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Thymopharyngeal Duct Cyst: A Form of Cervical Thymus

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ABSTRACT

Background: a rare case of a cystic thymopharyngeal duct presented as a rare case of the cervical thymus. The embryology of normal cervical descent of the thymus is reviewed. The preoperative diagnosis of thymopharyngeal duct cyst is rare to be established, however, histopathology is the definitive diagnosis. Thymopharyngeal duct cysts are rare lesions commonly been one of differential diagnosis in childhood neck masses.

Patients and Methods: asymptomatic thymopharyngeal duct cyst in a 7 years old boy caused by the remnants of the thymopharyngeal duct. A consent form was taken from the parent. The study approved by the ethical Committee of the Faculty of Medicine, Umm Al-Qura University that follows the international rules of research. The study not sponsored by any agency.

Results: the patient undergoes surgery under general anesthesia followed by transverse incision, the cystic lesion was found on the sternocleidomastoid muscle. There were no postoperative complications. Histopathologic evaluation confirms the presence of thymopharyngeal duct cysts.

Conclusion: thymopharyngeal duct cysts can cause a diagnostic challenge to the surgeon evaluating of neck swelling. Also its importance of considering thymopharyngeal duct cysts in the differential diagnosis of any child who presents with a neck swelling.

Keywords: Thymopharyngeal cyst, Cystic lesion, Duct Cyst

INTRODUCTION

The thymic cyst is one of the rare differential diagnoses of neck masses in children and the diagnosis mostly is postoperative based on the histopathology examination of the specimen. The thymopharyngeal duct cyst in children are mainly in the mediastinal but it could be founded at any level of the normal embryology of thymus from the angle of the mandible to the superior mediastinum [1,2]. The thymic embryological remnant usually presents as a case of cervical mass during childhood. Thymopharyngeal duct cyst is a cystic thymic remnant located from the lateral neck to the upper mediastinum into the thymus gland [3,4].

PATIENTS AND METHODS

A 7-year-old boy presented with gradual onset of enlargement, painless on the left neck mass. There was no history of fever, night sweats, malaise, dysphagia, wheezing or any difficulty in breathing. He got an upper respiratory tract infection around 1 week ago; he had no prior neck swelling or any infection. otherwise, he was healthy. The patient was up to date on all vaccinations. There was no family history of congenital or acquired of the same illness. Physical examination of the neck showed a mass on the left, which was firm in consistency not fluctuant, not tender, or erythematous. He had a full neck range of motion. Based on these findings, we suspected he has cystic lesion but we couldn't give the definitive diagnosis with this information alone, so hens we decided to perform a Contrast-enhanced magnetic resonance imaging (MRI) of the neck mass. The consent was obtained from the child's parent. The MRI reported that a peripherally enhancing, multi-septated, cystic lesion that arises from the superior mediastinum and extended into the left sides of the neck, deep to the sternocleidomastoid muscles (SCM), and anterior to the carotid sheaths. The left-sided lesion was measured 10.5 cm in length. No additional enhancing lesions were noted. The preoperative diagnosis was thymopharyngeal duct cyst. The patient undergoes surgery under general anesthesia followed by transverse incision, the cystic lesion was found on the sternocleidomastoid muscle, the cystic counted from the sternal notch and the inferior edge end with the opening of the thoracic cavity, the total length was 14 cm, the specimen sent to histopathological investigations thymopharyngeal duct cyst was the diagnosis. We closely observed the patient for the next two months. During the follow-up, there was no increase in swelling no pain or decreased range of motion. The patient informed that have be follow up sooner if the mass returns.

DISCUSSION

The primordial thymus is created from ventral of the bilateral third pharyngeal pouches during the 6th week of development. The conjugated inferior parathyroid from the dorsal wings of these pouches develops in association with thymic primordium. The thymus glands elongate caudally with medial direction, keeping a connection with the pharynx through the epithelial tube which is known

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as the thymopharyngeal duct. They lose their association with the pharynx, then move to their true location just dorsal to the sternum, and fuse in the mediastinum by the ninth week [5, 6]. The clinical presentation of thymopharyngeal duct cystic lesions is variable. The most common presentation represent around 80-90% is painless soft and non-tender lateral cervical mass which grows progressively, with no skin changed [7,8,9]. Usually, most of the cases were unilateral, but there was a prevalence study was revealed the most common site of cystic masses were on the left side of the neck 60-70 %, the cystic lesion founded that commonly affecting the children at the age of puberty. The represented male: female predominance was 3:1 [7, 10, 11]. But the thymopharyngeal duct cyst if extends into the mediastinum can frequently cause symptoms [5]. Also, there were some studies confirm that some complication could be occur like rupture, abscess formation, and including tracheal compression [12]. Ultrasonography, computed tomography scan, and magnetic resonance imaging could show the cystic nature of the lesion, yelled the diagnostic challenged and give difference between a branchial cyst, lymphangioma, epidermoid cyst, thyroglossal cyst, or cystic teratoma [7,10]. The CT scan gives important information to distinguish thymic cysts from other congenital anomalies. CT also provides information regarding the vital structures that give highly operative planning. [5, 12]. Although fine needle aspiration may help to assist in the diagnosis [8]. Histological examination could assist in the identification of the cyst wall ((lined by the spindle, cuboidal, or columnar cells), some of them are ciliated, non-ciliated, stratified, or pseudostratified [12]. Radical excision of thymic cysts is the treatment of choice [8, 13, 9].

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