

# A Deep Sleep:- A rare case of prolonged neuromuscular blockade

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## Introduction

- Pseudocholinesterase deficiency, a rare genetic or acquired disorder that affects the ability to metabolise choline esters occurring in **0.0002% to 0.0003125%** of population [1].
- Factors like extremes of age, chronic infections, liver disease, hemodialysis and drugs such as steroids can cause acquired pseudocholinesterase deficiency [2].

## Case Report

A 77 year old female underwent a left lower limb peripheral angioplasty. Post procedure, she maintained low oxygen saturation (88%), hence, a High-resolution computed tomography (HRCT) was done showing bilateral lung consolidatory collapse with volume loss and **right basal cyst/bulla**. (FIG 1)

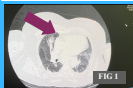


FIG 1



FIG 2

**Bronchoscopy (FIG 2)** was done under General Anaesthesia - 50 mcg fentanyl and 100 mcg hydrocortisone, induced with 100 mg propofol, paralysed with 50 mg **succinylcholine** given intravenously to facilitate laryngeal mask airway (LMA) insertion and maintained with inhalation of sevoflurane, nitrogen dioxide and oxygen. The procedure was uneventful with the patient maintaining a saturation of 90% and blood pressure of 130/90 mmHg.

**Past History:** Diabetes mellitus, **celhalitis**, hypertension, peripheral artery occlusive disease

## Management

1.5 hours post procedure, the patient had no spontaneous breathing and on **peripheral nerve stimulation**, (FIG 3) fade was seen. The patient was connected to the ventilator and shifted to the intensive care unit (ICU). A **bispectral index** monitor showed an intensity of 80, supportive measures were taken and the patient was monitored continuously.



FIG 3

The prolonged neuromuscular phase II block lasted for **four hours**, following which the patient was reassessed, extubated and maintained on non-invasive ventilation (NIV).

The patient underwent a successful spontaneous breathing on the second trial, was weaned off NIV and was discharged upon request maintaining saturation at 90% on room air. Patient and family members were **counselled** regarding the condition.

## Discussion

Inadequate recovery from neuromuscular blockade post administration of neuromuscular blocking agents (NMBAs) is associated with adverse outcomes including reintubation, **upper airway obstruction**, atelectasis, **pneumonia**, prolonged stay in the postanesthesia care unit, decreased patient satisfaction and acute hypoxic respiratory failure secondary to respiratory muscle paralysis [3].

These complications can be avoided by **preoperatively screening** for abnormal plasma pseudocholinesterase in patients being administered with succinylcholine, which is not routinely performed in India [4].

## Conclusion

- Pseudocholinesterase deficiency is a rare condition that is best addressed via an **interprofessional healthcare team** approach to ensure the best outcomes for the patient.
- A high index of suspicion in the event of delayed or inadequate recovery from neuromuscular block and prompt management using **mechanical ventilation** are vital for successful management [5].

### References:

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