



Flash Pleural Effusion in a Post-Operative Case of Hypothalamic Hamartoma : Is it Due to Autonomic Havoc?

Saranya Gomathy¹ · Goveen Manda² · Animesh Das² · Ashish Suri³ · Achal Kumar Srivastava²

Received: 9 September 2023 / Accepted: 9 November 2023 / Published online: 15 November 2023
© The Author(s), under exclusive licence to Dr. K C Chaudhuri Foundation 2023

To the Editor: A 13-y-old girl presented with complaints of multiple semiologies of seizures (focal with impaired awareness and dacrystic seizures) from the age of six years. Contrast-enhanced MRI brain revealed hypothalamic hamartoma. Her weight was 42 kg while height was 156 cm. Her heart rate was 82/min and blood pressure in the range of 100-110/70-80 mm Hg. She underwent right pterional craniotomy with gross total excision of the hypothalamic tumor. On day two of surgery, she had acute onset breathlessness along with desaturation (upto 70%). The possibilities considered were that of pneumothorax, hospital acquired pneumonia and acute pulmonary embolism. Auscultation revealed reduced air entry bilaterally. FiO₂ was increased to 100% initially, following which she was shifted to bag and mask ventilation. Chest X-Ray (CXR) revealed massive bilateral pleural effusion. Two litres of pleural fluid were drained from each side over a period of two days. Pleural fluid was acellular, with protein of 2 g/L, albumin of 1.5 mg/dl with serum-effusion albumin gradient of 2.9 mg/dl. Pleural fluid LDH was 244 U/L while concurrent serum LDH was 230 U/L confirming its transudative nature. Echocardiography was normal. Serum albumin was 4.4 mg/dl with total protein of 6.8 mg/dl. During her ICU stay, she also developed hyponatremia on 3rd post-operative day due to Syndrome of Inappropriate Antidiuretic Hormone Secretion (SIADH), which was managed supportively. She also had intermittent

tachycardia and hypertension which were managed symptomatically. She was extubated on 12th post-operative day.

Neurogenic pulmonary edema following acute brain injury is postulated to occur as a result of imbalance between sympathetic overexcitation causing aberrant blood flow and parasympathetic depression causing abnormal inflammatory reaction [1]. Acute brain injury can involve any part of the central autonomic network (hypothalamus being one of its part). It is plausible that the same mechanism of autonomic dysbalance might be responsible for acute bilateral massive pleural effusion in our patient following surgery.

Declarations

Conflict of Interest None.

References

- 1 Yang A, Liu B, Inoue T. Role of autonomic system imbalance in neurogenic pulmonary oedema. *Eur J Neurosci.* 2022;55:1645–57.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Animesh Das
animeshdas05@gmail.com

¹ Department of Neurology, Sri Chitra Tirunal Institute for Medical Sciences and Technology, Kerala, India

² Department of Neurology, Room no 602, CN Centre, AIIMS, New Delhi 110029, India

³ Department of Neurosurgery, AIIMS, New Delhi 110029, India