

CASE REPORT

MANAGEMENT OF CERVICAL CYSTIC HYGROMA WITH RECURRENT PNEUMONIA

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ABSTRACT: Cystic hygroma is a benign congenital malformation of lymphatic system, common location being cervico-facial region and axilla. We report a child with cystic hygroma, who had recurrent attacks of lower respiratory tract infection for surgery and the eventual anesthetic challenges associated with it.

KEYWORDS: CYSTIC HYGROMA, ANESTHESIA, RECURRENT PNEUMONIA.

INTRODUCTION: Cervical cystic hygromas presents challenges frequently to the anesthesiologist. Usual anesthetic challenges include management of difficult airway, complicated dissection due to involvement of major vascular structures, post-operative respiratory complications, co-existing syndromes like down's, turner's and post op infections. Here we report the challenges involved in pre - optimization, anesthetic management and post-operative care of a child of cervical cystic hygroma.

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CASE REPORT: A 7months old 3.7kgs, male child, 2nd of twins with a large neck mass on the right side, since birth was admitted with history of fever, cough and breathlessness since 2 days. An initial diagnosis of cystic hygroma with bilateral basal pneumonia was made. As the child needed ventilatory support, an anesthesiologist was called to PICU for intubation in view of anticipated difficult airway. Child had one history of prior hospital admission at the age of 5months for pneumonia and was treated with antibiotics.

On examination; the child was febrile and had severe respiratory distress. Auscultation revealed bilateral crepitations. There was a swelling 12 x 7cms in the right side of the neck extending from jaw line to right clavicle.

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FIG : 1 CERVICOFACIAL CYSTIC HYGROMA

On palpation it was doughy in consistency and transillumination test was positive. CT scan of the neck showed 9 x 7 x 7cms cystic lesion extending to zygomatic arch superiorly and inferiorly up to clavicle. From C2 level the lesion displaced the right carotid sheath. Trachea and esophagus were displaced anteriorly. Chest x-ray showed bilateral basal consolidation.

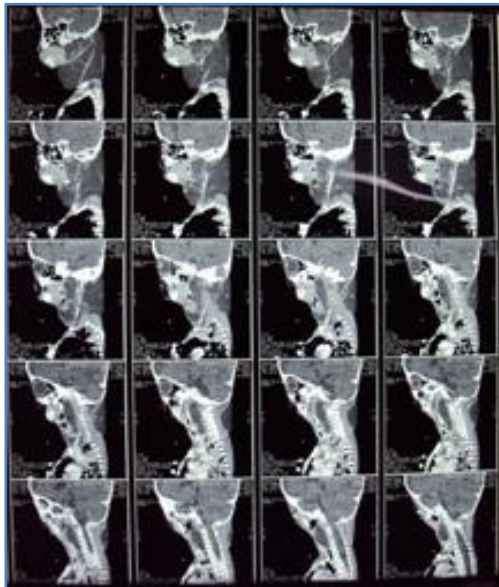


FIG : 2 CT SCAN OF THE NECK

In view of an anticipated difficult airway and severe respiratory distress the child was pre medicated with inj. Glycopyrrolate 10µg/kg body weight iv and an awake intubation done with the help of an assistant. An endotracheal tube of size 3.5 uncuffed was passed in 2nd attempt using a pediatric stylet. It was then recorded by the attending anesthesiologist that a grade 3 cormack lehane laryngoscopic view was noted. Child was started on antibiotics and antifungal agents as per culture sensitivity reports and was gradually weaned off ventilator and extubated after 1 week. Child was

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monitored in the pediatric ward with supplemental oxygen with a plan for surgical excision of the cystic hygroma after the pneumonia resolved.

Repeat chest x-ray showed resolving pneumonia, hence after consultation with pediatric surgeons the child was posted for surgery. Echo showed no cardiac anomalies. Pre-operative checkup was done. Airway findings were reconfirmed mouth opening was adequate (2 finger breadth) with mallampati grade 2, oral cavity was normal. Informed consent for anesthesia was taken and parents were explained about anticipated difficult intubation and tracheostomy, if necessary and chances of recurrence of mass. Full range of pediatric airways, LMA's and laryngoscopes including the mc coy 's blade were kept ready.

The child had patent 22 guage intravenous cannula. Monitors ECG, non-invasive blood pressure cuff, Spo2 were attached. After recording baseline vitals, child was premedicated with iv glycopyrrolate 10µg/kg body weight and Inj fentanyl 2µg/kg body weight. Inhalational induction was done with 100% oxygen and sevoflurane which was gradually increased to 8%. The child began obstructing as it got deepened and it was relieved with airway and jaw thrust.

Direct laryngoscopy was attempted only when the child was sufficiently deep, with an assistant pulling the mass away from trachea. Intubation was attempted and grade 3 cormack lehane laryngoscopic view noted.

Endo tracheal tube 3.5 mm uncuffed with pediatric stylet was introduced. Intubation was possible in the second attempt, after placing a small pillow under the child's head. The stylet was removed, tube was fixed at 9cms after confirming with auscultation of bilateral air entry and end tidal Co2 trace. Inj atracurium 0.5mg/kg body weight was given after securing the airway. As blood loss was expected a right femoral central venous line was secured under aseptic precautions.



