Original article

doi:10.5633/amm.2026.0323

PRIMARY MEDIASTINAL MASSES: A RETROSPECTIVE ANALYSIS OF 202 CASES

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Primary mediastinal masses (PMMs) are lesions of local origin, exhibiting wide variation in pathology and clinical presentation. Our study aims to describe their basic epidemiological and clinicopathological features. We retrospectively analyzed data from 202 patients who had undergone surgery for PMMs at a single, tertiary healthcare center within an approximately 7-year period. With a proportion of 28.7%, thymic epithelial tumors (TETs) were the most common pathology in our series. They were followed by mediastinal cysts (MCs) (28.2%), primary mediastinal lymphomas (PMLs) (21.8%), neurogenic tumors (NTs) (9.9%), mesenchymal tumors (MTs) (6.4%), and germ cell tumors (GCTs) (5.0%). In terms of sex distribution, MCs were significantly more frequent in females (71.9%), whereas GCTs predominated in males (70.0%) ($p<0.05$). The anterior compartment was the most commonly affected mediastinal region (70.3%), with all PMM types except NTs predominantly located there, while the latter occurred almost exclusively in the posterior compartment ($p<0.00001$).

The distribution of different lesions was also correlated with patient age, such that individuals over 40 years more frequently had TETs and MCs, whereas PMLs and GCTs were more frequently observed in patients under 40 years. Concerning treatment, the video-assisted thoracoscopic (VATS) approach was associated with a shorter median hospital stay compared to traditional surgical methods ($p<0.05$).

Keywords: mediastinal lesions, thymomas, mediastinal cysts, surgical treatment, video-assisted thoracoscopic

Originalni rad

doi:10.5633/amm.2026.0323

PRIMARNE MEDIJASTINALNE MASE: RETROSPEKTIVNA ANALIZA 202 SLUČAJA

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Primarne medijastinalne mase (engl. *primary mediastinal masses*, PMM) su lezije lokalnog porekla, koje ispoljavaju veliku raznolikost u pogledu patologije i kliničke prezentacije. Cilj naše studije bio je da se prikažu njihove osnovne epidemiološke i kliničko-patološke karakteristike. Retrospektivno smo analizirali podatke 202 pacijenta operisana zbog PMM u jednoj tercijarnoj zdravstvenoj ustanovi tokom perioda od približno 7 godina. Sa udelom od 28,7%, epitelni tumori timusa (engl. *thymic epithelial tumors*, TET) su bili najzastupljeniji histološki tip tumora u uzorku. Sledile su ih medijastinalne ciste (engl. *mediastinal cysts*, MC) (28,2%), primarni medijastinalni limfomi (engl. *primary mediastinal lymphomas*, PML) (21,8%), neurogeni tumori (engl. *neurogenic tumors*, NT) (9,9%), mezenhimski tumori (engl. *mesenchymal tumors*, MT) (6,4%) i germinativni tumori (engl. *germ cell tumors*, GCT) (5,0%). Kada je reč o polnoj distribuciji, MC su bile znatno češće kod žena (71,9%), a GCT kod

muškaraca (70,0%) ($p<0.05$). Prednji kompartman bio je najčešće zahvaćen predeo medijastinuma (70,3%), pri čemu su svi navedeni tipovi PMM, osim NT, bili pretežno lokalizovani u ovoj regiji, dok su potonji gotovo isključivo detektovani u zadnjem kompartmanu ($p<0,00001$). Distribucija različitih lezija bila je u korelaciji i sa starošću ispitanika, u smislu da su pacijenti stariji od 40 godina češće imali TET i MC, dok su PML i GCT bili učestaliji kod osoba mlađih od 40 godina. Što se lečenja tiče, torakoskopski (VATS) pristup je bio praćen znatno kraćim bolničkim zadržavanjem u odnosu na tradicionalne torakohirurške tehnike ($p<0.05$).

Ključne reči: medijastinalne lezije, timomi, medijastinalne ciste, hirurško lečenje, torakoskopski pristup

INTRODUCTION

Primary mediastinal masses (PMMs) are a diverse group of neoplastic and non-neoplastic lesions originating from various anatomical structures within the mediastinum (1,2). They account for approximately 3% of all masses found in the chest and can arise in any of its compartments, affecting individuals of all ages, with no significant sex predominance overall (3,4).

