Cervical Thymic Cyst in Adults: Consideration in a Neck Mass

Algorithm

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ABSTRACT

Objectives: 1) Review the epidemiology, clinical features, and histopathology of cervical thymic cysts; 2) Compare differences in presentation of cystic neck masses among disparate age populations; 3) Discuss proposed pathogenetic mechanisms for development of thymic cysts as well as the proper management; and 4) Understand a comprehensive algorithm for the workup of cystic neck masses.

Methods: Retrospective case series and literature review. Results: Cervical thymic cysts are rare lesions that most often occur in the pediatric age group; there are few published reports of thymic cysts in the adult population. In reviewing our records over a ten year period, we have found 5 incidences of thymic cysts. We present one example in detail, and a comparison of the 5 cases. In addition to a discussion of proposed pathogenetic mechanisms and characteristic pathologic features of thymic cysts, we propose an algorithm for workup of cystic lateral neck masses.

Conclusions: Despite its rare occurrence, thymic cyst can present in adult patients as a unilateral cystic cervical neck mass. Surgical management is an essential component for both diagnosis and treatment of cystic neck masses.

CASE SERIES

Over a ten year period at a single institution, 5 patients were diagnosed by histopathology with cervical thymic cyst. All patients’ masses were excised from the left neck, and all were diagnosed preoperatively, though thymic cysts were discovered in addition to parathyroid adenomas in two cases. Thymic cyst in one patient caused compressive symptoms; other cases were asymptomatic. All patients were successfully treated by complete surgical excision.

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>Presentation</th>
<th>Cyst Location</th>
<th>Preop Diagnosis</th>
<th>Postop Diagnosis</th>
<th>Size excised mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38y</td>
<td>Neck mass</td>
<td>L post level</td>
<td>3rd Branchial Cleft Cyst</td>
<td>MTC</td>
<td>9 x 5 x 3 cm</td>
</tr>
<tr>
<td>2</td>
<td>18y</td>
<td>Neck mass</td>
<td>L level IIA</td>
<td>Lymphatic Vasc Mal</td>
<td>MTC</td>
<td>5 x 3 x 2.5 cm</td>
</tr>
<tr>
<td>3</td>
<td>77y</td>
<td>Dysphagia</td>
<td>L paraatracheal extending to mediastinum</td>
<td>3rd Branchial Cleft Cyst</td>
<td>MTC</td>
<td>3 x 2 x 1 cm</td>
</tr>
<tr>
<td>4</td>
<td>52y</td>
<td>Primary Hyperparathyroid</td>
<td>L paraatracheal</td>
<td>Parathyroid adenoma</td>
<td>MTC, parathyroid adenoma</td>
<td>Size unknown</td>
</tr>
<tr>
<td>5</td>
<td>59y</td>
<td>Primary Hyperparathyroid</td>
<td>L paraatracheal</td>
<td>Parathyroid adenoma</td>
<td>Unilocular TC</td>
<td>4 x 1.3 x 0.5 cm</td>
</tr>
</tbody>
</table>

Table I. Comparison of patients’ presentations of cervical thymic cysts.

MTC = Multilocular Thymic Cyst

DISCUSSION

Cervical thymic cysts are rare lesions that are found most frequently in the pediatric population, with 75% of patients being younger than 10 years of age at presentation (1). Ectopic thymus tissue can be present anywhere from the angle of the mandible to the mediastinum, due to the embryological descent of thymic primordia following disconnection from the pharynx during fetal development (2). Most commonly, thymic cysts present as a painless swelling; ten percent can cause hoarseness, dysphagia, or dyspnea (7).

Thymic cysts can be multilocular or unilocular, and this distinction may underlie a difference in pathogenesis. While many congenital thymic cysts appear unilocular and without significant surrounding inflammation, multilocular thymic cysts appear to be the result of an acquired cystic dilation of epithelium-derived structures, induced by an inflammatory reaction of the thymic parenchyma (5). The histopathologic diagnosis of cervical thymic cyst depends on the finding of thymic tissue remnants with the presence of pathognomonic Hassall’s corpuscles (10). The treatment is complete excision of the mass with preservation of the surrounding structures; possible mediastinal extension must be considered (1).

The differential diagnosis for lateral cystic neck masses in an adult includes branchial cleft cyst, thyroglossal duct cyst, lymphatic malformation, dermoid cyst, lymphadenopathy, lymphoma, cystic nodal metastasis, thyroid and parathyroid cyst, laryngocele, and venous malformation (6). The main congenital entity to be differentiated from a cervical thymic cyst is a third or fourth branchial cyst, as these lesions share predilection for a lateral neck mass and are found in a younger age group. While most cervical cysts in adults are benign, appropriate suspicion for malignancy must dictate operative planning.

1. Cervical thymic cysts are rare benign lesions that should be considered in the differential diagnosis of cystic neck masses in adults.
2. The treatment is complete excision of the mass with an excellent long-term prognosis.
3. While most cervical cysts in adults are benign, appropriate suspicion for malignancy must dictate operative planning.

CONCLUSIONS

REFERENCES