

Case Report

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Huge adult cystic hygroma: anaesthesia challenge

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ABSTRACT

Cystic hygroma is a rare lymphatic tumor, uncommonly seen in adults. We report a case of woman aged 55 years, who presented with a huge cystic swelling causing difficulty in neck movements. Huge neck swelling distorting the anatomy poses a challenge for securing the airway. The airway was secured with orotracheal intubation with help of a bougie after general anaesthesia, shifting the swelling off the midline by an experienced anaesthesiologist. Appropriate preoperative airway assessment, meticulous planning anticipating difficulty and simple manoeuvres, can ease intubation.

Keywords: Cystic hygroma, Difficult airway, Rigid bronchoscopy

INTRODUCTION

Cystic hygroma is a malformation of the lymphatic system. 75-80% are located in the head and neck region and are majorly (90%) diagnosed under the age of two years.¹ It is a rare cause for neck swelling in an adult. Any neck swelling distorting the airway anatomy poses a challenge to the anaesthesiologist. We report a huge cystic neck swelling in a 55 year old lady, diagnosed as cystic hygroma and its airway management.

CASE REPORT

A 55 year old lady presented with a huge neck swelling, which had progressively increased over last 6 months (Figure 1). There was no antecedent history of infection or trauma. No change in voice or dysphagia. There was no history of change in appetite, sleep pattern, any temperature intolerance or history suggestive of thyroid dysfunction.

On examination the swelling was present anterolaterally on left side of the neck, extending in midline from chin to

left ear lobe superiorly, and anterior border of trapezius posteriorly, and to sternal notch and clavicle inferiorly (Figure 2). It measured about 30 cm x 30 cm in size, cystic, non-tender, non-compressible, painless causing difficulty in neck movements. Transillumination test was negative. The skin overlying the lesion was normal, with no transmitted pulsations and no associated lymphadenopathy. Mouth opening was adequate with Mallampatti grade I. Neck extension was normal and flexion was limited. Trachea had shifted to the right with positive Traile's sign. Indirect laryngoscopy and 70° scopy showed normal glottis and mobile vocal cords. Lateral X-ray of neck revealed no tracheal compression. CT scan and USG of neck revealed a large cystic swelling 15 cm x 20 cm with no solid component, displacing the carotid and left lobe of thyroid anteromedially, suggestive of originating in the posterior fossa.

Swelling deviated the trachea to the right, with no compression or mediastinal extension. General examination and systemic examination were normal. All blood investigations were normal.



Figure 1: Swelling from anterior aspect.



Figure 2: Swelling from lateral aspect.

The patient was posted for excision of the neck swelling by the ENT surgeons. Informed high risk consent was obtained. Postoperative ventilatory standby was kept ready. Anticipating difficult intubation, difficult airway cart including rigid bronchoscopy, fibroscopic bronchoscopy was kept ready. As there were no signs of compression or any signs of difficult laryngoscopy, tracheal intubation was planned after induction of general anaesthesia. Considering the possibility of mid or lower tracheal collapse after general anaesthesia, rigid bronchoscopy with skilled ENT surgeons in operating theatre was kept ready.

The patient was shifted to the operating room. Two experienced anaesthesiologists were present for the induction. Baseline monitoring included electrocardiography, non-invasive blood pressure, pulse oximetry, end-tidal CO_2 . Intravenous access with 20G cannula was established. Premedication included inj. glycopyrrolate 0.2 mg IM, inj. midazolam 1 mg IV, inj. fentanyl 150 μg IV. After preoxygenation, anaesthesia was induced with inj. propofol and sevoflurane. Bag and mask ventilation was possible when the cystic swelling was put off midline by hand of one of the experienced anaesthesiologist. Thereafter inj. succinylcholine 100 mg IV was given. With external manipulation and pushing the swelling off midline, direct laryngoscopy was done, Cormack and Lehane class II b was found. To avoid any trauma a bougie was passed and trachea was intubated with no.7mm cuffed endotracheal tube. Intubation was confirmed by EtCO_2 and bilateral chest auscultation. After intubation non depolarizing muscle relaxant inj. vecuronium 5 mg IV was given. Anaesthesia was maintained O_2 and nitrous oxide with isoflurane and intermittent boluses of inj. fentanyl and inj. vecuronium. The cyst was removed with the sac. The diagnosis of cystic hygroma was established after histopathological investigation of surgical specimen. After surgery, anaesthesia was reversed with inj. glycopyrrolate 0.5 mg IV and inj. neostigmine 3 mg IV. Patient was extubated and shifted to the recovery. The postoperative course was uneventful.

DISCUSSION

Congenital cystic masses of the neck are uncommon, can present in any age group and as a challenge for diagnosis. Differential diagnosis of congenital cystic neck masses includes thyroglossal duct cyst (most common), branchial cleft cyst, cystic hygroma (lymphangioma), cervical thymic and bronchogenic cysts.²

Cystic hygroma arises from remnants of embryonic lymphatic tissue, which proliferate and manifest as soft, cystic, benign and painless mass. They tend to enlarge progressively over a span of weeks or months.³ They typically present under the age of two years and rarely seen in adults. Majority present in head and neck, typically located in posterior cervical triangle.^{1,3} They occur as multilocular cystic solitary lesion, usually

infiltrative, often separating fascial planes and incorporating nerves, muscles, and blood vessels.⁴ In many cases the correct diagnosis is established only after histopathological investigation of the surgical specimen.⁵ Although uncommon, there are few cases reported in adult patients³⁻⁶ and so cystic hygroma should be considered in the differential diagnosis of lateral neck masses in adults.⁶

Any neck swelling distorting the airway anatomy can present a challenge to the anaesthesiologist for securing the airway. Thorough airway evaluation and meticulous planning are crucial to avoid any morbidity and mortality in anticipated difficult airway situations. In our case the patient was properly evaluated by various imaging like X-rays of the neck, CT scan and USG. The upper airway was evaluated by indirect laryngoscopy and 70°scopy.

The Canadian Airway Focus Group (CAFG) have recommended on how best to approach the patient with an anticipated difficult airway. Important facets of a complete airway evaluation which must be considered when difficulty is anticipated with airway management include predictors of difficult face mask ventilation, video laryngoscopy, use of a supraglottic device, and cricothyrotomy.⁷ In our case, difficulty in cricothyrotomy and possibility of mid or lower tracheal obstruction due to collapse of lesion causing difficulty in mask ventilation was anticipated. Due to severe tracheal deviation and the cystic swelling collapsing on the trachea in supine position, there was a possibility that fibreoptic bronchoscope may not be negotiable. As the patient had adequate mouth opening, normal neck extension and normal glottis, intubation after general anaesthesia using non-depolarising muscle relaxant was planned for the patient. After induction, ventilation and intubation with help of the bougie was done by simple manoeuvre of shifting the cystic swelling off the midline. For management of mid- or lower tracheal obstruction, it is recommended that, Rigid bronchoscopy and a skilled operator should be immediately available in case tracheal intubation fails to establish oxygenation as cricothyrotomy or tracheotomy cannot be relied.⁷ This

was kept ready in our case along with presence of two experienced skilled anaesthesiologists and ENT surgeon.

Thus, it can be concluded that difficult airway situation can be well managed, even using simple manoeuvres. Appropriate airway evaluation, thorough planning anticipating difficulty, a rational decision maximizing patient safety, with the best available equipment and skilled personnel should be taken.

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