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Case Blog

Mediastinal Mass Excision-Simple and Safe in Non-specialised Centres

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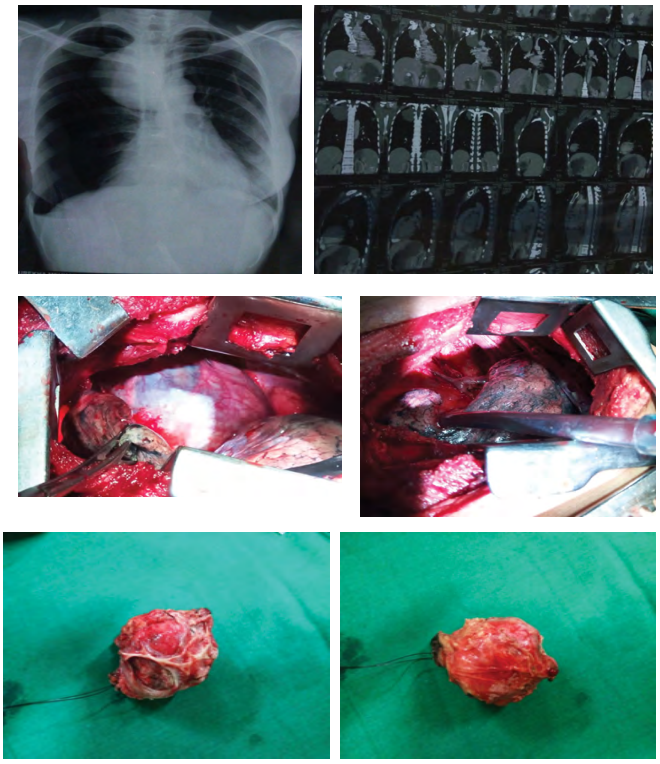

Figure 1: Chest X-ray showing enlarged medistinal shadow suggestive of Mediastinal Mass.
Figure 2: CECT chest showing Mediastinal Mass extending into right pleural cavity.
Figure 3: Medistinal Mass around 6 cm by 8 cm enclosed in capsule.
Figure 4: Left pleural cavity after ligation of feeding veins and excision of Mediastinal Mass.
Figure 5: Excised Mediastinal Mass.

Keywords: Mediastinal mass; Teratoma

Introduction

The mediastinum is a site for a wide range of various neoplasms, with often rare histologies [1,2], imposing both diagnostic and therapeutic challenges. Particularly large mediastinal masses, or intrathoracic masses with mediastinal compression, offer surgical challenges, due to the complex anatomy of the mediastinum, with obstruction, compression, or invasion of vital surrounding structures. In addition, anesthesiological management during surgery can be complicated by the so-called "Mediastinal Mass Syndrome" (MMS) [3], characterized by acute respiratory and hemodynamic decompensation, due to mechanical compression of mediastinal structures. Therefore, meticulous preoperative assessment, preparation and collaboration between the surgeon and anesthesiologist are essential.

Case Presentation

A 26-year old man asymptomatic presented to our hospital with obliteration of the right cardiophrenic sinus by a mass on Chest X-ray (Figure 1). He has no history of fever, weight loss, previous disease, or any neoplasm in his family. A non-

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invasive investigation CECT of chest demonstrated a tumoral mass which was continuous to the pericardium and caused extrinsic compression to the SVC and right atrium (Figure 2). The diagnosis of this tumor is very difficult through non-invasive investigation. The patient underwent surgical resection en-block via right thoracotomy (Figure 3). Slow and meticulous dissection is must to remove the mass encapsulated without causing it to rupture (Figure 4). Suspicion was a thymoma but surgical and anatomopathologic findings led to the diagnosis of a mature cystic teratoma (Figure 5).

Discussion

The typical radiographic appearance of mature teratoma is that of a rounded, sometimes lobulated anterior mediastinal mass with the borders of the mass sharply marginated against the adjacent lung. Calcification has been reported in approximately 20-43% of cases and may be central, curvilinear, or peripheral (Michel et al.) [4]. The radiographic visualization of teeth is pathognomonic of teratoma (Rosai and Levine) [5]. Computed Tomography (CT) is the modality of choice for the diagnostic evaluation of these tumors. Meditational mature teratomas typically manifest on CT as heterogeneous sharply marginated, spherical or lobulated anterior mediastinal masses containing soft tissue, fluid, fat, or calcium attenuation, or any combination of the four. Malignant transformation must be ruled out if contrast enhanced CT scanning reveals a non-homogeneous cystic mass with a fat or oil component and a thick wall with calcification with invasion of the pericardium and great vessels (Dobranowski et al.) [6]. The patient underwent surgical excision. The treatment of mature teratoma consists of complete surgical excision of the mass. The prognosis is very good and 5 year survival rates approach 100%, in contrast to the prognosis of immature teratomas, which may exhibit an aggressive behaviour in adults and may have a poor prognosis (Hueb et al.) [7].

Conclusion

In the perioperative management of surgical treatment of large mediastinal masses or intrathoracic tumors with mediastinal compression, attention to anatomical details of the tumor and it relations with vital mediastinal surrounding structures is essential. Preoperative preparation measures include appropriate preoperative multimodality imaging, with emphasis on the vascular anatomy of the tumor. Multidisciplinary team discussions should assess whether neoadjuvant therapy can be beneficial on a case-by-case basis. With adequate preoperative team planning, a safe anesthesiological and surgical strategy can be realized. The management of these tumors are simple and safe if properly planned and with good anatomical knowledge and technique surgical excision can be done in nonspecialized centers.

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