A giant mediastinal teratoma: From diagnosis to complete resection and *restitutio ad integrum*

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Abstract

The current report highlights the integrated work-up of an unexpected giant mediastinal teratoma in a 28-year-old female. A comprehensive multi-modality imaging approach was implemented in order to define the diagnosis and tailor the most appropriate surgical intervention.

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Key words: mediastinal teratoma; multi-modality imaging; integrated work-up.

Contributions: EB has designed the study; RC, GG, LR, RA, AR, MS, BR, GR, CM, and EB have drafted the work and substantively revised it. All authors read and approved the final manuscript and agreed to be accountable for all aspects of the work.

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Ethics approval and consent to participate: No ethical committee approval was required for this case report by the Department, because this article does not contain any studies with human participants or animals. Informed consent was obtained from the patient included in this study.

Consent for publication: The patient gave her written consent to use his personal data for the publication of this case report and any accompanying images.

Conflict of interest: The authors declare that they have no competing interests, and all authors confirm accuracy.

Received for publication: 17 May 2021.
Accepted for publication: 6 July 2021.

Licensee PAGEPress, Italy
Monaldi Archives for Chest Disease 2022; 92:1935
doi: 10.4081/monaldi.2021.1935

Case Report

A 28-year-old female (body surface area: 1.45 m^2) with no relevant past medical history was admitted to the Emergency Department of the Cardarelli Hospital, Naples, Italy, with one month history of exertional dyspnea and dry cough. At presentation: blood pressure 125/75 mmHg, heart rate 85 bpm and oxygen saturation (sPO_2 98% at fiO_2 21%). Jugular venous distention was present. Chest examination revealed reduced breath sounds intensity. No abnormal heart murmurs were heard. Complete blood count, renal function, BNP, D-Dimer, troponin and liver function tests were within normal limits. The EKG was within normal limits. Transthoracic echocardiography (TTE) showed a solid extracardiac multicystic mass with dislocation of cardiac chambers towards posterior mediastinum. Apical pericardial effusion with maximum diastolic distance of pericardial leaflets of 20 mm in the absence of signs of hemodynamic compromise was also present (Figure 1 A,B). Chest and abdomen computed tomography with radiocontrast was urgently performed in order to better define the type of mass and its relations with thoracic structures. It detected a giant anterior mediastinal mass, colliquative, with internal solid septa at irregular distribution, extending from jugular region to the base of thorax, with pre-pericardial localization (transversal diameters: 8x19 cm; longitudinal diameter: 21 cm) suggesting a germinal genesis tumor (Figure 1 C,D). The patient underwent complete surgical resection. After median longitudinal sternotomy, the mass appears as a solid formation extending into pleural cavity from right to left with compression and dislocation of cardiovascular structures, strongly adhered to mediastinal pleural in both sides. The surgical procedure was completed by pericardiotomy with aspiration of pericardial effusion. The histological examination confirmed the diagnosis of mature cystic teratoma and reported concomitant chronic inflammatory aspects with xantogranulomatous degeneration (Figure 1 E,F). At the 6-months follow-up the patient was asymptomatic, and contrast CT showed a complete *restitutio ad integrum* (Figure 1G).

Discussion

Teratomas, starting from at least two of the three primitive germ layers, are the most frequent germ cell tumors. The majority

