Middle and posterior mediastinal masses: what every radiologist needs to know.

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Learning objectives

To review the spectrum of the middle and posterior mediastinal masses and its radiologic-pathologic correlation.

To assess the role of the different imagine techniques (chest radiography, multi detector computed tomography and magnetic resonance) on its diagnosis.
Background

INTRODUCTION:

The mediastinum is the anatomical region of the chest located between the two pleural cavities, extending from the thoracic inlet to the diaphragm, posterior to the sternum and anterior to costal arches. Despite the absence of other anatomical boundaries, mediastinum is usually divided into three compartments for practical and educational reasons, which help in the evaluation of pathology according to their place of origin and location. One of classification of reference in surgical ambit is:

- Anterior mediastinum: located between the sternum and anterior to the pericardium and great vessels.
- Middle mediastinum: its anterior limit and the posterior limit of anterior mediastinum are the same. Its posterior limit is the anterior edge of the vertebral bodies.
- Posterior mediastinum: located between the dorsal vertebrae (anterior) and posterior chest wall (posterior).

Although each disease shows a preference for a specific mediastinal compartment, lesions may grow or even migrate to an adjacent compartment.

CLINICAL ISSUES

Most patients with mediastinal tumors are asymptomatic or have vague discomfort when they are diagnosed. In symptomatic patients, the tumour is more likely to be a malignant tumour (90% of malignant tumors leads to some kind of symptom, compared to 45% in benign tumors). However, less than a third of mediastinal masses are malignant. Symptoms may be related to direct compression or invasion of mediastinal structures, or may be part of paraneoplastic syndromes. Nonspecific symptoms such as cough, dyspnea, and chest pain are related to compression of these structures. Superior vena cava syndrome, Horner syndrome, hoarseness and neurological signs usually denote infiltration of adjacent structures. In addition, there may be symptoms associated with the release of endocrine substances, resulting in specific systemic syndromes, such as Cushing (carcinoid) or hypertension (pheochromocytomas) syndromes.

DIAGNOSIS:

The diagnosis of mediastinal tumors often occur as an incidental finding in imaging tests done in many cases for other reasons.
Radiography: the first imaging technique. It is necessary to pay attention to the following signs of lesion location.

- Alteration of cardiac, paratracheal, retrotracheal, azygo-oesophageal and/or paravertebral stripes.
- Silhouette sign.
- Hilium overlay sign.
- Doughnut Sign.
- Obliterated retrosternal clear space.
- Cervicothoracic sign.

Multidetector Computed Tomography (MDCT) is the imaging modality of choice in the evaluation of mediastinal tumors. It can locate and characterize mediastinal lesions and clarify the relationship to adjacent anatomical structures that can alter the disease staging, prognosis and treatment. It is also useful to guide transthoracic biopsy. Besides monitors response to treatment and detection of recurrences. Magnetic resonance imaging (MRI) is useful in iodinated contrast allergic individuals. Likewise, it assess accurately the existence and extent of intramedullary tumors, adjacent nerve structures infiltration and vascular invasion, that influences on surgical planification. This poster shows the main characteristics of middle and posterior mediastinum tumors, radiopathologic correlation and differential diagnoses to take into account.
Findings and procedure details

MIDDLE MEDIASTINUM:

1. PLEUROPERICARDIAL CYST

Epidemiology:
The most frequent primary pericardial mass. It is secondary to an entrapment of a portion of pericardium during embryonic development, resulting in a mass with connective tissue wall formed by a single layer of mesothelial cells, whose content is liquid and unilocular.

Image:

- MDCT: hypodense lesion rounded and not sharp rims with contrast enhancement. The most common site is the right cardiophrenic angle, but we can find it anywhere in the pericardial recesses (Figs. 1-2)

2. BRONCHOGENIC CYST

Epidemiology:
It is due to abnormal segmentation of the tracheobronchial tree during the foregut embryonic development, leading to a mass bounded by pseudostratified columnar epithelium, smooth muscle and glandular tissue, which is filled with sero-mucosal liquid. It can be associated with other congenital malformations such as pulmonary sequestration, lobar emphysema or diaphragmatic hernia.

