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CASE REPORT

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Foregut Duplication Cyst a Novel Finding Mimicking a Necrotic Lymph Node, Case Report

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Introduction

Foregut duplication cysts are rare congenital anomalies of enteric origin found mostly in children and rarely in adults. In many instances, they are asymptomatic and are found incidentally, when the chest is imaged. However, it can also cause symptoms such as chest pain, cough, dysphagia, and dyspnea via compression of the surrounding structures. An alternative presentation may occur when the cyst becomes infected [1].

They usually represent a challenging diagnostic problem. Conventional imaging tests do not lead to a conclusive diagnosis. The cyst may be simple or contain layering debris. CT images will demonstrate a cyst with variable density depending on cystic contents. Also, it accurately establishes the location of the cyst in relation to the gastrointestinal wall and to the mediastinum [2].

We present in this case report of a paraoesophageal cyst that was incidentally found in PET/CT study done for an adult with classic Hodgkin Lymphoma, mistakenly reported as paravertebral necrotic lymph node in initial imaging and follow-up scans.

A Case Study

A 23-year-old Lady was first referred to our institution for neck swelling, underwent contrast enhanced neck and chest CT (Figure 1) which revealed; Multiple giant matted conglomerations of lymph nodes noted in the neck, supraclavicular region, superior mediastinum, anterior mediastinum, pre-tracheal space, right paratracheal space and perivascular space as well as a large right lower paraoesophageal lymph node. The findings are strongly suggestive of lymphoma. In order to confirm the diagnosis, a biopsy from neck lymph nodes was taken and the result showed; morphology and Immunohistochemistry are highly suggestive of Classic Hodgkin Lymphoma.

She had the initial staging 18-F-FDG PET/CT (Figure 2), which revealed supra-diaphragmatic, stage IIB lymphoma. She underwent subsequent interim-PET/CT to assess mid-treatment disease response which revealed a partial treatment response and a necrotic upper paravertebral necrotic lymph node at T8 vertebral body. However, in the third PET/CT (Figure 3) scan there was a complete metabolic response and a stable right paravertebral lesion. This finding was not consistent with the overall disease response and upon retrospectively review of the old images for this patient that included both contrast enhanced CT and 18-F-FDG PET/CT, this well-defined cystic lesion in the right para-vertebral area at the level of T8 vertebral body, measuring 2.2 x 3.2 cm lesion has no interval change in the size, metabolic activity, and morphology. Hence, it is likely due to benign etiology such as Para esophageal/Bronchogenic cyst rather than a necrotic lymph node.

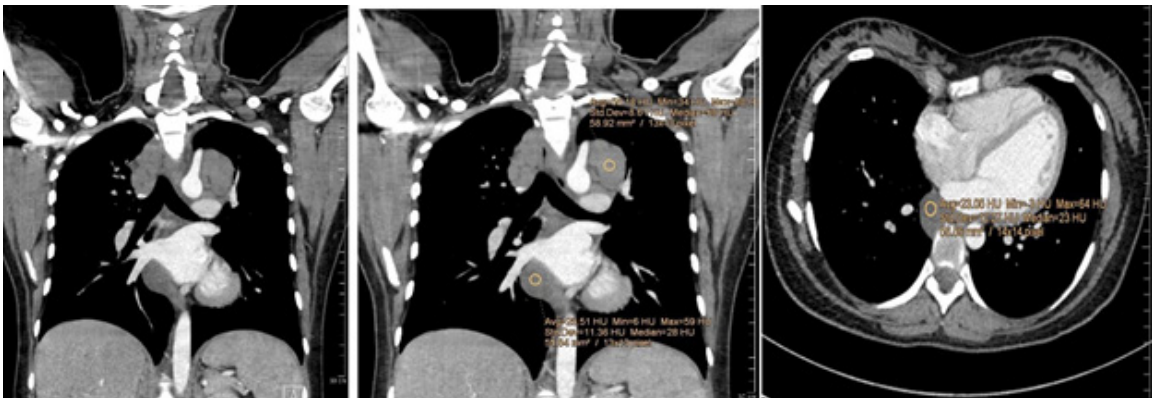

Figure 1: Contrast enhanced neck and chest CT selected coronal images revealed multiple conglomerations of lymph nodes in the supraclavicular region, superior mediastinum, anterior mediastinum, right paratracheal space and perivascular space with HU of 53 with findings are suggestive of lymphoma. Selected axial image showed right lower paraoesophageal lesion with HU 28, suggestive of a cyst.

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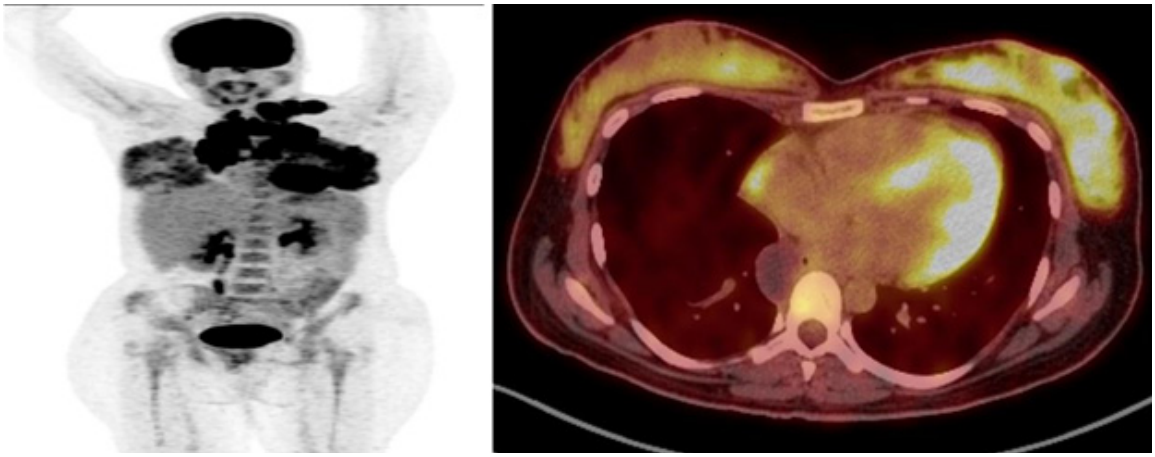