The most frequent PMMs are thymomas, lymphomas, schwannomas, teratomas, and cysts (1,2). In general, their etiology is primarily acquired or developmental rather than hereditary, with inherited forms being exceedingly rare and typically linked to specific syndromic conditions, including neurofibromatosis, multiple endocrine neoplasia, Klinefelter syndrome, or Li-Fraumeni syndrome (5). Clinically, although they are more often detected incidentally during routine radiographic examinations, the most common manifestations include cough, chest pain, fever, dyspnea, and dysphagia. A subset of patients may also present with paraneoplastic syndromes, including myasthenia gravis, pure red cell aplasia, or hypogammaglobulinemia (3,6,7).

Advances in diagnostic techniques (e.g., PET-CT, endobronchial/endoscopic ultrasound, transthoracic percutaneous biopsy) have led to an increased detection rate of PMMs (7). In a large epidemiological study from China involving 40,112 participants who underwent chest CT screening for COVID-19, the prevalence of mediastinal masses was estimated at 7 per 1,000 individuals (4). Moreover, these uncommon lesions encompass a wide spectrum of pathological entities and clinical presentations, posing significant diagnostic and therapeutic challenges and requiring close multidisciplinary collaboration among radiologists, thoracic surgeons, pathologists, oncologists, and other experts. This complexity highlights the need for a tailored, case-by-case management strategy.

The aim of our research is to describe the basic epidemiological and clinicopathological characteristics of PMMs in a cohort of 202 patients treated at the Clinic for Thoracic Surgery, University Clinical Center of Serbia, with a particular focus on surgical management.

PATIENTS AND METHODS

A comprehensive review of institutional databases, including the *Heliant* electronic medical system and operative records, identified a total of 202 adults who underwent surgery for PMMs, ranging from biopsy to complete resection, between 1 January 2019 and 31 October

2025. Patients were included in the study if they had a postoperative histopathological confirmation of a primary mediastinal neoplasm or cyst measuring ≥1 cm in its longest diameter on chest CT. This threshold was used to exclude very small lesions with limited radiological reproducibility and uncertain clinical relevance. Cases without a clear diagnosis, or with findings of (I) thymic hyperplasia, (II) ectopic parathyroid adenomas, (III) retrosternal goiter, or (IV) secondary lymphadenopathy (inflammatory, infectious, or metastatic), were excluded. The first two conditions usually do not appear as "masses" on chest imaging, while the remaining represent secondary pathology.

Every patient included in the study had surgery using one of the standard approaches, video-assisted thoracoscopic surgery (VATS), anterolateral/posterolateral thoracotomy, or median sternotomy, for diagnostic, therapeutic, or both purposes. In addition, each mass was classified into one of six main pathological groups: (I) thymic epithelial tumors (TETs), (II) primary mediastinal lymphomas (PMLs), (III) mesenchymal tumors (MTs), (IV) neurogenic tumors (NTs), (V) germ cell tumors (GCTs), and (VI) mediastinal cysts (MCs), and into one of three anatomical compartments: anterior (AMC), middle (MMC), or posterior (PMC) (8). Their anatomical location was determined using chest CT, which was thoroughly reviewed by an experienced radiologist. When a mass spread across two compartments, it was classified based on the one containing >50% of its volume.

Our study took into account the following factors: lesion size, histological type and subtype, age-related prevalence of various PMMs, distribution by sex and mediastinal compartment, surgical outcome, and median length of postoperative hospital stay according to surgical approach. The latter was analyzed using the Kruskal–Wallis test, followed by Dunn’s post hoc test. The relationship between mass type and sex was evaluated using the Chi-square test, while the association with mediastinal compartment was assessed through Fisher's exact test. Statistical analyses were performed using SPSS Statistics, v.25.0 (IBM Corp., Armonk, NY, USA), with significance set at $p<0.05$.

This research was conducted in accordance with the ethical principles of the Declaration of Helsinki. Ethical approval for the study was granted by the Ethics Committee of the University Clinical Center of Serbia during its session held on May 7, 2026 (decision number: 455/9).

