

Special Edition  
"Revisiting Physical Diagnosis in  
Respiratory Medicine"

## Case Report

### \*Corresponding authors

**Takeshi Saraya, MD, PhD**

Assistant Professor  
Department of Respiratory Medicine  
Kyorin University School of Medicine  
6-20-2 Shinkawa Mitaka City  
Tokyo 181-8611, Japan  
Tel. +81 (0)422 44 0671  
E-mail: [sara@yd5.so-net.ne.jp](mailto:sara@yd5.so-net.ne.jp)

**Taro Minami, MD**

Assistant Professor of Medicine  
Divisions of Pulmonary  
Critical Care and Sleep Medicine  
Memorial Hospital of Rhode Island  
The Warren Alpert Medical School of  
Brown University  
Pawtucket, RI, USA  
Tel. +1-401-729-2635  
E-mail: [nantaro@gmail.com](mailto:nantaro@gmail.com)

### Special Edition 1

Article Ref. #: 100PRRMOJSE1101

### Article History

Received: June 30<sup>th</sup>, 2016

Accepted: July 11<sup>th</sup>, 2016

Published: July 13<sup>th</sup>, 2016

### Citation

Saraya T, Minami T, Mikura S, Satoh T, Takizawa H. Elevated jugular venous pressure with Y-dip on inspection [Video]. *Pulm Res Respir Med Open J*. 2016; SE(1): S1-S2. doi: [10.17140/PRRMOJ-SE-1-101](https://doi.org/10.17140/PRRMOJ-SE-1-101)

### Copyright

©2016 Saraya T and Minami T. This is an open access article distributed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

# Elevated Jugular Venous Pressure with Y-Dip on Inspection

**Takeshi Saraya, MD, PhD<sup>1\*</sup>; Taro Minami, MD<sup>2\*</sup>; Sunao Mikura, MD<sup>1</sup>; Toru Satoh, MD, PhD<sup>3</sup>; Hajime Takizawa, MD, PhD<sup>1</sup>**

<sup>1</sup>Department of Respiratory Medicine, Kyorin University School of Medicine, 6-20-2 Shinkawa, Mitaka City, Tokyo 181-8611, Japan

<sup>2</sup>Divisions of Pulmonary, Critical Care and Sleep Medicine, Memorial Hospital of Rhode Island, The Warren Alpert Medical School of Brown University, Pawtucket, RI, USA

<sup>3</sup>Department of Cardiology, Kyorin University School of Medicine, Tokyo, Japan

**KEY WORDS:** Diastolic dysfunction; Right heart failure; Y dip; Post-operative status.

### CASE REPORT

An 80-year-old man was transferred to our hospital (day 1) from a local hospital because of persistent dyspnea on exertion for two weeks. He had aortic valve replacement with a mechanical valve for aortic valve stenosis 8 years prior to this admission and 40 pack-years of smoking, though he had stopped smoking 8 years prior to this admission. He had been taking warfarin (3 mg per day), and denied a history of hemoptysis. On examination, he was in mild respiratory distress. The blood pressure was 112/78 mm Hg, the pulse 98 beats per minute, the temperature 37.3 °C, respiratory rate 24 breaths per minute, and mild hypoxemia with oxygen saturation of 90% while he was breathing ambient air. Auscultation of the chest revealed coarse crackles at bilateral lower lung fields, predominantly heard on right side. Neither accentuated S2 sounds of pulmonary component nor adventitious cardiac sounds were recognized. Examination of the neck did not reveal the elevation of jugular venous pressure (JVP) since jugular venous waveform was not clearly visualized. Lower extremity edema was noted. An electrocardiogram (ECG) revealed complete right-bundle branch block. Chest radiograph revealed bilateral opacities, which was further confirmed by computed tomography of the chest, as it revealed diffuse bilateral consolidation and ground glass opacities (Figure 1). On further inquiry, he had disclosed of drinking herb tea for two months prior to this admission. He was thus suspected for herb tea induced pneumonia and the treatment with oral corticosteroid was initiated. His respiratory status improved quickly after the initiation of the therapy.

