Case Report

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A Rare Case of Co-Existence of Second Branchial Fistula and Thyroglossal Cyst

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Abstract

Thyroglossal duct are the most common congenital neck masses followed by branchial cleft anomalies. Thyroglossal duct cysts are 3 times more common than branchial cleft anomalies.It is extremely rare to find the coexistence on the above two anomalies in the same individual which is presented in the case report.

The purpose of this article is to report the simultaneous rare coexistence of 2 congenital cervical anomalies and describe its clinical features and management of such anomalies.

Keywords: Simultaneous Branchial Fistula; Thyroglossal Cyst.

Introduction

Congenital masses of head and neck are one of the commonest swellings in the neck in children Thyroglossal duct cysts and then branchial cleft anomalies are the most common neck masses. A concurrent presentation of these 2 anomalies has been described in only 2 cases and is described in this case report.

Case Details

A 5 year old male child was brought to ENT OPD by his parents with chief complaints of discharging sinus in the lower part of the neck since past 2 months. Apparently 2 months ago his parents noticed whitish glue like secretions of scanty quantity spontaneously coming from a small punctum in the neck. There was no history of any pain or swelling in the neck. No history of any fever. No history of difficulty in breathing/ swallowing. No history of any painful neck movements. No history any congenital abnormalities. No significant antenatal or postnatal history.

On examination a pinhole sized opening (Figure 1) was seen on the right side of the neck and was located about 1cm away from the midline and was about 1cm above the medial end right clavicle ant aspect of Rt sternocleidomastoid. Skin around the opening appeared normal with no swelling or redness around it. No discharge was expressed on applying pressure over the tract. Another small.5cm by 1cm suprahyoid cystic swelling was also seen. There was no cervical lymphadenopathy. Examination of Ear, nose and throat was normal.

USG neck – showed a well defined cystic lesion of (6.4 x 6.3 x 4.9mm) seen in suprahyoid region in the midline which moved with deglutition and protrusion of tongue suggestive of infected thyroglossal cyst. MRI neck (Figure 2)T2 Hyperintense cystic lesion noted at the level of foramen ceacum. In posterior third of tongue measuring 7.2 x 4.mm in size. T1, T2 images showed hypointense tract with external opening just above sternal end of the right clavicle and internally reaching upto the floor of mouth with indistinct

extent which was suggestive of thyroglossal cyst and branchial fistula right side of neck. The final diagnosis was thyroglossal cyst coexisting with branchial fistula on right side of the neck. Patient was taken for Sistrunk's operation with Branchial fistula excision (Figure 3) under GA. Sistrunk's operation was performed during which cystic swelling identified in suprahyoid region along with the tract. Cyst along with the tract dissected upto tongue base and removed .

For branchial fistula, the mouth of the sinus encompassed in the incision with a transverse elliptical incision. Methylene blue dye injected into the fistula tract and it was seen to be extending medially and superiorly. A second incision like a stepladder incision was given 2cm below angle of mandible, rail roading of the tract done. The tract was seen going lateral to the posterior belly of digastric into the tonsillar fossa where it was dissected and ligated.