RESULTS

Of the 202 adults included in the study, 111 (55.0%) were female, yielding a female-to-male ratio of 1.2:1 (Table 1).

Patient ages ranged from 18-82, with a mean of 50.7 years. The majority were aged 40-59 years (75/202, 37.1%) (Table 1).

In most cases, PMMs were located in the AMC (142/202, 70.3%) and measured ≥5 cm in their long-axis diameter (115/202, 56.9%) (Table 1).

Approximately, three-quarters of patients (149/202, 73.8%) had surgery for therapeutic reasons (complete resection in 64.4% of cases and partial resection or debulking in 9.4% of cases), with VATS being the most commonly used surgical approach (127/202, 62.9%). The remaining 53 patients (26.2%) had biopsy (Tables 1 and 2).

Table 1. Demographic and clinicopathological data for the study population (N=202).

Variables	***n* (%)**
Sex	
Females	111 (55.0)
Males	91 (45.0)
Age range (years)	
≤19	6 (3.0)
20-39	53 (26.2)
40-59	75 (37.1)
60-79	66 (32.7)
≥80	2 (1.0)
Mass size (largest diameter, cm)	
<5	87 (43.1)
≥5	115 (56.9)
Mediastinal compartment (>50% of the mass volume)	
Anterior	142 (70.3)
Middle	26 (12.9)
Posterior	34 (16.8)
Surgical outcome	
Complete resection	130 (64.4)
Partial resection/debulking	19 (9.4)
Biopsy	53 (26.2)

Table 2. Postoperative median hospital stay in days according to surgical approach (N=202).

Surgical approach	***n* (%)**	**Median (days)**	**IQR (days)**	***p* Value**
VATS	127 (62.9)	3	3-4	*<0.05*, Kruskal–Wallis test
Thoracotomy	56 (27.7)	5	4-6.5	
Sternotomy	19 (9.4)	8	7-12	

Abbreviations: IQR - interquartile range, VATS - video-assisted thoracoscopic surgery.

Table 2 shows the median length of hospitalization according to surgical approach. VATS was associated with the shortest hospital stay (3 days, interquartile range (IQR) 3–4), whereas thoracotomy and sternotomy required longer recovery (5 days, IQR 4–6.5; and 8 days, IQR 7–12, respectively). Differences between groups were significant (Kruskal-Wallis test, $p<0.05$), with all pairwise comparisons remaining significant after Dunn–Bonferroni adjustment.

TETs represented the most common pathology among PMMs, occurring in 58 patients (28.7%). In this group, thymomas were diagnosed in 47 patients, with B1 being the most common subtype (13/202, 6.4%), succeeded by B2 (12/202, 5.9%), A (10/202, 5.0%), AB (8/202, 4.0%) and B3 (3/202, 1.5%). In the remaining 11 cases (5.4%), thymic carcinoma was found - squamous cell carcinoma in 9 cases (4.5%) and undifferentiated carcinoma in 2 cases (Table 3).

Of the 44 adults diagnosed with PMLs, 25 (12.4%) had Hodgkin lymphoma (HL), and 19 (9.4%) had non-Hodgkin lymphoma (NHL) (Table 3).

We identified 13 MTs (6.4%), including 3 solitary fibrous tumors (1.5%), as well as 2 thymolipomas, 2 lymphangiomas, and 2 liposarcomas, along with single cases of lipoma, hemangioma, angiosarcoma, and chondrosarcoma (Table 3).

Taken together, 14.9% of the participants had NTs and GCTs. Schwannomas were the most frequent pathology among the former, accounting for 18 cases (8.9%), followed by single cases of ganglioneuroma and malignant peripheral nerve sheath tumor (MPNST). Regarding GCTs, there were 5 cases of mature teratoma (2.5%), 2 cases of mixed germ cell tumor, 2 cases of seminoma, and one case of yolk sac tumor (Table 3).

Lastly, 57 patients (28.2%) had MCs, with pericardial cysts accounting for the highest frequency (28/202, 13.9%), followed by bronchogenic (16/202, 7.9%) and thymic cysts (13/202, 6.4%) (Table 3).