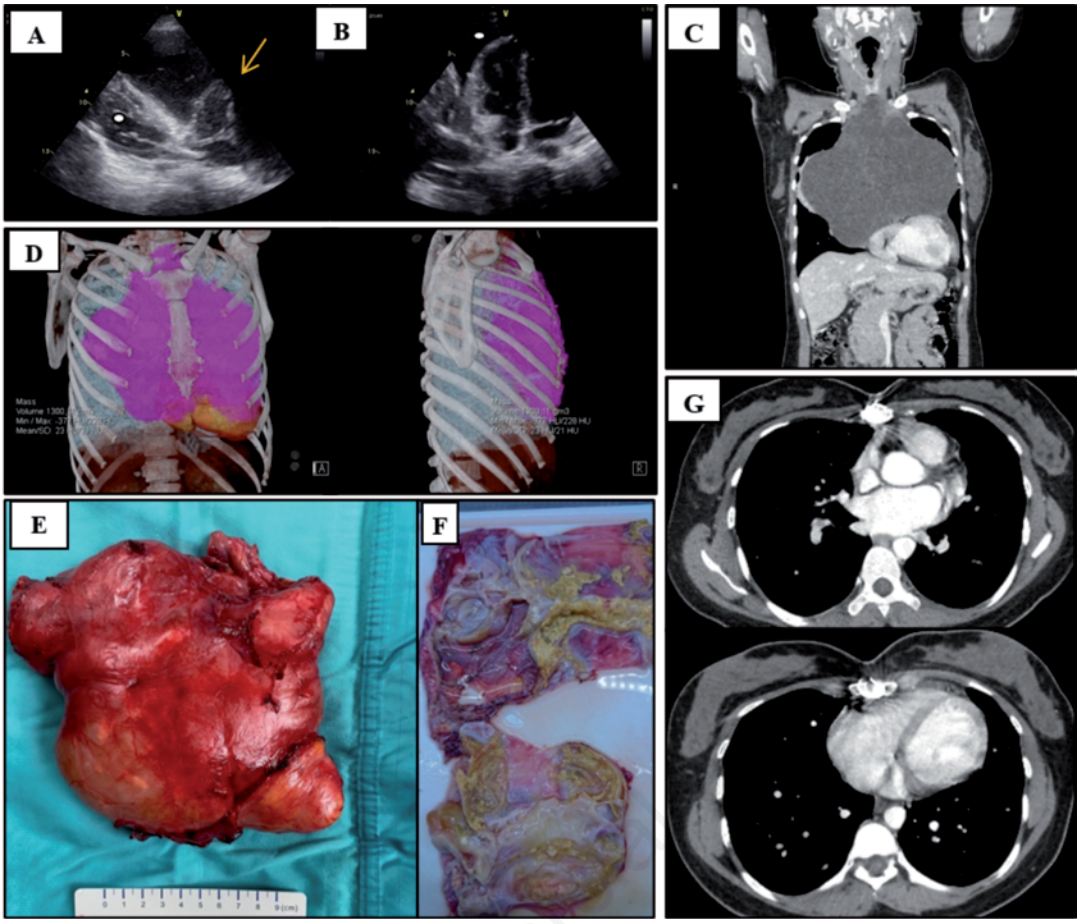

Figure 1. A) TTE modified subcostal view: left ventricle (white point) dislocation by a polycystic mass (yellow arrow). B) TTE off-axis 4-chamber view: apical pericardial effusion (white point). C) CT coronal image of a giant mediastinal mass. D) CT 3D reconstruction. E) Macroscopic view of mediastinal teratoma. F) Histological examination. G) Contrast CT at 6 months follow-up. CT, computed tomography; TTE, transthoracic echocardiography.

of them, having mature and histologically well-defined aspects, are benign. In particular, mediastinal teratomas, the most common mediastinal germ cell tumors, represent ~15% of anterior mediastinal masses in adults, most frequent between 20 and 40 years of age, without gender difference [1-3]. Patients may be totally asymptomatic (~ 40%) or they may present symptoms and/or signs related to invasion and/or compression of surrounding tissues and organs: chest pain (~ 36%), chest tightness (~ 23%), fever (~ 12%), pleural effusion (8%), cough (~ 7%), hemoptysis (2%) [4,5]. Chest computed tomography with radiocontrast is the imaging modality of choice [4]. It should be underlined due to their potential risk of rupture and infection as well as to the described possibility of malignant transformation into rhabdomyosarcoma, adenocarcinoma, leukemia and anaplastic small cell tumors, timely complete surgical resection is considered to be the treatment of choice in the large majority of cases [5].

Conclusions

Our case highlights the integrated diagnostic-therapeutic work-up of an unexpected mediastinal mass from non-specific symptoms to comprehensive multi-modality imaging approach and surgical intervention involving a multidisciplinary team in a synergic collaboration aimed to tailor the best solution for the patient.

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