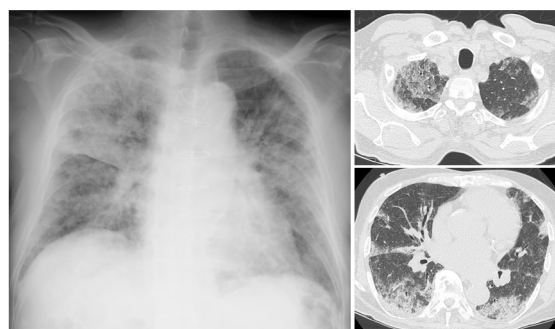
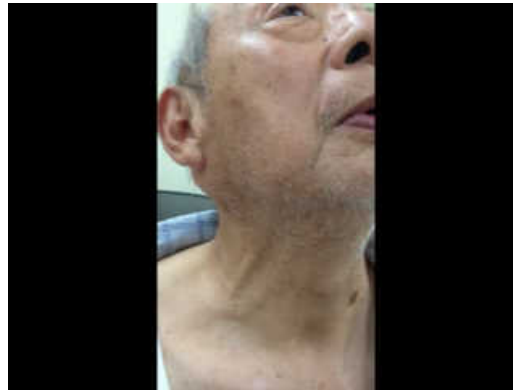


Figure 1: Chest X-ray and thoracic CT on admission.

However, on day 30, careful inspection of jugular vein revealed the elevation of JVP with 25 cm water with a deep y descent rather than x descent (Video 1), which was confirmed by electrocardiophonogram analysis presented as mild "y dip" (Figure 2). Echocardiography later revealed elevated right ventricular systolic pressure (38 mm Hg) along with right diastolic dysfunction.

Note: To best view

1. Kindly open the pdf file in Adobe Reader XI version.
2. Please save the pdf file on your local computer.
3. To watch the video kindly install the latest adobe flash player. Click here to download: <http://get.adobe.com/flashplayer/otherversions/>



Video 1: Jugular venous waveform at day 30.

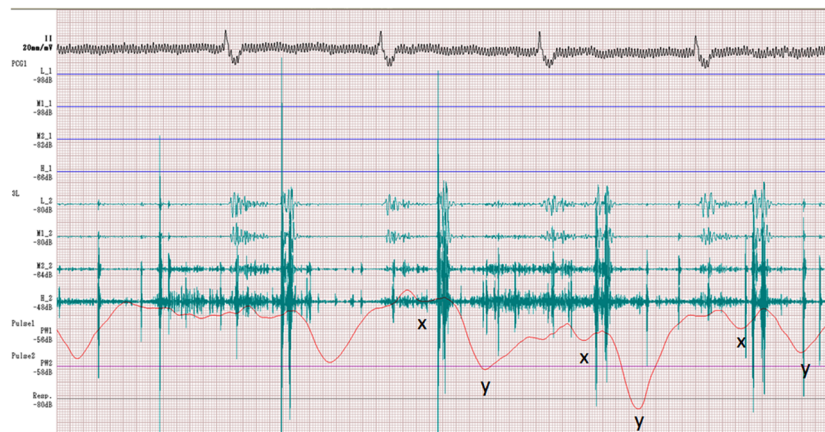


Figure 2: Electrocardiophonogram with mild y-dip pattern on jugular venous waveform

In general, the “y” descent or diastolic collapse is produced mainly by the tricuspid valve opening and the rapid inflow of blood into the right ventricle.<sup>1</sup> A sharp y dip and rapid ascent to the baseline suggests the presence of the constrictive pericarditis or severe right sided heart failure. In this regards, this case might implicate that mild y dip without rapid ascent to the baseline (Figure 2) together with elevated JVP can be seen in patients with moderate right ventricular diastolic dysfunction due to underlying lung diseases and/or post-cardiac surgery status. Careful examination of jugular vein and the assessment of jugular venous wave form have become the “lost art of medicine”, however, as seen in our case, it unmasked the presence of right ventricular dysfunction at the bedside, and facilitated further diagnostic and therapeutic interventions.

submission of this manuscript for publication.

#### REFERENCE

1. Chua Chiaco JM, Parikh NI, Fergusson DJ. The jugular venous pressure revisited. *Cleve Clin J Med.* 2013; 80(10): 638-644. doi: [10.3949/ccjm.80a.13039](https://doi.org/10.3949/ccjm.80a.13039)

#### CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

#### CONSENT

The authors obtain written informed consent from the patient for