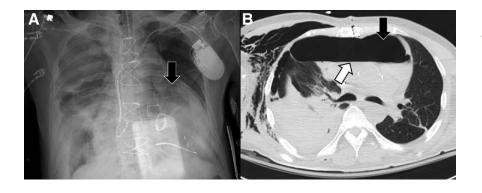
## Delayed Tension Pneumomediastinum after Cardiac Surgery

Michael W. Wolfe, M.D., Joseph S. Meltzer, M.D.



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. Downloaded from http://asa2.silverchair.com/anesthesiology/article-pdf/129/4/809/520574/20181000\_0-00033.pdf by guest on 20 April 2024

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.<sup>1</sup> Patients may report dyspnea, dysphagia, cough, or chest pain. Clinical signs may not be specific; signs include subcutaneous emphysema, electrocardiographic changes (tachy-cardia, 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.<sup>1,2</sup> 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.<sup>2</sup> 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.<sup>2,3</sup> This patient required extra-corporeal membrane oxygenator support as a bridge to mediastinotomy and recovery.

## **Competing Interests**

The authors declare no competing interests.

## Correspondence

Address correspondence to Dr. Wolfe: michaelwolfe@mednet.ucla.edu

## References

- 1. Kouritas VK, Papagiannopoulos K, Lazaridis G, Baka S, Mpoukovinas I, Karavasilis V, Lampaki S, Kioumis I, Pitsiou G, Papaiwannou A, Karavergou A, Kipourou M, Lada M, Organtzis J, Katsikogiannis N, Tsakiridis K, Zarogoulidis K, Zarogoulidis P: Pneumomediastinum. J Thorac Dis 2015; 7(Suppl 1):S44–9
- 2. Bembridge JL, Bembridge M: Pneumomediastinum during general anaesthesia: A case report. Can J Anaesth 1989; 36:75–7
- 3. Clancy DJ, Lane AS, Flynn PW, Seppelt IM: Tension pneumomediastinum: A literal form of chest tightness. J Intensive Care Soc 2017; 18:52–6

From the Department of Anesthesiology and Perioperative Medicine, University of California Los Angeles David Geffen School of Medicine, Los Angeles, California.

Copyright © 2018, the American Society of Anesthesiologists, Inc. Wolters Kluwer Health, Inc. All Rights Reserved. Anesthesiology 2018; 129:809

Copyright © 2018, the American Society of Anesthesiologists 1069 Waters Kluwer Health - Unauthorized reproduction of this article is prohibited.