Figure 2: MIP image of 18-F-FDG PET/CT for initial staging, showed highly metabolic active supra-diaphragmatic lymph nodes, in keeping with stage IIB lymphoma. Selected axial fused PET/CT image appeared non-FDG avid right paraoesophageal lesion.

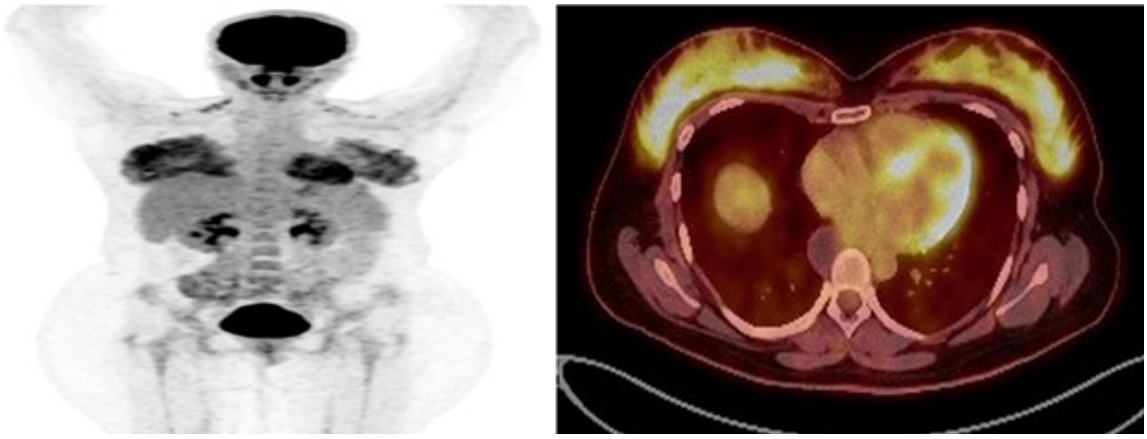

Figure 3: MIP image of 18-F-FDG PET/CT for end treatment assessment, showed a complete metabolic response. Selected axial fused PET/CT image revealed stable size, metabolic activity and morphology of right paraoesophageal lesion.

Discussion

Foregut duplication cysts are quite rare malformations, comprising approximately 10% of all mediastinal tumors [3]. They are mostly found in neonates and infants, with a slight male preponderance [4]. In our study, the cyst is in the paraoesophageal area, inseparable from the esophageal wall, and remained stable in size and characteristic during at least 2 years of follow up. The most likely differential diagnosis for this case is foregut duplication cysts; either bronchogenic or esophageal duplication cysts and less likely necrotic cysts.

Foregut duplication cysts develop from rests of foregut epithelium and can be found anywhere along the gastrointestinal tract. Example of foregut derivative organs are the pharynx, lower respiratory tract, esophagus, stomach, duodenum, and hepatobiliary system, which lined by different cell types, including squamous epithelium, gastric mucosa, and ciliated respiratory epithelium.

Paraoesophageal cysts are commonly found in the lower third of the esophagus and the remaining are found in the upper or middle third of the esophagus [5]. Patients with esophageal duplication cysts often remain asymptomatic, however those that become symptomatic are usually present during childhood [6]. During adulthood most esophageal duplication cysts are found incidentally while patients are undergoing work-up for unrelated conditions.

When the cyst is closely adherent to the esophagus, distinction from an intramural esophageal cyst may be difficult. Hence, pathological correlation is required.

The presence of a double layer of smooth muscle with no evidence of cartilage, likely the cyst is esophageal in origin. Cysts containing cartilage plates and/or glands in their walls, can be considered as respiratory in origin [7].

Computed tomography will clarify the relationship of the mass to adjacent mediastinal structures and may also assist in percutaneous guided aspiration. In asymptomatic patients with a round to oval, non-enhancing, thin walled, cystic mass demonstrated on CT, a thoracotomy may be avoided, and the patients may be followed by chest radiography [8].

Nowadays, endoscopic ultrasound can be used in the case of difficult preoperative diagnosis of a para-esophageal mass. It is a safe and very useful procedure to clearly distinguish cystic from solid masses as well as defining the intra and extramural extent of the lesion [9].

Conclusion

Foregut duplication cysts of the esophagus are infrequent and mostly asymptomatic. Although uncommon, should be included in the differential diagnosis of mediastinal cysts. This clinical case demonstrates the diagnostic challenges of a cystic mass of the posterior mediastinum including paraoesophageal cysts, especially in asymptomatic patients, imaging has a major contribution in establishing the diagnosis, eliminating differential diagnoses, and guiding the surgical treatment.

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