

# Pneumomediastinum in a cheerleading student

Yuichiro Haba<sup>1</sup> and Toshio Naito<sup>1</sup>

<sup>1</sup>Juntendo University

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## Abstract

Spontaneous pneumomediastinum in healthy individuals is an uncommon entity. We are reporting an image of pneumomediastinum and subcutaneous emphysema in a male college student. The onset was considered to be the hard vocal exercise during his cheerleading club activity.

## Title Page

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*Full names of all authors* :

Yuichiro HABA<sup>1,2</sup> and Toshio NAITO<sup>1</sup>

*Affiliations* :

Yuichiro Haba

1. Department of General Medicine, Faculty of Medicine, Juntendo University, Tokyo Japan. 2 -1-1 Hongo, Bunkyo-ku, Tokyo 113-8421 Japan. Tel & Fax: +81-3-5802-1190

2. Department of Emergency and Disaster Medicine, Faculty of Medicine, Juntendo University, Tokyo Japan. 2 -1-1 Hongo, Bunkyo-ku, Tokyo 113-8421 Japan.

Toshio Naito

1. Department of General Medicine, Faculty of Medicine, Juntendo University, Tokyo Japan. 2 -1-1 Hongo, Bunkyo-ku, Tokyo 113-8421 Japan. Tel & Fax: +81-3-5802-1190

*Corresponding author* :

Yuichiro Haba

Department of General Medicine, Juntendo University School of Medicine,  
2 -1-1 Hongo, Bunkyo-ku, Tokyo 113-8421 Japan. Tel & Fax: +81-3-5802-1190

E-mail address: yhaba@juntendo.ac.jp

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## **Pneumomediastinum in a cheerleading student**

### **Abstract**

Spontaneous pneumomediastinum in healthy individuals is an uncommon entity. We are reporting an image of pneumomediastinum and subcutaneous emphysema in a male college student. The onset was considered to be the hard vocal exercise during his cheerleading club activity.

### **Keywords**

spontaneous pneumomediastinum, vocal exercise

### **Text**

A healthy, 20-year-old man presented with a 1-day history of hoarseness, neck swelling, throat pain, chest pain, and upper back pain that had developed suddenly on the day before presentation, while training in yelling out loud for 6 hours as a member of his college cheerleading club. On arrival, his respiratory rate was 16/min, and he maintained an oxygen saturation of 97% on room air. A crackling sensation was perceived on palpation of the neck. Hamman's sign was not observed. His chest radiograph showed pneumomediastinum and diffuse subcutaneous emphysema (Figure 1). A CT scan showed widespread free air in the mediastinum and subcutaneous areas of the axilla, neck, and jaw (Figure 2). There was no evidence of pneumothorax or esophageal injury. He was kept under observation for 5 days in our hospital. A repeat radiograph obtained 12 days after the first arrival revealed complete resolution of the free air.

There have been a few reports of pneumomediastinum complicating head and neck surgeries, dental procedures, or Valsalva maneuver.<sup>1</sup> Spontaneous pneumomediastinum caused by simple vocal exercises is even more uncommon.<sup>2,3</sup> The emphysemas caused by vocal exercises typically resolve without intervention, even if extensive free air has emerged.<sup>1-3</sup>

### **Acknowledgment**

None

### **Conflicts of interest**

All the authors have no pertinent conflict of interest to report for this manuscript.

### **Author contributions**

YH conceived the idea for the document and contributed to the management of the patient and writing of the manuscript. TN contributed to the editing of the manuscript.

### **Ethical approval**

This report complies with the provisions of the Declaration of Helsinki.

### **Consent**

Written informed consent to publish this report was obtained from the patient in accordance with the journal's patient consent policy.

### **References**

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3. Sherrier D, Lizardo RE. Spontaneous pneumopericardium in a U.S. marine: do not lose heart. *Mil Med.* 2020;185:e518-e521.

## Legends for Figures

**Figure 1 :** Chest radiograph showing pneumomediastinum (arrows), and diffuse subcutaneous emphysema in the neck and axillary areas (arrowheads).

**Figure 2 (A) :** Coronal view of the chest and neck on CT showing pneumomediastinum and subcutaneous emphysema of on the neck and axillary areas.

**(B) :** Sagittal view of the chest and neck on CT showing free air in the deep neck areas.

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