Our results showed that MCs were significantly more common in females, accounting for 71.9% of cases. On the other hand, GCTs were more frequent in males, comprising 70.0% of cases (Chi-square test, $p<0.05$) (Table 4). Table 4 also shows that anatomical localization was statistically correlated with histological type – NTs were located in the PMC in 95.0% of cases, while 94.8% of TETs were found in the AMC. The AMC was also the most common site for GCTs (90.0%), MCs (75.4%), PMLs (63.6%), and MTs (53.8%) (Fisher's exact test with Monte Carlo simulation, $p<0.00001$).

Table 3. Types, subtypes, and frequencies of PMMs in the study cohort (N=202).

Type of PMM	*n* (%)
Thymic epithelial tumors	58 (28.7)
Thymoma, subtype A	10 (5.0)
Thymoma, subtype AB	8 (4.0)
Thymoma, subtype B1	13 (6.4)
Thymoma, subtype B2	12 (5.9)
Thymoma, subtype B3	3 (1.5)
MTWLS	1 (0.5)
Squamous cell carcinoma	9 (4.5)
Undifferentiated carcinoma	2 (1.0)
Primary med. lymphomas	44 (21.8)
Hodgkin lymphoma	25 (12.4)
Non-Hodgkin lymphoma	19 (9.4)
Mesenchymal tumors	13 (6.4)
Lipoma	1 (0.5)
Thymolipoma	2 (1.0)
Solitary fibrous tumor	3 (1.5)
Hemangioma	1 (0.5)
Lymphangioma	2 (1.0)
Liposarcoma	2 (1.0)
Angiosarcoma	1 (0.5)
Chondrosarcoma	1 (0.5)
Neurogenic tumors	20 (9.9)
Schwannoma	18 (8.9)
Ganglioneuroma	1 (0.5)
MPNST	1 (0.5)
Germ cell tumors	10 (5.0)
Seminoma	2 (1.0)
Yolk sac tumor	1 (0.5)
Mature teratoma	5 (2.5)
Mixed germ cell tumor	2 (1.0)
Mediastinal cysts	57 (28.2)
Bronchogenic cysts	16 (7.9)
Pericardial cysts	28 (13.9)
Thymic cysts	13 (6.4)

Abbreviations: MPNST - malignant peripheral nerve sheath tumor, MTWLS - micronodular thymoma with lymphoid stroma.

Table 4. Distribution and frequency (n, %) of different PMM types by sex and anatomical compartment (N=202).

Type of PMM	Sex		Mediastinal compartment			Total
	Females	Males	Anterior	Middle	Posterior	
Thymic epith. tumors	30 (14.9)	28 (13.9)	55 (27.2)	3 (1.5)	0 (0.0)	58 (28.7)
Prim. med. lymphomas	19 (9.4)	25 (12.4)	28 (13.9)	14 (6.9)	2 (1.0)	44 (21.8)
Mesenchymal tumors	6 (3.0)	7 (3.5)	7 (3.5)	1 (0.5)	5 (2.5)	13 (6.4)
Neurogenic tumors	12 (5.9)	8 (4.0)	0 (0.0)	1 (0.5)	19 (9.4)	20 (9.9)
Germ cell tumors	3 (1.5)	7 (3.5)	9 (4.5)	1 (0.5)	0 (0.0)	10 (5.0)
Mediastinal cysts	41 (20.3)	16 (7.9)	43 (21.3)	6 (3.0)	8 (4.0)	57 (28.2)
Total	111 (55.0)	91 (45.0)	142 (70.3)	26 (12.9)	34 (16.8)	202 (100.0)

***p* Values**	*<0.05*[1]	*<0.00001*[2]	

[1]Chi-square test; [2]Fisher's exact test with Monte Carlo simulation (100,000 iterations).

Age-specific variations are shown in Figure 1. With 46.6% and 40.4% of cases, respectively, TETs and MCs were most frequently observed in the 60–79 age category. GCTs were detected predominantly (90.0%) in patients younger than 40 years, whereas PMLs had the highest prevalence (52.3%) in the 20–39 age group, and NTs (60.0%) in those aged 40–59 years.