Image:

- MDCT: ovoid lesion, usually low attenuation, well-defined rims and thin wall with no contrast enhancement. It could have different attenuations according to its protein content or if it is infected: milk of calcium (protein)(Fig. 3); fluid level and thick wall (infection). Its most common location is subcarinal or parahilar. It may be in the lung, pleura or diaphragm.
- MRI:
  - T1: variable signal intensity from low (similar to liquid) to high (protein content) (Fig. 4). Sometimes presents liquid-liquid level secondary to de presence of liquid contents of variable density.
  - T2: hyperintense signal.
3. ESOPHAGEAL PATHOLOGY.

A. ESOPHAGEAL DUPLICATION CYST

Epidemiology:
Esophageal cyst in due to an anomaly in the segmentation of the dorsal foregut. They usually contain gastric or pancreatic mucosa; It entails an increased risk of infection, perforation and hemorrhage (Fig 5).
The treatment should always be surgical, even when patients are asymptomatic, given the possibility of developing symptoms and complications, including malignancy.

Image:

- CXR and MDCT (Fig. 6): well-defined homogeneous mass of tubular morphology, regular rims. Higher attenuation if it has proteinaceous content. Its wall is generally thicker (because of smooth muscle) and calcifications. It is located in intimate contact with the wall of the esophagus, usually in the right posterolateral portion of the distal esophagus.
- MRI

-T1: variable signal intensity from low (similar to liquid) to high (protein content).
- T2: hyperintense signal.

-B. GIANT FIBROVASCULAR POLYP OF THE ESOPHAGOUS

Epidemiology:

Giant fibrovascular polyps are rare, benign intraluminal esophageal tumors. They are slow-growing, pedunculated masses that usually arise from the wall of the upper third of the esophagus. It may attain great proportions.

Image:

- CT and MR imaging (Fig. 7), especially with multiple imaging planes, may offer anatomic information to indicate that there is an intraluminal esophageal mass and that the mass is pedunculated.
4. LYMPH NODES

A) LYMPHOMA:

Epidemiology:
Patients with primary mediastinal lymphoma usually have an anterior mediastinal mass often associated with lymphadenopathy in the middle and posterior compartments. Less frequently, lymphoma may appear as a homogeneous paravertebral mass, which is difficult to distinguish from other neurogenic tumors. Usually they present minimum contrast enhancement.

Image:
- MDCT: pathologic lymph nodes or adenopathic clusters that can show cystic or necrotic degeneration. The abdominal extension of the disease can be evaluated in the same examination.
- MRI is not commonly used in the evaluation of lymphoma.

- T1: homogeneous masses with low signal intensity.
- T2: intermediate to high signal.
  - 18F-FDG PET-CT: is recommended to be performed 6-8 weeks after treatment in patients with Hodgkin lymphoma and diffuse B-cell lymphoma.

B) NOT TUMORAL LYMPHADENOPATHIES

Epidemiology:
Middle and posterior mediastinal lymph nodes may also be involved in inflammatory/ granulomatous processes such as sarcoidosis, pneumoconiosis, Castleman's disease and in infections, mostly HIV and Mycobacterium tuberculosis (Figs. 8-12)

Image:
Images are not specific and should be evaluated with other tests of diagnostic study.

5. LIPOBLASTOMA / LIPOMA / LIPOSARCOMA:

A) LIPOBLASTOMA:

Epidemiology:
Almost exclusive rare benign tumor of childhood.
It consists of fetal adipose tissue containing adipocytes with varying degrees of maturation: Lipocytes univacuolated, lipoblasts multivacuolated.

Image:
- MDCT: different proportions of fat and soft tissue. More fat in younger patients. Its most common location is the members and neck.

B) LIPOMA and C) LIPOSARCOMA

Epidemiology:
Fatty tumors are slow growing and asymptomatic, so usually are large when are diagnosed.

Image:
- MDCT:
  - Lipoma (Fig. 13): homogeneous fat mass, homogeneous and well defined, that does not invade surrounding structures attenuation
  - Liposarcoma (Fig. 14-15): large and heterogeneous mass containing fat, thick fibrous septa and tissue attenuation parts soft and diffusely infiltrating mediastinal structures.

- MRI:
  - Lipoma: hyperintense T1 and T2 signal and signal suppression sequences fat-sat (it exhibits the same behavior signal as subcutaneous fat on all pulse sequences).
  - Liposarcoma: mass with heterogeneous signal and heterogeneous contrast enhancement.

