

Mixed Multilocular Ectopic Thymic Cyst with Parathyroid Element Presenting as Neck Mass

Dear Editor,

Thymus and inferior parathyroids usually develop from the third pharyngeal pouch around the sixth foetal week. The inferior parathyroids separate from the thymic tissue and remain close to lower pole of the thyroid, while the thymus descends into the mediastinum. During thymic migration, small fragments of thymus may separate and attach themselves to any site along this route. Parathyroid tissue may be seen close to or embedded within the thymus as a result of their common origin and path of descent.¹⁻⁴ Third branchial apparatus anomalies are rare and constitute less than 1% of all cases of branchial anomalies cases.⁵

Case Report

An 8-year-old girl presented with swelling in the upper left side of neck, which was gradually increasing in size since the year before. On examination, a left-sided cervical mass was identified above the thyroid cartilage, measuring 3 x 3 cm. The mass was fluctuant and non-tender. The ultrasound examination (USG) revealed a 4.6 x 3.9 cm iso-echoic well-defined lesion in upper and middle part of neck on the left side, confined to the anterior triangle. Intraoperatively, the

lesion was medial to sternocleidomastoid muscle, encasing the carotid vessels and abutting the inferior margin of left submandibular gland. The mass was excised and sent for histological evaluation. We received the excised specimen measuring 8 x 4 x 2 cm with bosselated surface. On palpation, cystic as well as some solid nodules were appreciated. On cutting open, the cyst contained thin yellowish serous fluid which were grayish yellow to brownish in colour. Tiny brownish projections were seen arising from the cyst wall.

Multiple sections studied from the lesion showed multiple cysts lined by single to double layer of low cuboidal epithelium. The fibrocollagenous cyst wall showed areas of well-delineated thymic tissue composed of lymphoid cells and interspersed Hassall's corpuscles. The adjacent areas showed foci of parathyroid gland tissue consisting entirely of chief cells with eosinophilic cytoplasm (Fig. 1A). Foci of fresh and old hemorrhages were observed along with cholesterol granulomas (Fig. 1B). Based on these findings, the diagnosis of multilocular ectopic thymic cyst with parathyroid element was established. The patient made uneventful recovery and one year follow-up showed no recurrence.

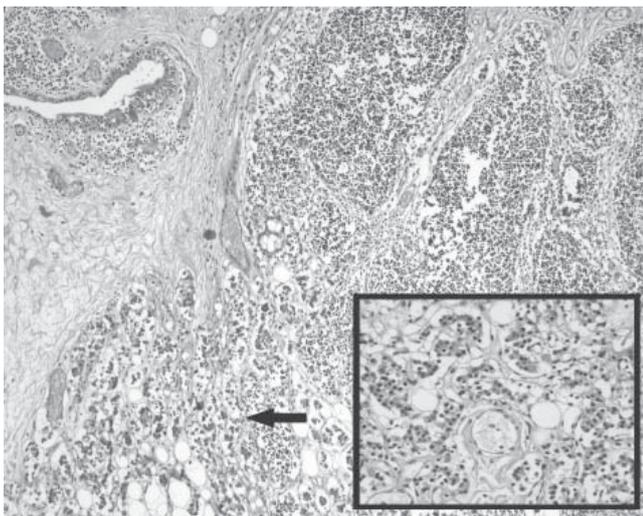


Fig. 1A. Photomicrograph showing thymic tissue with adjacent focus of parathyroid gland element (H & E, 100x). Inset shows closer view of parathyroid gland (H & E, 400x).

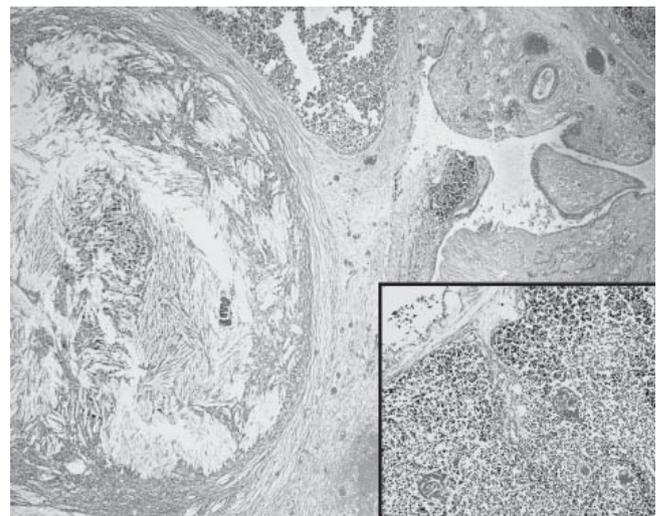


Fig. 1B. Photomicrograph showing thymic tissue with cholesterol granuloma (H & E, 100x). Inset shows closer view of Hassall's corpuscles (H & E, 400x).

Discussion

Branchial anomalies involving the third pouch may present as cysts, sinuses, fistulas, and ectopic glands.² Majority of persistences in the thymopharyngeal duct are located in the left lateral cervical area, as a result of their own embryonic development,³ as was also noted in our case. Their incidence is low, accounting for 0.5% to 1% of congenital malformations of the neck.⁵ Thymic cysts may also adhere to surrounding structures, such as carotid artery and jugular vein⁴ as was observed in our case. Complete surgical excision can be difficult in such cases due to fibrosis as the root cause being recurrent infections.³ A review of literature shows that in most of the cases, patients were asymptomatic and presented with a cervical mass,⁴ as in this case. No cases of recurrence have been reported following excision of a cervical thymic cyst.⁴

Our experience in this case indicates the importance of considering the possibility of third branchial pouch developmental anomaly as one of the differential diagnosis in patients presenting with mass lesion in the neck. The histopathological examination is of paramount importance as this condition is curative after surgical excision.

Pathak Gayatri,^{1MD}, Deshmukh Sanjay,^{1MD},
Naik Ajay,^{2MS}, Ashturkar Amrut,^{1MD}

¹Department of Pathology, Shrimati Kashibai Navale Medical College and General Hospital, Narhe

²Department of Surgery, Shrimati Kashibai Navale Medical College and General Hospital, Narhe

Address for Correspondance: Dr Gayatri Pathak, Department of Pathology, Shrimati Kashibai Navale Medical College and General Hospital, Narhe, Pune-41, India.

Email: drgayatridp@yahoo.in

REFERENCES

1. Hester TO, Jones RO, Haydon RC. Anomalies of the branchial apparatus: a case report and review of embryology, anatomy and development. *J Ky Med Assoc* 1994;92:358-62.
2. Charous DD, Charous MT, Cunnane MF, Spiegel JR. A third branchial pouch cyst presenting as a lateral neck mass in an adult. *Ear Nose Throat J* 2006;85:754-7.
3. Batuecas Caletrió A, Blanco Pérez P, Santa Cruz Ruiz S, Serradilla LópezJM, González Sánchez M, Moreno Jiménez D, et al. Persistence of the third branchial arch. *Acta Otorrinolaringol Esp* 2006;57:193-5.
4. Daneshbod Y, Banani A, Kumar PV. Aberrant thymus and parathyroid gland presenting as a recurrent lateral neck mass: a case report. *Ear Nose Throat J* 2006;85:452-3.
5. Edmonds JL, Girod DA, Woodroof JM, Bruegger DE. Third branchial anomalies. Avoiding recurrences. *Arch Otolaryngol Head Neck Surg* 1997;123:438-41.