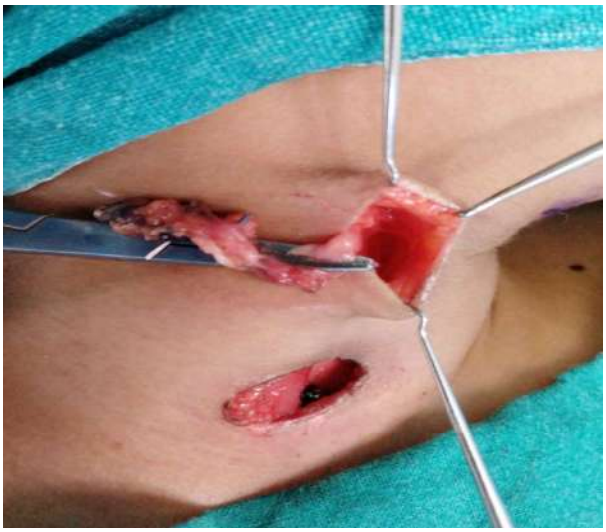

Fig. 1: Dissection of branchial fistula

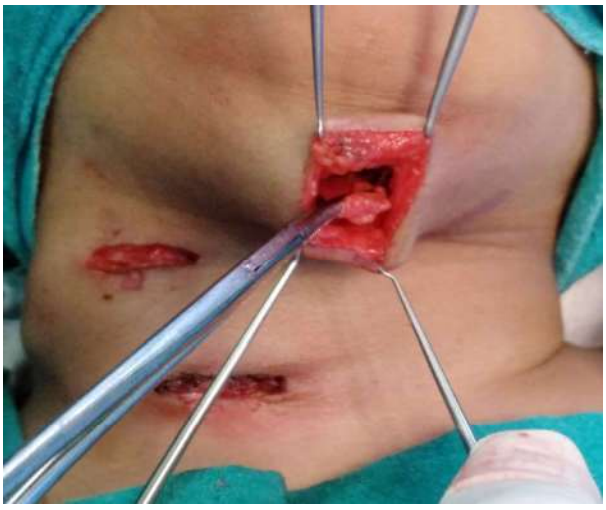

Fig. 2: Dissection of thyroglossal cyst

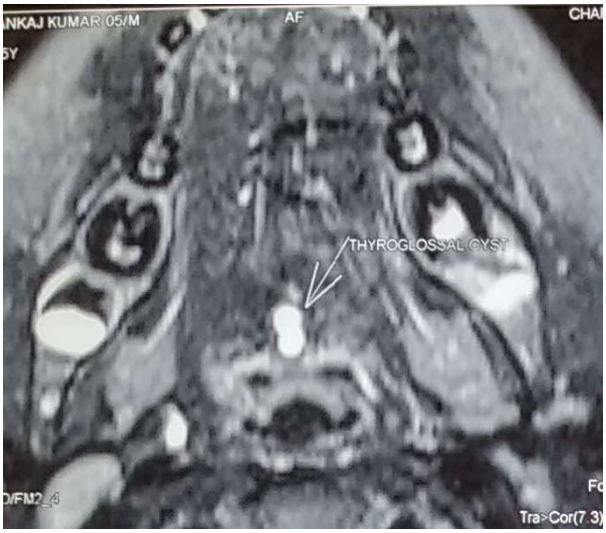

Fig. 3: MRI axial image showing the thyroglossal cyst

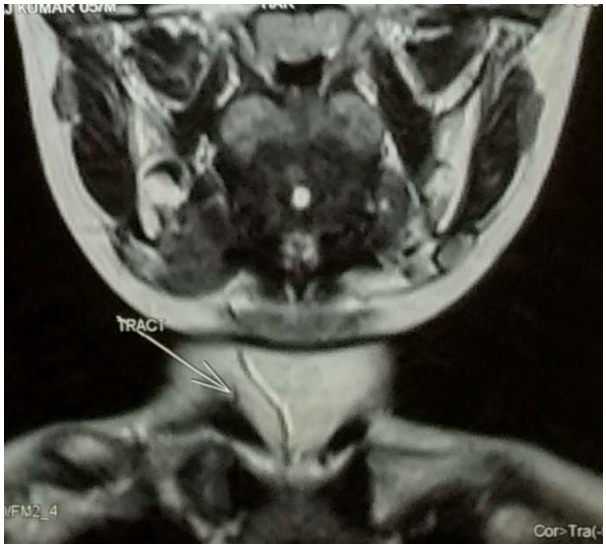

Fig. 4: MRI image showing the tract of branchial fistula

Discussion

Ninety percent of neck masses in children are benign of which 55 percent were congenital. Benign neck swellings may be nodal or cystic, lateral or central, inflammatory or congenital. The most common cystic structures are branchial cysts and thyroglossal cysts. These may present as infections or become infected .

During the migration of thyroid primordium to lie anterior to trachea, there is a connection between foramen cecum and thyroid gland which forms the thyroglossal duct. Occasionally, a portion of the thyroglossal duct may remain that forms an enclosed thyroglossal duct cyst or a thyroglossal fistula which has a communication with the surface of the neck.

Branchial abnormalities occur when there is disturbance in the maturation of the branchial apparatus during fetal development. Branchial anomalies account for 20% of all congenital masses in children [1]. During the 5th week of intrauterine life second branchial arch grows over the third and fourth branchial clefts which form a cervical sinus. Failure of the cervical sinus to close may therefore potentially communicate with the second branchialpouch (and therefore the tonsil fossa) Branchial fistulae usually present in childhood as a weeping defect along the anterior border of sternocleidomastoid, or occasionally as an acute infection.

About 75% of patients with thyroglossal duct anomalies are diagnosed before 30 years of age, and more than half of these are identified before age 10years [2]. Patients present commonly with an asymptomatic, cystic neck mass in the midline near the hyoid bone. 66% of the location for the cystic mass is adjacent to the hyoid bone [3,4] . Although both these congenital anomalies occur individually, they are rarely seen coexisting in the same patient [4]. In our case both the anomalies were seen coexisting in the child.

Rarely a low-lying thyroglossal cyst may present as lateral cervical discharge without a palpable mass mimicking a second branchial cleft fistula which can be made out on imaging [5].

Ultrasound scanning is accurate, quick, non – invasive and cost-effective so it is theinvestigation of choice for diagnosing these above congenital anomalies. Further investigations like CT, MRI and radionuclide scanning should be undertaken to ensure that a normal thyroid gland is present and to know the extent of the cyst and fistula. Fistulae may be investigated with a sinogram.

Pharyngoscopy:

If needed can be done with careful examination of the tonsil fossa and piriform fossa should be undertaken prior to excision. In our case MRI was useful in confirming the diagnosis of both pathologies.

Surgical excision of the cysts and fistulas are the treatment of choice. Recurrence rates are significantly less after Sistrunk's operation than after simple cyst excision. Surgery should include excision of the hyoid and a cuff of tongue base muscle to prevent recurrence .

A second branchial fistula might require one or more further skin incisions to allow safe dissection to the carotid and extension and dissection upto the tonsil fossa opening.

Conclusion

Two congenital anomalies thyroglossal duct cyst and branchial cleft fistulae may coexist in a single patient. This case enlightens us that more than one anomaly can be seen in same patient simultaneously. This can be diagnosed by proper investigations and recurrence prevented by doing a proper planned surgery.

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