6. HERNIAS:

A) HERNIA HIATAL

Epidemiology:
It is the most common mediastinal mass. It consist in the herniation of abdominal elements into the chest cavity. There are two main types of hiatal hernia: sliding and paraesophageal. In a sliding hernia, the gastroesophageal junction migrates above the diaphragm through the esophageal hiatus; in a paraesophageal hernia, stomach migrates without any displacement of the gastroesophageal junction. The sliding hernias,
representing over 95% of cases and are often associated with gastroesophageal reflux disease. On the other hand, paraesophageal hernias can present acutely obstructive symptoms secondary to a gastric volvulus, which can cause bleeding, incarceration, strangulation and / or perforation of the stomach.

Image:

- CXR and MDCT (Figs. 16-17): mass in the middle mediastinum, often with fluid level on CXR. Migrated abdominal elements can be delimitated on MDCT.

B) BOCHDALEK HERNIA

Epidemiology:
In Bochdalek hernia, abdominal fat (and sometimes certain viscera) migrate into the chest through a posteromedial diaphragm defect mostly in the left side. Most of the larger and symptomatic hernias are diagnosed during the neonatal period, because the herniated abdominal organs cause severe respiratory distress. However, Bochdalek asymptomatic hernia can be found casually in 10.5% of adults undergoing thoracic image studies.

Image:

- CT and MRI (Fig. 18): Identify the discontinuity of diaphragmatic muscles and an homogeneous fat attenuation mass introduced into the rib cage. Besides fat, in Bochdalek hernias, abdominal organs can pass through the diaphragmatic defect as the intestine, spleen, liver, stomach, kidney and pancreas. The MPR CT reconstructions are very useful for showing the diaphragmatic defect and the contents of the hernial sac.

POSTERIOR MEDIASTINUM:

NEUROGENIC TUMORS:

Up to 95% of neurogenic tumors occur in the posterior mediastinum, being the most common type of tumor in this location. Account 20-25% of all primary mediastinal tumors in adults and 40-45% in pediatric patients. According to the patient's age, the percentage of malignancy of neurogenic tumors varies widely, being much higher in children than in adults: 80-85% in patients younger than 5 years (100% under 2 years), 15 -20% in patients 5-14 years of age and 7.5% in patients over 15 years old. According to containing neural tissue, they are divided into three groups: nerve sheath tumors, ganglion cell tumours and paraganglionic cell tumors.
1. NERVE SHEATH TUMORS
They are the most common type of neurogenic tumors. They are more common in adults than in children and are almost always benign, except in patients with neurofibromatosis, a rare genetic disease with multiple neurogenic tumors. They include benign schwannomas and neurofibromas and malignant peripheral nerve sheath tumors. Their axes tend to be in the horizontal plane.

A) SCHWANNOMA and B) NEUROFIBROMA

Epidemiology:

- Schwannoma: the most frequent neurogenic mediastinal tumor.
- Neurofibromas: the second most frequent neurogenic mediastinal tumor.

Both are more common in young adults (40 years).
They are usually benign, and only one except in patients with neurofibromatosis.

Image (Figs. 19-24):

- MDCT: paravertebral spherical mass, well defined and encapsulated (in the case of Schwannoma). They have homogenous soft tissue attenuation. They can cause erosion / deformity of ribs and / or vertebrae and expansion of neural foramina. Intraspinal growth (10%). Calcification (10%). Schwannomas have minimally enhanced after contrast administration, while neurofibromas show a hypodense central area ("target sign").
- MRI:
  - T1:low-intermediate signal; homogeneous contrast enhancement.
  - T2: high homogeneous signal, (schwannoma) or heterogeneous with central low signal (neurofibroma).

Histology:

- Macro:
  - Shwannoma: eccentric nerve affection, encapsulated.
  - Neurofibroma surrounding the nerve affection, unencapsulated.

- Micro:
- Schwannoma: Antoni type A (high cellularity and cellular organization) and B (predominance of loose matrix with cell disruption). They could have areas of myxoid degeneration, necrosis and hemorrhage (Fig. 25).

- Neurofibroma: disorganized proliferation of all nerve elements (Fig 26).

C) MALIGNANT PERIPHERAL NERVE SHEATH TUMOR

Epidemiology:
Rare tumor, usually in patients with neurofibromatosis (70% of TMVN). Its prognosis is poor with 35% of survival at 5 years. The post surgical radiotherapy can reduce local recurrence.

Image:
- MDCT and MRI (Figs. 27-28): large spherical Mass (> 5 cm). Usually presents foci of necrosis, calcification and local invasion.

2. GANGLION CELL TUMOURS
It is the most common type in children and has different histological degrees of aggressiveness. They tend to have a long axis in the vertical plane (along the sympathetic chain).

