



# Pathological characteristics of mediastinal masses in Sri Lanka 2017–2021: a retrospective observational study

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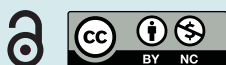
To the Editor:

Mediastinal masses are a relatively uncommon entity with diverse clinicopathological characteristics [1]. They encompass ~3% of thoracic tumours [2]; however, precise estimates of incidence remain unclear. Furthermore, correlating demographic characteristics such as age and sex with radiological and laboratory findings is important to make a clinical diagnosis. We have previously reported a pathological analysis of mediastinal masses in Sri Lanka in the year 2017 [3]. Here, we report the results of a 5-year continuation of our previous study.

We conducted a retrospective observational study among patients referred to the National Hospital for Respiratory Diseases (NHRD; Welisara, Sri Lanka) from 2017 to 2021. Being the ultimate referral centre for patients with mediastinal masses in Sri Lanka, we could recruit a nationally representative patient sample from the NHRD. We included all patients who underwent histopathological analysis of mediastinal masses during this period and excluded patients with thyroid and tracheo-oesophageal masses and those with inconclusive histological diagnoses (n=30). We analysed demographic and pathological characteristics and their associations.

The study sample comprised 550 patients (male 304, female 246). The age of the participants ranged from 1 to 83 years (mean±SD 43±17 years). The mediastinal masses were distributed in the anterior (55.5%, n=305), middle (24.5%, n=135), superior (11.1%, n=61) and posterior (8.9%, n=49) mediastina (in descending frequency). Overall, the most common mass was due to thymic lesions (31.1%, n=171) followed by lymphoma/leukaemia (18.2%, n=100) (table 1). The most common masses in the anterior, middle, posterior and superior mediastina were thymic lesions, lymphadenopathy due to infectious/inflammatory diseases, sarcoma and lymphoma, respectively. Among thymic masses, 114 (66.7%) out of 171 were thymoma with predominantly type AB thymoma (36 out of 114), followed by type B2 (34 out of 114), type B1 (21 out of 114), type B3 (15 out of 114), mixed B1/B2 (three out of 114), type A (two out of 114), micronodular (two out of 114) and mixed B2/B3 (one out of 114). Germ-cell tumours and lymphoma were commonly found in young patients (one-way ANOVA with *post hoc* Tukey comparisons  $F=22.7$ , degrees of freedom (df)=8;  $p<0.001$ ). Germ-cell tumours were more common in males, while lymphoma/leukaemia were more common in females (Pearson's Chi-squared test with *post hoc* Bonferroni correction Chi-squared=23.3, df=8;  $p<0.05$ ).

Mediastinal masses are commonly diagnosed among patients in their third to fifth decades, with a male preponderance [2]. The majority of the masses are located in the anterior mediastinum [1]. In line with previous reports, we observed similar demographic and histopathological patterns of mediastinal masses in our study population. When considering age and sex distribution of mediastinal masses, Hodgkin lymphomas and diffuse large B-cell lymphomas (the most common histological type of non-Hodgkin lymphoma found in the mediastinum) are predominantly diagnosed in young females [1, 4], while mediastinal germ cell tumours are predominantly found in young males [1], corroborating our analysis. The ratio of benign to malignant neoplasms varies widely across studies, with a gradually increasing incidence of malignant neoplasms over the past four decades [2, 5]. However, approximately two-thirds of the mediastinal masses in our study were benign neoplastic lesions. The most frequent malignant tumours encountered were thymoma and lymphoma. The distribution of histological subtypes of thymoma in our population was comparable with



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The integration of patient demographic characteristics with clinical and radiological features helps establish accurate presumptive diagnosis of mediastinal masses, which, in turn, ensures timely initiation of treatment and improves prognosis <https://bit.ly/3vB3zCw>

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**TABLE 1** Frequencies of sex and age of 550 consecutive mediastinal masses encountered in a 5-year period (2017–2021) at the National Hospital for Respiratory Diseases (Welisara, Sri Lanka)

	Subjects	Sex		Age (years)	
		Male	Female	Range	Mean±SD
<b>Thymic lesions</b>	171	100	71	12–83	49±17
Cyst	10	7	3	12–68	38±18
Hyperplasia	14	6	8	12–59	28±15
Thymolipoma	1	1	0	34	34
Thymoma	114	57	57	15–82	53±14
Thymic carcinoma (type C)	19	17	2	17–83	52±19
Carcinoid tumour	13	12	1	19–71	46±14
<b>Lymphoma/leukaemia</b>	100	45	55	11–75	33±13
Non-Hodgkin lymphoma	56	33	23	11–75	35±15
Hodgkin lymphoma	40	12	28	13–59	29±10
Unclassified	4	0	4	30–38	35±4
<b>Infectious/inflammatory diseases</b>	75	35	40	17–78	46±15
Tuberculosis	17	4	13	17–59	33±13
Sarcoidosis	35	17	18	17–74	50±12
Granulomatous inflammation unclassified	19	12	7	17–78	50±15
Rosai–Dorfman disease	2	0	2	17–33	25±11
Sinus histiocytosis	2	2	0	63–63	63±0
<b>Germ-cell tumours</b>	67	50	17	3–59	28±11
Seminoma	11	11	0	18–43	25±9
Teratoma	37	20	17	3–59	29±12
Malignant nonseminomatous tumours	19	19	0	5–53	27±12
<b>Metastasis</b>	58	38	20	20–75	56±11
<b>Benign connective tissue tumours</b>	34	18	16	1–72	47±20
Castleman disease	2	2	0	34–57	45±16
Lipoma	1	0	1	69	69
Angioma	3	2	1	25–71	52±24
Schwannoma	21	13	8	23–72	51±15
Neurofibroma	1	0	1	56	56
Ganglioneuroma	6	1	5	1–64	26±25
<b>Developmental cysts</b>	13	6	7	19–66	49±16
Bronchogenic	7	4	3	19–58	40±15
Pleuro-pericardial	2	1	1	42–64	53±16
Unclassified	4	1	3	59–66	63±3
<b>Sarcoma</b>	28	11	17	18–73	42±16
<b>Other unclassified tumours</b>	4	1	3	5–44	24±16

Data are presented as n, unless otherwise stated.

the Western figures [1]. However, in contrast to previous reports [2], we found a higher incidence of non-Hodgkin lymphoma (n=56) compared to Hodgkin lymphoma (n=40). Among non-neoplastic lesions, we encountered a substantial number of cases with infectious/inflammatory masses encompassing granulomatous lymphadenopathy due to sarcoidosis (n=35) and tuberculosis (n=17). While the prevalence of tuberculous mediastinal lymphadenopathy in the region's developing countries is reported to be considerably high [2], sarcoidosis has long been considered a rare clinical entity in Sri Lanka.

Comparing the epidemiological patterns of mediastinal masses between different series is difficult because of the absence of a universal selection criterion. Lesions such as infectious processes, inflammatory diseases (sarcoidosis, mediastinitis), cysts, metastases, mediastinal goitres and cardiac and vascular lesions are variably included as mediastinal masses in different studies. However, the overall epidemiological patterns of the different mediastinal masses in Sri Lanka were largely similar to the reports from other countries. The integration of patient demographic characteristics with clinical and radiological features helps establish accurate presumptive diagnoses of mediastinal masses, which, in turn, ensure timely initiation of treatment and improve prognosis [1]. Therefore, clinicians should be mindful of the regional epidemiological patterns of the histopathological characteristics of mediastinal masses.

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Data availability: The original contributions presented in the study are included in the article. Further inquiries can be directed to the corresponding author.

Conflict of interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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