FIG : 3 AFTER INTUBATION

The surgery lasted for 3½ hours. Intra operatively Inj fentanyl 1µg/kg body weight /hour and Inj atracurium 0.3mg/kg body weight every 45minutes was given. IV fluids initially isolyte -P, later on ringer's lactate were given according to holiday segars formula and blood loss, urine output were monitored. Intraoperative packed cell of about 20ml and fresh frozen plasma of 15ml were transfused. In view of extensive resection, difficult airway and extension into pre -tracheal wall ⁽⁵⁾ it was decided to electively ventilate the child. Ventilatory settings being mode -SIMV, tidal volume of

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35ml, respiratory rate of 40/min, fio₂ initially of 100%, later reduced to 50% along with monitoring of ECG, non-invasive blood pressures, Etco₂ and Spo₂. During this period child was maintained with Inj fentanyl 1µg/kg/hour.

Later the child was extubated after 48hours and was supplemented with oxygen hood 6lts of O₂/hr. Post operatively child had facial nerve palsy and was managed conservatively. On 4th post-operative day child had 1 episode of unresponsiveness. Hence was intubated under controlled conditions by anesthesiologist and ventilated for a week with the same ventilator settings as mentioned previously and fio₂ of 80% (later reduced).

Peep of 6cms of water, was added as saturation was not maintained. Atypical pneumonia was diagnosed, antibiotics were added and child was weaned off ventilator and extubated after a week. Thereafter was monitored with oxygen supplementation and discharged after a week.

DISCUSSION: Cystic hygroma also known as cavernous lymphangioma, is a benign congenital malformation of lymphatic system with an incidence of 1 in 6000 live births. It mainly occurs in the head and neck region, may also be found in other parts of the body like mediastinum, abdomen, axilla, groin and retro peritoneum.⁽³⁾

A pediatric difficult airway is always challenging for anesthetist. Airway related problems are most frequently encountered during induction in cervical cystic hygromas. Extension of mass into pharynx compressing the tongue or into the thorax compressing major airway can cause retention of secretions and hence these children are prone for pneumonia.⁽³⁾ Premedication with anti-sialogogues can dry up secretions. Pre-operative chest infections should be adequately controlled before planning for surgery. Adequate pre-operative preparation like detailed examination including evaluation of congenital abnormalities, detection of signs of airway compromise by radiological evaluation, control of infection will decrease morbidity and mortality.⁽⁶⁾

Loosing airway control after induction of anesthesia is common in cervical cystic hygromas. The principle behind safe induction of anesthesia in difficult airway is maintenance of spontaneous ventilation.

A gaseous induction with sevoflurane and oxygen is an accepted technique.⁽⁴⁾ Our patient started obstructing as it got deepened with sevoflurane, but we could relieve the obstruction with jaw thrust and lifting of the mass by an assistant.

Awake fiberoptic intubation is the technique of choice, but potentially difficult and traumatic in neonates and infants.⁽²⁾ Direct communication between surgeons and anesthesiologist is a must. Standby tracheostomy even though difficult should be an option.^(3,1) Educating the parents about potential complications, tracheostomy and chances of recurrence are essential.

Intraoperative problems include accidental tube dislodgement, difficult surgical dissection due to involvement of vascular and pre-tracheal structures. Hemorrhage into the operative site causing airway compression is common. Surgical drain should be kept insitu.⁽³⁾

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FIG 4 : SURGICAL DRAIN INSITU

Post-operatively respiratory complications can occur due to reactionary edema.^(3,1) Elective post-operative ventilation and use of steroids is advisable till edema settles. Other post op complications like edema of tongue and cranial nerves (9, 10, 11, 12th) palsies are frequently seen.⁽¹⁾ Good antibiotic coverage to be considered for post -operative infections related to lymphatics dissection.

CONCLUSION: Cervical cystic hygromas are challenging at every stage of their management. Improved results require pre optimization, well planned intra operative management and good post-operative care in critical care unit. Coordination between an experienced anesthesiologist, surgeon and the intensivist is mandatory.

REFERENCES:

1. R M Weller; Anaesthesia for cystic hygroma in a neonate Anaesthesia, 1974, vol. 29, 588 – 94.
2. Robbins S L, Cotran R S, Kumar V Blood vessels i; pathological basis of disease 3rd ed Philadelphia W B Saunders Co, 1984; 502- 46.
3. S. Sharma, AG Aminuldin, W. Azlam. Cystic Hygroma Anaesthetic consideration and review Singapore Med journal 1994: vol. 35, 529-31.
4. Carel well m, Walker R W. Management of difficult paediatric airway: Br. J. Anaesthesia 2003: 3: 167 – 70.
5. Esmaili M R, Razvi S, H arofleth H r, Tabatabai S M Cystic hygroma Anesthetic considerations and review. J Res med Sci 2009, 14: 191 – 5.
6. Geeta Kamal, Akta gupta, Sapna battia, Neelam Prasad cystic hygroma and an aesthetic implications IJA 2011 vol. 55, issue 1, page 89 – 90.

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