A) GANGLIONEUROMA:

Epidemiology:
Paravertebral benign tumor. Pediatric and adolescent age (> 10 years) M = F. Encapsulated. Often large, along the sympathetic chain.

Image:
- MDCT (Fig 29): uniform attenuation. Calcification in 25% .
- MRI (Fig. 30):
  - T1: Hypo-isointense . Variable contrast enhancement.
  - T2: hyperintense.

Histology(Fig. 31): mature ganglion cells.

B) GANGLIONEUROBLASTOMA:
**Epidemiology:**
Intermediate malignancy.
Pediatric patients (5-10 years, mean age ~ 7 years)
Most in adrenal.
Survival 90% at 5 years.

**Image:**
- MDCT: similar to ganglioneuromas but slightly more heterogeneous and with calcifications in 85% of cases.
- MRI:
  
  - T1 hypo-isointense. Variable contrast enhancement.
  
  - T2 hyperintense.

**Histology:** mature ganglion (predominant) and neuroblasts cells.

**C) NEUROBLASTOMA:**

**Epidemiology:**
Malignant tumor of neural crest cells.
Patients <5 years of age (mean age ~ 2 years)
Third most common malignancy in childhood. 30% 5-year survival. Most common extracranial solid tumor in childhood (50% in patients two years or under).
Paraneoplastic syndrome (VIP diarrhea, achlorhydria, hipoK +)

**Image (Fig. 32):**
- MDCT: heterogeneous mass, unencapsulated, with varying areas of hemorrhage, necrosis and enhancement. Most with calcified areas. Sympathetic chains are located in: adrenal, paraspinal and posterior mediastinum. Often they can invade the spinal canal showing the typical "dumbbell" appearance
- MIBG: highly sensitive to determine the extent of the disease in catecholamine-producing neuroblastomas (E98% S88%).

**Histology:** undifferentiated cells neuroblastic.

**3. PARAGANGLIONIC CELL TUMORS**
They are rare tumours in the posterior mediastinum and are more common in adults than children. They can be both benign and malignant. They arise along the sympathetic chain in the aortosimpaticos paraganglia.

A) PARAGANGLIOMA

Epidemiology:
Tumor arising from chromaffin cells located in para-aortic nodes (middle mediastinum) and paravertebral sympathetic chain (posterior mediastinum). 40 years. M = H. Only 2% are located in the chest. Those with hormonal secretion can be diagnosed before.

Image:
- MDCT (Fig. 33): hypervascular: early, intense and homogeneous enhancement. Image salt and pepper. It can invade the spinal canal acquiring hourglass look. Rapid growth, necrosis and hemorrhage are suggestive of malignancy.
- MRI (Fig. 34):
  - T1: show a characteristic "salt-and-pepper" appearance images, due to the presence of multiple curvilinear and punctate signal voids that correspond to high-velocity flow in intratumoral vessels
  - T2: "whorled" appearance.
    - MIBG: highly sensitive to determine the extent of the disease in catecholamine-producing paragangliomas.

Histology:

4. NEURENTERIC CYST:

Epidemiology:
It develops where the dorsal foregut and the primitive notochord are very close. It is an adhesive process. 99% in posterior mediastinum, above the level of the carina. Childhood. Usually symptoms of tracheobronchial compression as dyspnea, stridor and persistent cough. Surgery is reserved only in these cases. Association with abnormalities of spinal fusion.
• MDCT: homogeneous and hypodense lesion with well defined limits. They can be connected to or extend into the spinal canal. CT allows better evaluation of vertebral anomalies, such as hemivertebrae, butterfly vertebrae, scoliosis, anterior spina bifida, and split notochord syndrome.

• MRI: hyposignal hyperintense T1 and T2 (contains CSF). Absence of contrast enhancement.

5. MEDIASTINAL FIBROSIS:

Epidemiology:
Proliferation of fibrous tissue in the mediastinum.
Fungal infection or previous TB.
Obstructive symptoms: VCS, central airway, pulmonary arteries and veins, esophagus.
Young patients. Although this is a benign process it reaches 30% mortality.

• Focus: located in the mediastinum (Fig. 36). Calcified.
• Diffuse: diffusely infiltrative mass. Rare calcifications. Commonly associated with fibroinflammatory alterations.

