



Anaesthesiology

CASE REPORT OF ANAESTHETIC MANAGEMENT OF BRONCHOGENIC CYST IN 11-MONTH OLD CHILD

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ABSTRACT **Introduction:** Bronchogenic cysts are foregut-derived cystic malformations of the respiratory tract, are the most common cystic mediastinal lesion in children. **Case:** We report a case of 11-month old child who presented with repeated lower respiratory tract infections for last 3-4 months. She underwent CT chest which revealed a cystic lesion measuring 2.2 x 1.8 x 2.5cm in the posterior mediastinum. Patient was posted for Right postero-lateral thoracotomy with excision of cyst. Thorough Pre-anaesthetic evaluation was done and antibiotics and bronchodilators were continued. General anaesthesia with one lung ventilation was planned. Patient was intubated with Inj. propofol 10mg, Inj. succinylcholine 10mg and uncuffed no.4 endotracheal tube using no.0 Macintosh blade and Inj. vecuronium 0.4 mg given. Patient was maintained on sevoflurane+O₂+ air. Patient was placed in left lateral position. Right T4 intercostal space postero-lateral incision was taken, right lung collapsed and cyst was tried to excised – suddenly we noticed fall in ETco₂, followed by severe bradycardia and hypoxia (Spo₂ not recordable) Accidental rent in trachea was noticed. Cardiac massage/Inj. Adrenaline/ventilation with 100% oxygen started. Tracheal rent was sutured. Patient was revived successfully. Surgery later was completed uneventfully. Patient was extubated on table and shifted to Paediatric ICU. **CONCLUSION:** Airway management in paediatric age group is very challenging to anaesthetist. In our scenario resuscitation from asystole and airway management becomes a vital role.

KEYWORDS :

INTRODUCTION:

Bronchogenic cysts are foregut-derived cystic malformations of the respiratory tract, are the most common cystic mediastinal lesion in children. The cyst may be an asymptomatic finding, a focus of recurrent pulmonary infection, or a cause of life-threatening airway obstruction. Patient age at the time of operation varied from 4 days to 13 year of life, with eight patients (33%) presenting in the first year of life. The most common presenting symptom was chronic or recurrent cough, often associated with fever and acute or recurrent pneumonia.

CASE PRESENTATION:

We report a case of 11-month old child who presented with repeated lower respiratory tract infections for last 3-4 months. She underwent CT chest which revealed a cystic lesion measuring 2.2 x 1.8 x 2.5cm in the posterior mediastinum. Patient was posted for Right postero lateral thoracotomy with excision of cyst.

EXAMINATION: Patient was calm, co-operative. No pallor, icterus, cyanosis, clubbing, edema was observed.

Vitals: PR:102, BP:90/60, RR:26

RS: Air entry decreased on right side compared to left side. CVS: S1 S2 +, no murmurs.

INVESTIGATIONS:

CBC: Hb:10.7, TLC:11300, Platelets:5,46,000, RBS:98mg/dl, Urea:22, creat:0.8, S/E: 137/5.3/108, CXR: mild prominence of bronchovascular markings B/L. CT Scan of chest: well defined lesion of size 2.2*1.8*2.5cm seen in posterior mediastinum extending from D4 TO D8 vertebral level, located b/w Esophagus posteriorly, Trachea and carina anteriorly. Minimal pleural effusion on right side. Ill-defined ground glass consolidation at peripheral region of right upper and lower lobes s/o infective consolidation.



CT Scan of Chest

MANAGEMENT: Thorough Pre-anaesthetic evaluation was done and her antibiotics and bronchodilators were continued. General anaesthesia with endotracheal intubation and controlled ventilation was planned. Patient was pre-medicated according weight of 6 kgs with Inj. glyco0.02mg, Inj. midaz 0.025mg, Inj. ketamine 10mg I. V and pre oxygenated with 100% Fio₂ for 4-5 min. Patient was intubated with Inj. propofol 10mg, Inj. succinylcholine 10mg and uncuffed no.4 endotracheal tube using no.0 Macintosh blade and throat packing was done. Inj. vecuronium 0.4 mg was used as long acting muscle relaxant. Patient was maintained on sevoflurane+O₂+ air. Patient was placed in left lateral position. Right T4 intercostal space postero-lateral incision was taken. The cyst was identified by the surgeons and cyst wall was adherent to the trachea On excision of the cyst, suddenly we noticed fall in ETco₂, followed by severe bradycardia and hypoxia (Spo₂ not recordable) Accidental rent in trachea was noticed. We were unable to ventilate the patient with 100% oxygen. Inj. Adrenaline mg/kg IV was given, cardiac massage done, ventilation with 100% oxygen was started. Surgeons were informed to immediately repair the defect. Once the defect was repaired, saturation gradually increased up to 100% and hemodynamic parameters normalised. Surgeons confirmed no air leak. Tracheal rent was sutured. Patient was revived successfully. Surgery later was completed uneventfully. Patient was extubated on table and shifted to Paediatric ICU.



DISCUSSION:

A thorough pre-operative evaluation is crucial to plan for definitive intraoperative and postoperative management and we should have a backup plan in case of any untoward complications. We proceeded with inhalational induction followed by positive pressure ventilation. Intraoperatively, muscle relaxant is used for better surgical manipulation. In our patient, there was sudden desaturation and bradycardia. We could immediately identify that we were unable to

ventilate the patient due to accidental rent in the trachea when the surgeons excised the cyst wall which lead to hypoxia and bradycardia. Inj. Adrenaline was given and surgeons immediately were asked to close the defect which they could do at the earliest. The patient was ventilated with 100% oxygen after which saturation increased and patient became hemodynamically stable. Patients who undergo thoracotomy, there is decrease in functional residual capacity post operatively. Ability to cough and breathe deeply is decreased due to pain; patient may not be able to clear secretions leading to atelectasis and pneumonia. Hence, analgesia is an important aspect. Direct perfusion of the surgical wound with local anaesthetic solution via an indwelling catheter inserted into the depth of the wound overlying the peritoneum or muscle sheath was done using 0.25% bupivacaine, which was an uncomplicated means to replace or reduce the need of centrally acting agents.

CONCLUSION:

Anaesthetic management of thoracotomy is different from other surgeries. Constant communication with surgeons results in better outcome of the patient. Airway management in paediatric age group is very challenging to anaesthetist. In our scenario resuscitation from asystole and airway management becomes a vital role.

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