Unusually large thymus showing involution - a case report

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Case Report

Abstract

The most superficial structure in the superior mediastinum, the thymus, usually continues to grow up to the age of 5-6 yrs and progressively involutes thereafter. It hardly weighs more than 10 gms in an adult. During routine dissection of a cadaver in the Anatomy Department, Government Medical College, Thrissur, an unusually large thymus was noticed in the superior mediastinum extending into the anterior mediastinum. After histological examination of the same by the Pathologist, it was concluded as a case of thymus showing involution rather than a Thymoma or a Thymic Hyperplasia.

Key words: thymic hyperplasia, thymoma, anterior mediastinum

Introduction

The weight of the thymus gland in man is greatest in proportion to body weight at the time of birth; the absolute weight continues to increase to reach peak weights around the time of puberty. Subsequently thymic weight is supposed to decline during a process of age related involution. Thus, thymic weights of 12-15 gms at birth, 30-40 gms at puberty and 10-15 gms at the age of 60 years are quoted by Kendall et al in their study. The thymic tissue may enlarge after puberty as is seen in Thymic Hyperplasia, Thymic neoplasms or Myasthenia Gravis.

Case Report

An unusually large thymus was noticed in a 60 year old male cadaver during the routine dissection at the Dept of Anatomy, Government Medical College, Thrissur, Kerala. It was noticed in the superior mediastinum extending into the anterior mediastinum and reaching upto the root of Aorta. It measured 11.5 cm in length, 10.5 cm in width and thickness of 0.8 cm. It weighed 25 gms. (see fig. 1 & 2). It was seen anterior to brachiocephalic vein and was adherent to it. Thyroid was seen separately from the thymus as there is a chance of thyroid seen in mediastinum in certain cases of thymic enlargement. A detailed microscopic workup was done with the thymic tissue and expert opinion was obtained from the pathologist. The result came as thymus tissue showing involution rather than thymoma or thymic hyperplasia (fig. 3).

Discussion

The thymus is composed of two distinct lobes, each surrounded by a collagenous capsule with septa extending into the corticomедullary junction, dividing the cortex further into lobules. The number of thymic lobules may decrease as a function of age, particularly at the periphery of the organ. In true thymic hyperplasia [TTH] macroscopically the thymus is massively enlarged compared with the thymus in controls of the same age and even with the upper limit of normal thymus weight (about 50 gms). The microscopic appearance of TTH is that of a nearly normal thymus without lymphoid follicles with activated germinal centers. True thymic hyperplasia must be differentiated from other pathological conditions such as thymoma of the cortical type with areas of medullary differentiation ("organoid" thymoma), lymphoid follicular hyperplasia of the thymus, thymolipoma, and mediastinal lymphoblastic lymphoma. Clinically, TTH and thymoma can be distinguished by the more aggressive behavior of the latter, which can cause symptoms related to invasion such as pain and superior vena caval syndrome rather than compressive symptomatology. Thymolipoma is another cause of

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massive thymic enlargement in young patients. This peculiar thymic condition sometimes displays a bilobulate appearance on computed tomographic sections and can confuse the differential diagnosis. Histologically there is a prevalence of mature fatty tissue. Chemical shift MR imaging can be used to differentiate thymic hyperplasia from thymic tumors. Thymic extension in the superior mediastinum can cause false-positive findings on 18FDG PET/CT. A soft-tissue nodule representing thymic hyperplasia can be seen at a location anteromedial to the left brachiocephalic vein. In the present case even though the thymus is enlarged, it doesn't show any of the features suggesting a pathology of thymus.

Conclusion

An enlarged thymus in the superior mediastinum extending into the anterior mediastinum may show involution and need not be always pathological. Similarly an involuting thymus may have the size it attained during the pubertal phase & need not always shrink back to a small size during involution. This is important while dealing with a mass in the mediastinum of thymic origin.

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References


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