6. EXTRAMEDULLARY HEMATOPOIESIS:

Epidemiology:
States of chronic anemia or bone marrow replacement in myeloproliferative disorders cause the expansion of hematopoietic tissue outside the bone marrow (Fig. 37), leading to the development of pseudotumoral lesions, often in thoracic paravertebral region. Associated with myelofibrosis and thalassemia.

Image (Fig. 38):

• CT and MRI: paraspinal mass in a low, well-defined, usually bilateral and sometimes with expansion ribs thoracic region. Rarely pleural effusion or hemothorax. Splenomegaly. The attenuation values in CT and MR signal intensity varies according to the degree of hematologic lesion activity:

- Active lesions: homogeneous. Soft tissue attenuation on CT and intermediate signal intensity on both T1 and T2 MR.

- Inactive lesions: heterogeneous. High signal intensity on T1 and T2 if fatty replacement or low signal intensity in the case of iron deposition.
7. LATERAL MENINGOCELE:

Epidemiology:
Anomalous herniation of intervertebral leptomeninges through the foramen or vertebral bodies defects. Contain CSF.
Association with NF.

Image (Fig. 39):

- MDCT: low and homogeneous attenuation lesion with well defined borders, which protrudes from the spinal canal to the posterior mediastinum. Right predominance.
- MRI: cystic mass with the same signal as the CSF. It is chosen to demonstrate communication with the thecal sac.
Fig. 1: Pleuropericardial cyst in its typical location, right cardiophrenic angle
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Fig. 2: Pleuropericardial cyst in atypical location, adjacent to the aortic arch
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**Fig. 3:** Infracarinal lesion, ovoid morphology, homogeneous and hyperattenuating, with a fluid level (arrow) due to proteinaceous content (milk of calcium image)

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**Fig. 4:** MDCT (1): infracarinal bronchogenic cyst which shows some hyperattenuating areas secondary to infection. MRI in other patient: the lesion (arrow) has high signal intensity on T1-weighted black blood gradient echo sequence (2) and medium signal intensity on T2-weighted (BFTE) sequence (3) due to proteinaceous content
**Fig. 5:** Thick-walled cyst containing muscle layers. The surface epithelium is denuded.
**Fig. 6:** water density lesion, well-defined and regular rims. On PA (1) projection right heart border is not lost; on lateral projection (2) we confirm retrocardiac and infracarinal location of the lesion.

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**Fig. 7:** Polpoid lesion within the esophageal lumen along its thoracic course.
**Fig. 8:** bilateral paratracheal, infracarinal and hilar lymphadenopathies

**Fig. 9:** (1) Occasionally adenopathies can be calcified. (2) Detail of the typical eggshell calcification image, not only present in sarcoidosis.
Fig. 10: Lymph node with no well-defined necrotizing granulomas with numerous giant cells and conchoidal bodies.

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**Fig. 11:** (1) Multiple hilar and mediastinal lymph nodes with eggshell calcification. In pulmonary parenchyma window (2) multiple well-defined subcentimeter nodules with peribronchovascular distribution are shown, some of them calcified. Altered vascular architecture and bronco pleural plaques predominantly in LLSS are also observed.

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![Image](image11)

**Fig. 12:** Normal and preserved lymph node architecture with sinusoidal histiocytes with cytoplasmic anthracotic brown-black pigment.

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![Image](image12)
**Fig. 13:** Fat attenuation mass in the middle mediastinum. It shows lobed rims, with no solid poles or contrast enhancement. Compatible with lipoma.

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**Fig. 14:** Large mass extending through middle and posterior mediastinum, displacing and infiltrating neighboring structures. Fat attenuation is predominant but it also shows very heterogeneous density with fibrous septa, some soft tissue attenuation areas and postcontrast enhancement.

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**Fig. 15:** Fatty tumoral proliferation rich in thin vessel vasculature without pleomorphic cells.

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**Fig. 16:** CXR (1) and MDCT (2) on sagittal plane: mixed hiatal hernia associated with stomach organoaxial rotation (also containing transverse colon, not shown on these images)

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**Fig. 17:** CXR (1) and MDCT (2) on coronal plane: of the same patient as in figure 16; mixed hiatal hernia associated with stomach organoaxial rotation (also containing transverse colon, not shown on these images)

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Fig. 18: Bochdalek left diaphragmatic hernia containing abdominal fat and the major part of the gastric body. Note the extremes of the diaphragmatic defect (arrows)

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**Fig. 19:** Well defined rims, slightly hypodense and homogeneous contrast enhancement lesion located in right paravertebral space.

