



Short Communication

## Persistence of Thymus Gland in Old Age

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### ABSTRACT

**Objectives:** The persistence of normal thymic tissue in old age is rare. Usually it undergoes involution and regressive size as the age advances and replaced by adipose tissue. Due to paucity of literature regarding persistence of thymus gland in Maharashtra region, we decided to undertake this study in old age.

**Methods:** During routine cadaveric dissection in Anatomy department, the persistence of thymus gland was observed in two cases. The morphometric analysis of the glands was done and their weight was measured.

**Results:** The found thymus gland is large in size as if in children and its structure is confirmed as normal thymus by detailed microscopic examination.

**Conclusion:** The knowledge of this study is helpful for pathologists and surgeons operating in this region.

**Keywords:** Thymus gland, involution, morphometry.

### INTRODUCTION

The thymus is one of the central lymphoid organs. It is bilobed structure, <sup>[1]</sup> situated in the superior mediastinum between the sternum and great vessels. In new born child in which it is relatively much larger than in adults. <sup>[2]</sup> The thymus grows rapidly during embryonic life and childhood, reaching its maximum absolute size about the time of puberty; thereafter growth ceases and it involutes gradually until the old age, when the gland is often smaller than at birth. This age involution is shown by a decrease in the overall weight of the organ associated with lymphoid tissue atrophy and

replacement by mature adipose tissue. <sup>[3]</sup> Due to paucity of literature regarding persistence of thymus gland in Maharashtra region, we decided to undertake this study in old age.

### MATERIALS AND METHODS

During routine cadaveric dissection in the Dept of Anatomy, ARMCHRC, Kumbhari, Solapur, we got persistence of thymus gland in two cadavers out of 18. Both the cadavers were males. Location of each gland is noted and then they were cleaned off surrounding structures.

Each gland was weighed in grams on an electric balance. The morphometric measurements such as length, breadth and thickness of each gland were measured by vernier caliper. Then detailed microscopic examination was done and expert opinion was obtained from the pathologist.

## RESULTS

Table No.1: Showing Measurements taken are as follows-

	Lobes	Length(cm)	Breadth(cm)	Thickness(cm)	Weight(gms)
Specimen I	Right	5	5	1.5	9.94
	Left	3.5	3.5	1.3	
Specimen II	Right	3	2.5	1	3.38
	Left	2	1	0.7	

Found specimens were confirmed as normal thymus gland by detailed microscopic examination. Expert opinion by pathologist revealed that this tissue is showing normal involutionary pattern and is devoid of any pathological changes.

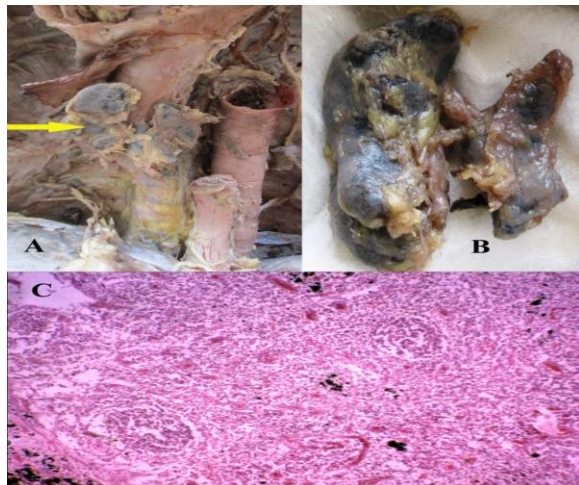


Fig:1 - Persistence of thymus gland in Specimen I ( A- arrow showing its location, B- actual gland and C- Microscopic appearance)

## DISCUSSION

The human thymus, after an initial burst of rapid growth in childhood and early adolescence, undergoes progressive atrophy.<sup>[4]</sup> Many researchers such as Krishna Murthy,<sup>[5]</sup> Hasini H S<sup>[6]</sup> have studied weight, age changes, location and other morphometric parameters of thymus gland

Persistence of thymus gland found in two specimens. Both thymus glands were situated in the superior mediastinum. Specimen I was located lateral to thyroid cartilage. Specimen II was located on the bifurcation of trachea. Both glands were bilobed and their measurements were noted. Measurements are shown in Table no.1.

but their study is limited to fetus only. Weekamp et.al,<sup>[7]</sup> Tosi et.al,<sup>[8]</sup> Simpson,<sup>[3]</sup> Jayanti Singh<sup>[4]</sup> and Lymch et.al<sup>[9]</sup> studied involution and age changes of thymus gland in adults.

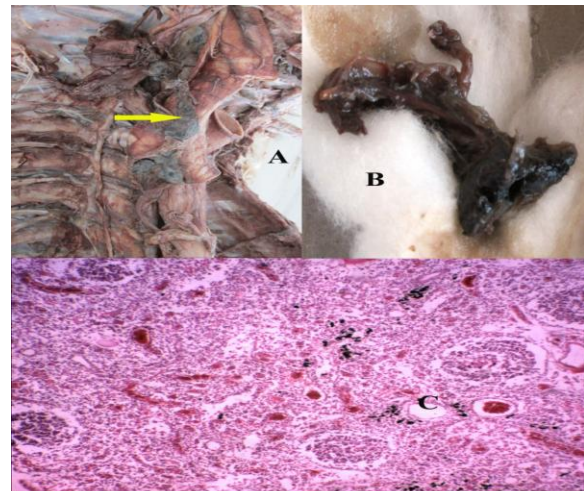


Fig : 2 - Persistence of thymus gland in Specimen II (A- arrow showing its location, B- actual gland and C- microscopic appearance)

Rosemol Xaviour, Girijamony V K, Sheela B<sup>[10]</sup> found a case of unusually large thymus weighing 25gms in 60 year old male cadaver showed features of involution. Our findings are in correlation with this study.

In standard textbooks of Anatomy like Cunningham, it is stated that in old age, thymus gland commonly weighs only about 10gms.<sup>[2]</sup> In the present study, thymic tissue

in both cases weighs 9.94gms and 3.38gms respectively and it is devoid of any pathological features.

## CONCLUSION

Thymus glands are large in size, situated in superior mediastinum and histologically examined and confirmed as thymic tissue. Though in many literatures, it is stated that the thymus gland is replaced by adipose tissue in old age but in present study, we found its persistence in two cases. The knowledge of this study may be helpful to pathologists, surgeons and radiologists while dealing with any mass in the neck region.

Though the sample size is limited in the present study, we recommend that detailed study of thymus gland in different age groups, comparison between them as well as changes occurring in those groups should be conducted to enhance the knowledge regarding persistence and involutionary pattern of thymus gland.

## ACKNOWLEDGEMENT

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