



Clinical Case Reports

Early Postoperative Death in a child Undergoing Thyroglossal duct cysts Surgery

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Abstract:

Thyroglossal duct cysts is a common congenital cervical disease, its obvious signs include having a small lump or opening on the front of their neck at birth. Rarely, especially if the mass is located at the base of the tongue, airway obstruction and dyspnea can ensue.

A 11-year-old female with no particular pathological history was admitted for surgical removal of a surinfected cyst of the thyroglossal tract. Few hours after being discharged from the department, the patient was readmitted to the emergency room.

The final diagnosis of fatal asphyxia due to compressive hematoma extended to cervical muscles and para laryngotracheal was determined by both autopsy and histology

Thus, it is vital to always consider all the possible injuries, namely thyroid, salivary gland, and tongue

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Introduction:

Thyroglossal duct cysts are the most common congenital cervical anomaly, they are reported in about 7% of the population worldwide [1]. This pathology is resulting from the failure of thyroglossal duct to involute during embryological development [2].

Thyroglossal duct cysts can form anywhere along the thyroid's route of migration between the tongue and the inferior neck. They often present as midline neck cysts closely associated with the hyoid bone. Usually, this malformation is not painful, though it

might be if the area becomes infected. Malignant thyroglossal duct cyst is a rare condition, occurring in 1% of all cases of thyroglossal duct cysts [3].

Less encountered complications have been reported such as dyspnea [4,5,6,7], dysphagia [8].

In addition, thyrolingual cysts are often containing mixed mucus [9], and were associated with sudden death in infancy [10], and relatively large posterior lingual midline cysts were identified at autopsy [11].

A thyroglossal duct cyst may appear similar to other growths around the neck (e.g., epidermoid cyst, brachial cleft cyst, and bronchogenic cyst) [12,13].

In infants, thyroglossal cyst is a common cause of airway blockage [14,15,10,16,11,17-20]

Dr. Sistrunk recommended removal of not only the cyst and central portion of the hyoid bone, but also a central core of deep tongue musculature. By doing so, the rate of recurrence is decreased from approximately 50 to 3-5% [21].

A laryngotracheal injury is a rare and possibly severe complication of the Sistrunk surgical procedure leading to problems with the airway, swallowing, and/or voice [1].

We describe a case of early postoperative death in a child.

Case report:

A 11-year-old female with no particular pathological history was admitted in a liberal health facility for surgical removal of a superinfected cyst of the thyroglossal tract.

The surgery was successfully completed under general anesthesia and the patient was then completely discharged. However, few hours later, the child was readmitted for acute respiratory distress, cyanosis, and mottling, followed by an unexpected death.

Autopsy was performed highlighting compressive hematoma extended to the whole of the cervical muscles and laryngotracheal area, associated to significant glottis and laryngeal edema.

Although, thyroglossal cysts might have compressive symptoms of the airway, mortality could have been prevented by meticulous examination to the possible surgical wounds.



Figure 1: postmortem aspect of the neck after surgery

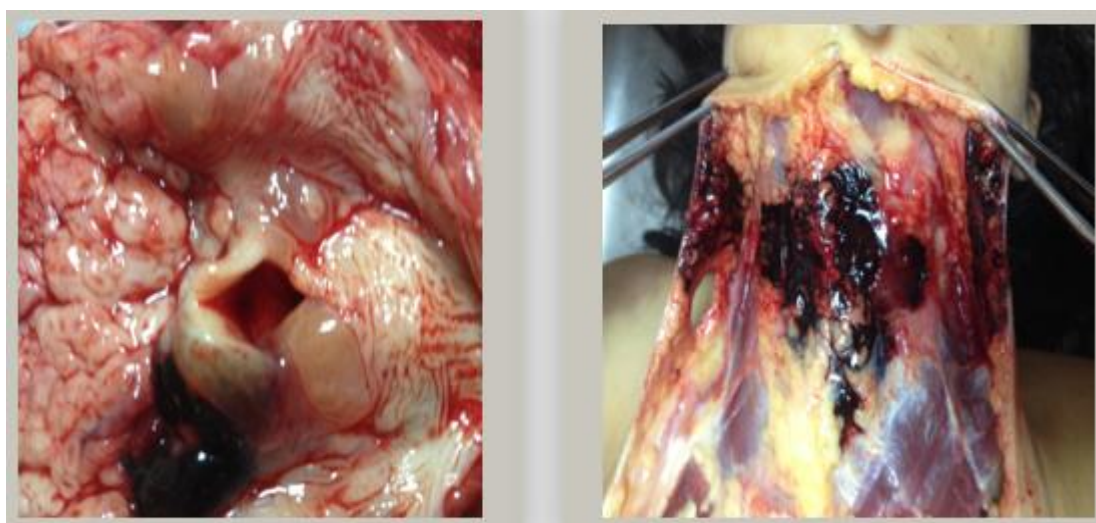


Figure 2: images of postoperative laryngeal edema hematoma

Discussion:

By browsing the literature on case reporting we came across other authors who have described various clinical cases of thyroglossal duct cysts, for an instance, a 69-year-old female presented for a neck lump and dysphagia for 1 year [2]. Moreover, a fatal asphyxia by a thyroglossal duct cyst has been described in a healthy 35-year-old man who presented a sudden throat pain associated to an inability to swallow [22]. Furthermore, a 55-year-old man reportedly died from fatal unexpected asphyxia caused by a thyroglossal cysts mass [9].

Unusual presentations are mainly seen among young children and are responsible of death in half of these cases [9]. In children, anterior midline or near midline neck masses may be often ascribed to thyroglossal duct cysts and can lead to respiratory distress [23].

The Sistrunk surgical procedure is widely used for treatment of thyroglossal duct cyst [24].

Cyst removal is safe and well-tolerated procedure in the adult population [25], however, postoperative-y, periodic monitoring with neck CT and/ or u-trasound is important in patients treated with the Sistrunk procedure, given the high incidence of synchronous malignancy especially in adults [24].

Surgery adverse events are typically readmissions, wound infections, and unplanned reoperations [23]. Almost 40% of postoperative deaths occurred within three days of emergency surgery [26].

Reportedly, the presence of thyroglossal duct cyst may cause complications such as upper airway obstruction, and dyspnea [10,1,9,27,14-20]. Moreover, the risk of reoperation and surgical-site reinfection should be considered [25].

Risk factors that may increase the risk of recurrence are multiple duct tracts, surgery during active exacerbation, and inappropriate surgical technique [28,29].

Similarly, a man died from asphyxia within 1 hour after the initial symptoms, autopsy revealed a 1.5 cm ruptured thyroglossal duct cyst with secondary swelling of the epiglottis and tongue, and thus

resemble to our findings [22]. Furthermore, laryngotracheal injury is rare and can induce issues with the airway, swallowing, and voice [1]. which is in line with our observation.

Conclusion:

Thyroglossal duct cysts typically present as mobile neck masses that may cause rare fatal airway obstruction among children.

In our case the cause of death was attributed to asphyxia by airway compression secondary to extended laryngeal hematoma following thyroglossal excision. These findings are suggesting a possible mishandled thyroid injury.

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