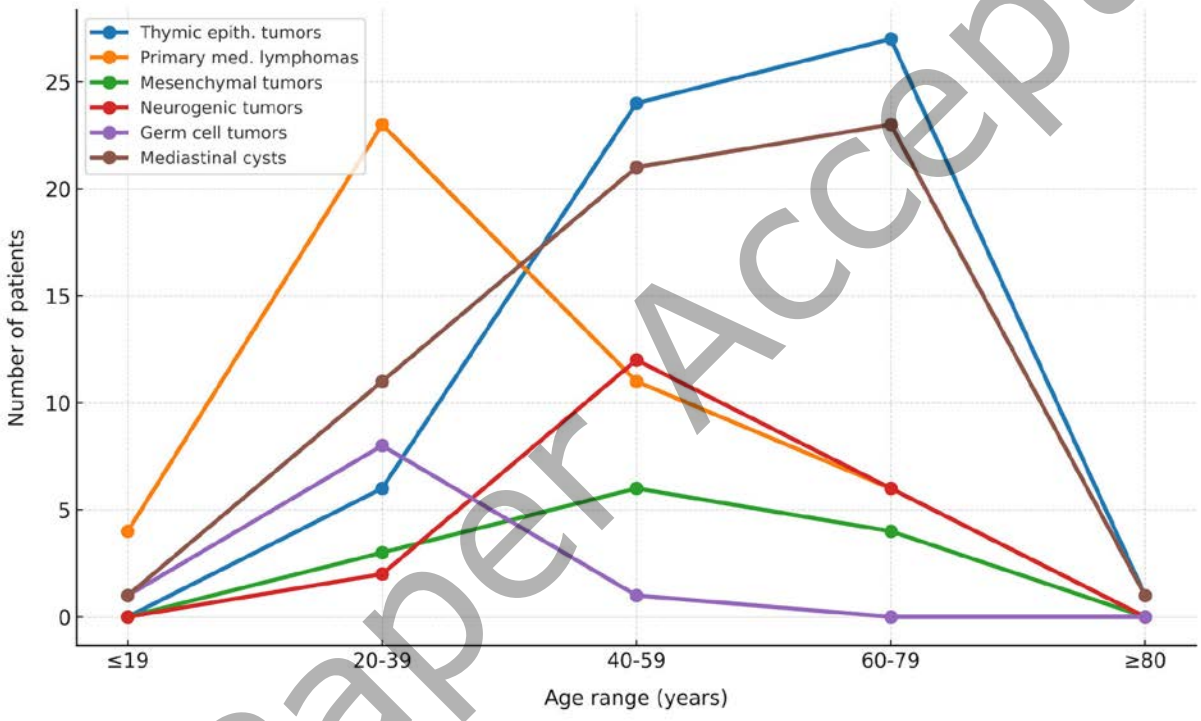

Figure 1. Trends in the occurrence of different PMM types across age groups.

DISCUSSION

Situated in the middle of the thorax, the mediastinum lies between the two pleural cavities laterally, the thoracic inlet superiorly, and the diaphragm inferiorly. It contains fundamentally important structures and organs, such as heart, great vessels, trachea, and esophagus. For precise anatomical classification of different pathological conditions, the mediastinum is conventionally separated into the AMC, MMC, and PMC (8). In the present study, the AMC was affected in 70.3% of cases, which is consistent with previous reports identifying it as the most frequently involved region, with rates ranging from 68-86% (4,9–11). Differences

in reported frequencies may be due to variations in study design, sample sizes, anatomical landmarks, and the range of lesions included. By contrast, masses in the MMC are the rarest (mainly MCs and PMLs) and almost invariably represent tumor extension from the AMC or PMC (12).

With a prevalence of 38.7% in the AMC and 28.7% overall, TETs represented the most common pathology in our study. Among these, we identified 47 thymomas and 11 thymic carcinomas. Thymomas are usually encapsulated and slow-growing tumors that may occasionally infiltrate the pleura or pericardium and rarely metastasize (1,5). In this context, they are classified as low-risk (A, AB, and B1) and high-risk (B2 and B3) subtypes (6). B1 subtype accounted for 6.4% of all recorded PMMs, making it the most commonly observed variant. Other studies, however, have reported different predominant forms. For example, Szolkowska *et al.* (1) found subtype AB, while Ghigna *et al.* (5) reported B2 as the most common, each with a frequency of 7.3%. Existing discrepancies likely reflect differences in sample sizes, as the aforementioned studies included 1,005 and 942 participants. These tumors are most commonly diagnosed in individuals over 40 years of age (5,7), while the most frequent thymic malignancy, squamous cell carcinoma, typically occurs in the 6th to 8th decades of life (1,5,13).

