

'Can't ventilate' during surgery: Nightmare for anaesthesiologist

INTRODUCTION

The common intraoperative issues encountered during thoracic surgery are inadequate ventilation^[1] or isolation of the lungs. Although these are common problems, there is a paucity of case reports on this issue. We are reporting a case, where we encountered life-threatening ventilation difficulty in a child with endobronchial tumour undergoing pneumonectomy.

CASE REPORT

A 10-year-old child with right mainstem endobronchial tumour with collapse-consolidation of the underlying lung [Figure 1] was planned for the right posterolateral thoracotomy and pneumonectomy. The tumour was biopsy proven squamous papilloma. In the pre-operative workup, the patient was stable with mild productive cough. The patient had a haemoglobin of 8.9 g% and total leucocyte count of 22,040/dl. Other investigations were within normal limits. The patient had undergone rigid bronchoscopy and biopsy 4 months back under general anaesthesia, which was uneventful.

General anaesthesia was induced with fentanyl, propofol; rocuronium was used for neuromuscular relaxation. Endobronchial intubation with single lumen uncuffed endotracheal tube was performed for lung isolation and one lung ventilation. Thoracic epidural was inserted at T7–T8 level for analgesia. A peripheral 18 gauge cannula, right internal jugular cannulation and left radial arterial canula were secured. Anaesthesia was maintained with sevoflurane and boluses of fentanyl and rocuronium. Right posterolateral thoracotomy was performed. Forty minutes after commencement of surgery, it suddenly became difficult to ventilate the patient

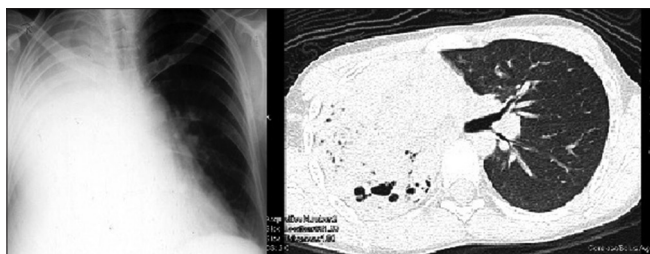


Figure 1: Pre-operative imaging

with saturation dropping to 75%. On fibre-optic bronchoscopy, tube was found well positioned in the left main stem bronchus. There was blood in the left main stem bronchus which was cleared with thorough suctioning. Ventilation improved marginally but was not satisfactory. The patient became haemodynamically unstable with bradycardia. Since there was an impending cardiac arrest, the patient was turned supine. Efforts were continued to clear the airway by suctioning, but there was only intermittent improvement in saturation.

A plan was made to do a right bronchotomy and insert an endotracheal tube into the left main bronchus passing the tube through carina under vision. As the surgeon gave incision on the bronchus, a tumour mass was seen lying in the left bronchus near the carina [Figure 2]. Tumour mass was removed and an endotracheal tube inserted through the bronchotomy. Ventilation of the patient became normal and remaining parameters improved. Later on, oral intubation was performed at the time of repair of bronchus and single lumen endotracheal tube was positioned in the left main bronchus. The patient was shifted to intensive care unit for elective mechanical ventilation.

DISCUSSION

Failure to ventilate intraoperatively is a challenging situation with the patient in the lateral decubitus position. This problem is further magnified in paediatric patients. Patients with endobronchial tumours are prone for this kind of event.^[2] The common reasons for failure to ventilate are change in position of the tube at the time of positioning of the patient and surgical manipulation or obstruction of the tube. Confirmation of the position of the tube by fibre-optic



Figure 2: Endobronchial tumour embolus

bronchoscopy is the first corrective measure in case of any difficulty to ventilate the patient during thoracic surgery. It is also important to establish that the lumen of the ventilation tube is patent and is not blocked by blood, mucus or any other tissue. In our patient, after suctioning, the lumen was found to be patent and the tube was well positioned in the left main stem bronchus. The tumour mass had embolised to the left main bronchus. We assume that the embolised tumour was creating a valve mechanism and hence was not visible on bronchoscopy. There are very few case reports in the literature, where intraoperative difficulty to ventilate was overcome by inserting endotracheal tube through a bronchotomy.^[1,3]

CONCLUSION

Embolisation of the endobronchial tumour into airway can lead to a life-threatening situation. Insertion of tube into the non-operative side through a bronchotomy is a good option in an ongoing surgery as the thoracic cavity is open and bronchus is easily accessible.

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Conflicts of interest

There are no conflicts of interest.

Preety Mittal Roy, Sangeeta Khanna, Yatin Mehta, AZ Khan¹

Departments of Anaesthesia and Critical Care and ¹Thoracic Surgery, Medanta, The Medicity, Sector 38, Gurgaon, Haryana, India

Address for correspondence:

Dr. Preety Mittal Roy,
Department of Anaesthesia and Critical Care, Medanta, The Medicity,
Sector 38, Gurgaon, Haryana, India.
E-mail: preety.m.roy@gmail.com

REFERENCES

1. Torrance R, Dawson A, Wohlgenut JM, Buchan K. Sudden loss of ventilation through a double-lumen endotracheal tube requiring a surgical bronchotomy. *Ann Thorac Surg* 2013;96:687-8.
2. Murthy T. Anaesthetic management of carinal resection and reconstruction – A case report. *Indian J Anaesth* 2009;53:340-3.
3. Ng YT, Chung PC, Hsieh JR, Yu CC, Lau WM, Liu YH. Failure to provide adequate one-lung ventilation with a conventional endotracheal tube using a transbronchial approach: A case report. *Can J Anaesth* 2003;50:603-6.

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