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**Fig. 20:** The same patient as in figure 19; the lesion presents high signal on T2 (1), low signal on T1 (2) and moderate homogeneous contrast enhancement(3). The lesion shows low signal peripheral capsule.

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**Fig. 21:** CT-Angiography: large mass in posterior mediastinal with abundant blood supply from the aorta (arrow) and anterior displacement of the middle mediastinum structures.

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**Fig. 22:** The same patient as in Figure 21: axial T2 sequence (1) and sagittal Stir (2) in which the lesion has heterogeneous hyperintense signal, higher on Stir sequence.

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Fig. 23: Large paramediastinal mass with heterogeneous attenuation and areas of higher and lower density. Pleural effusion is also observed.

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Fig. 24: Patient with a history of NF1 and soft tissue sarcoma. In MDCT there is an homogeneous hypodense lesion adjacent to the right pulmonary apex and to the first right costal arch (arrow) with histological result of neurofibroma. Pulmonary nodules (*) compatible with metastases.

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Fig. 25: Fusiform proliferation with more hypercellular areas with Verocay bodies (tightly organized nuclear palisades) (Antoni A) (1) versus more hypocellular and lax stroma areas (Antoni B). In both areas there are thick-walled vessels

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Fig. 26

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Fig. 27: Patient with a history of NF1. In MDCT (1) there is a large mass, with heterogeneous attenuation, occupying the entire left hemithorax base. PET-CT: a high affinity for 18F-FDG supports its great aggressiveness.

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Fig. 28: Hypercellular mesenchymal tumor formed by spindle cells with numerous mitotic figures and areas of tumor necrosis (on the right of the photo), in connection with a nerve structure (not included in this picture).

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Fig. 29: Left paravertebral lesion with vertical axis, hypodense and homogeneous.

Fig. 30: The same patient as in figure 29: the lesion has high signal on T2 (1), low signal on FAME T1 sequence(2) and moderate and homogeneous contrast enhancement on FAME T1 sequence(3).

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Fig. 31: Tumour formed by an abundant hypocellular spindle stroma without nuclear atypia, in which dotted cells of large size corresponding to ganglion cells (large cells with large eosinophilic cytoplasm and round nucleus with prominent nucleoli) are observed.

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Fig. 32: Non enhanced MDCT (1): large heterogeneous right paravertebral mass with calcified areas. MRI: the lesion shows hemorrhage foci hiperintense on T1 (3) and heterogeneous contrast enhancement (4). It can invade the spinal canal showing the typical "dumbbell" appearance (arrow in 4)

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**Fig. 33:** Left paravertebral mass, very hypervascular with early and intense contrast enhancement. Invasion of the medullary canal is observed and can acquire dumb-bell image.

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**Fig. 34:** The same patient as in figure 33: the lesion has high signal on T2 (1), low signal on T1 (2) and moderate post contrast enhancement (3). On T1 show a characteristic "salt-and-pepper" appearance images, due to the Presence of curvilinear and multiple punctate signal voids that correspond to high-velocity flow in intratumoral vessels. On T2 show "whorled" appearance.

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Fig. 35: Rounded tumour separated from lung parenchyma, composed of epithelioid cells that form small lobulations separated by a vascular pattern of numerous small vessels (Zellballen pattern) (1). It expresses neuroendocrine immunohistochemical markers (chromogranin) (3) and do not express pankeratines (AE1 / AE3) (with positivity of adjacent lung parenchyma) (2). Substentacular S100 + cells are observed (4).

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**Fig. 36:** Soft tissue mass in posterior mediastinum, diffusely infiltrating, which surrounds completely the descending thoracic aorta.

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**Fig. 37:** (1) megakaryocyte with multilobed nucleus and abundant cytoplasm, adjacent to a erythroid nest. lymphocytes in different stages of maturation are observed. Megakaryocyte multilobulated nucleus is observed in (2).

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Fig. 38: Patient with history of hereditary spherocytosis. On MDCT bilateral paraspinal masses are identified. It shows soft tissue attenuation and fat. No calcifications neither erosion of vertebral bodies

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Fig. 39: Non enhanced CT: hypodense homogeneous lesions which protrudes from the spinal canal to the posterior mediastinum

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Conclusion

There is a wide spectrum of mediastinal masses.

Thus, it is essential for the radiologist to be acquainted with the most characteristic findings of these lesions in diagnostic imagings.
References