MCs accounted for 28.2% of all PMMs, consistent with reported ranges of 12–30% (14-16). They are classified into foregut-derived cysts (bronchogenic and enteric), mesothelial cysts (pericardial), thymic cysts, and other rare entities such as thoracic duct cysts and meningoceles (14). In general, these lesions may be congenital or acquired; the latter may result from inflammation or coexist with neoplasms such as HL, seminoma, or thymic carcinoma (14). In our cohort, 71.9% of MCs occurred in women ($p<0.05$), and 75.4% were located in the AMC ($p<0.00001$). With respect to subtypes, pericardial cysts predominated (≈50%), consistent with the majority of published data (1,5), while thymic cysts represent the rarest form, with a proportion of 6.4%.

PMLs, which account for 3–10% of all lymphomas (10), are typically classified into two main categories – HLs and NHLs. These neoplasms were most commonly detected in the AMC, where they rank 3rd in frequency, after TETs and MCs. The most prevalent form of HLs is nodular sclerosis, whereas the most common variants of NHLs are diffuse large B-cell lymphoma and lymphoblastic lymphoma (5,7,17). Our cohort had a higher proportion of HLs. Nonetheless, a predominance of NHLs has been noted by Dixit *at al.* (9). With incidence peaks in early

adulthood and again after age 50, the first exhibits a bimodal age distribution, whereas the last mostly takes place around the mean age of 55 years (8,9). When analyzing all PMLs collectively, the largest proportion of our patients (52.3%) were aged between 20-39 years at the time of surgery.

GCTs and MTs also clearly favored the AMC. The former, most likely originating from primitive germ cells "misplaced" in the mediastinum during early embryogenesis, were statistically more frequent in younger men, whereas MTs occurred equally in both genders, with a preponderance in middle-aged individuals (1,5,7). Interestingly, we found that only males had malignant forms of these neoplasms. However, rare malignant GCTs in women have been noted. Two female patients with malignant teratomas were found by Moran *et al.* (18) in their analysis of 322 mediastinal lesions. Coskun *et al.* (19) reported a mediastinal yolk sac tumor in a 66-year-old woman, while Takeda *et al.* (20) reported one case of embryonal carcinoma in a female patient. Of all our GCTs, benign teratomas accounted for 50.0% (up to 70% in other publications), affected males and females equally, and usually showed clinical symptoms related to compression of adjacent organs (16). Regarding MTs, solitary fibrous tumor is the most frequent benign lesion, while liposarcoma is the most common malignancy.

NTs arise from embryonic neural crest cells and may manifest as either benign or malignant tumors. In adults, malignant forms are less common (5–10%, vs. 40–60% in children) (21). While they may develop along any neurogenic pathway in the chest, the PMC is the most frequent site, usually in connection with the sympathetic chain or intercostal nerves (21). In our study, NTs were found in the PMC in 95.0% of cases, representing 55.9% of all lesions in this compartment and 9.9% of all PMMs. This corresponds with data from other studies, reporting NTs in 4–21% of all adult PMMs and up to 34% in infants and children (5,10,16,21). Schwannomas are the most common subtype among them. They usually appear after the age of 40 and affect both sexes equally (16). Interestingly, we found one case of a rare and highly aggressive MPNST in a 72-year-old woman. This neoplasm is usually associated with a poor prognosis because of its high propensity for local recurrence and metastasis, particularly to the lungs (22).

Except for lymphomas, surgery remains the primary treatment option for other PMMs (23–25). Surgical approaches are either traditional (thoracotomy, sternotomy, mediastinotomy, etc.) or minimally invasive (video- and robotic-assisted thoracoscopic surgery – RATS) (23,25). Technique selection depends on clinical goals, as well as mass size, location, and invasiveness.

Minimally invasive approaches are associated with less blood loss, reduced pain, faster recovery, and lower morbidity (23,24). In our research, VATS achieved the shortest median postoperative stay, underscoring these advantages. However, this cannot be attributed solely to the approach, since open surgery was more often used for invasive lesions requiring extensive resection and longer recovery. Moreover, VATS has limited applicability for bulky tumors invading adjacent structures and organs. In such settings, open surgery remains essential to ensure safe and complete (R_0) resection (26,27).

The single-center, retrospective design of this study, along with the lack of information on clinical presentation and treatment outcomes (including data needed to evaluate other factors beyond the surgical approach that may affect postoperative hospital stay), represents its main limitation. Future multicenter prospective studies with detailed clinical and therapeutic information are warranted to strengthen the generalizability and applicability of our findings.

CONCLUSION

The following are some of our study's most pertinent conclusions: (I) the majority of PMMs are TETs; (II) the AMC was the most commonly affected compartment, serving as the primary site for all mediastinal lesions except NTs; (III) NTs showed a strong preference for the PMC; (IV) females were significantly more likely than males to have MCs, while males were more likely to have GCTs; (V) all malignant forms of GCTs and MTs were diagnosed exclusively in males; (VI) TETs and MCs were predominantly observed in patients over 40 years, whereas PMLs and GCTs most often occurred in those under 40 years; (VII) in terms of postoperative recovery time, VATS demonstrated superiority over traditional surgical approaches.

The knowledge acquired from this study advances our understanding of the clinicopathological and demographic traits of PMMs and may aid medical professionals in refining their diagnosis and treatment strategies. Also, these results could provide a useful basis for further investigations and the creation of more customized treatment plans.

Conflict of interests: The authors declare no conflicts of interest related to this article.

Funding: None.

Author contribution: All authors contributed equally to writing this manuscript.

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УНИВЕРЗИТЕТСКИ КЛИНИЧКИ ЦЕНТАР
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Број: 455/9
Дана: 07.05.2026. године

На основу члана 131. став 1. тачка 3) Закона о здравственој заштити Републике Србије („Сл. гласник РС" бр. 25/2019 и 29/2025), Правилника о клиничком испитивању лекова („Сл. гласник РС", бр. 51/2022, 65/2023, 86/2023 и 97/2024), члана 25. Закона о правима пацијената („Сл. гласник РС" бр. 45/2013 и 25/2019), члана 36. и члана 44. Статута Универзитетског клиничког центра Србије, поступајући у складу са одредбама Пословника о раду Етичког одбора Универзитетског клиничког центра Србије бр. 175/9 од 29.04.2021. године, одлучујући о захтеву др Стефана Стевановића на својој 44. редовној седници одржаној дана 07.05.2026. године, Етички одбор Универзитетског клиничког центра Србије је донео следећу

О Д Л У К У

Одобрава се спровођење клиничког испитивања под називом:„Ретроспективне клиничке студије – анализа клиничких, радиолошких, патохистолошких и хируршких карактеристика примарних медијастиналних маса код одраслих пацијената лечених хируршким путем".
Главни истраживач је др Стефан Стевановић.
Чланови истраживачког тима (УКЦС): др Стефан Стевановић, проф. др Милан Савић, асист. др Жељко Гарабиновић, асист. др Марко Костић, др Милош Митровић, др Дејан Стојковић, др Никола Чолић, др Милош Соковић, др Филип Митровић.
Испитивање ће бити спроведено на Клиници за грудну хирургију УКЦС.
Приликом доношења ове одлуке, Етички одбор је разматрао следећу документацију:

1) Захтев за одобрење спровођења академског клиничког испитивања поднет Етичком одбору УКЦС,
2) Протокол испитивања/Синопсис,
3) Изјаву Главног истраживача о коришћењу медицинских података у складу са Законом о заштити података о личности,
4) Тест листа (ЦРФ),
5) Сагласност Колегијума Клинике за грудну хирургију УКЦС број 109/3 од 20.03.2026. године,
6) Биографију главног истраживача.

ПРЕДСЕДНИК ЕТИЧКОГ ОДБОРА
Проф. др Јелена Била