ABC of the retrocrural space

Poster No.: C-2602
Congress: ECR 2015
Type: Educational Exhibit
Authors: J. C. Quintero Rivera, M. F. Hermida Gómez, J. A. Pumar Fernández, P. Pardo Rojas, L. Varela, U. Novo; Ourense/ES
Keywords: Anatomy, CT, MR, Computer Applications-General, Cysts, Pathology, Neoplasia
DOI: 10.1594/ecr2015/C-2602

Any information contained in this pdf file is automatically generated from digital material submitted to EPOS by third parties in the form of scientific presentations. References to any names, marks, products, or services of third parties or hypertext links to third-party sites or information are provided solely as a convenience to you and do not in any way constitute or imply ECR’s endorsement, sponsorship or recommendation of the third party, information, product or service. ECR is not responsible for the content of these pages and does not make any representations regarding the content or accuracy of material in this file.
As per copyright regulations, any unauthorised use of the material or parts thereof as well as commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method ist strictly prohibited.
You agree to defend, indemnify, and hold ECR harmless from and against any and all claims, damages, costs, and expenses, including attorneys’ fees, arising from or related to your use of these pages.
Please note: Links to movies, ppt slideshows and any other multimedia files are not available in the pdf version of presentations.
www.myESR.org
Learning objectives

- Illustrate the normal anatomy of the retrocrural space.
- Highlight the capacity of the MDCT in the evaluation of this space and our pathology.
- Review the literature through some cases diagnosed in our hospital.

Background

The retrocrural space is one small region of triangular morphology in posterior mediastinum. The multiplanar capacity of the MDCT and MR allows the evaluation of this space.

Over the last 48 months (November 2010-November 2014) we have collected many illustrative examples of the anatomy. We also selected variants of the normal as well as one series of pathological conditions.

Findings and procedure details

The diaphragm is a muscle tendon structure that separates the chest from the abdomen Fig. 1 on page 13 f, but just not a structure separating two cavities since it is the main muscle for breathing.

The diaphragm is formed between the fourth and sixth week of embryonic life. The medial membranes extended to fuse their borders with the esophageal mesentery and transverse septum, separating the pleural and abdominal cavities.

Due to this anatomical structural complexity with multiple ligamentous structures and connections to the thorax and abdomen it is more than just a border between two cavities.

There are many difficulties in the study of this area, except the diaphragmatic crura, since most of the diaphragm is convex and very fine, cardiac movement interferes with aspects of the horizontal portion of the diaphragm.

In its complex structure a central or tendon area and muscle bilateral leaf-like extensions stand out. The pericardium is attached to the front surface of the tendon or central zone.
Diaphragm inserts

Anterior insertions

The esternocostal portion of diaphragm is a muscular band that is inserted into the xiphoid process and in the last six arches and costal cartilages. The cephalic insertion of the diaphragm is in the xiphoid process, adopting an "inverted U" morphology.

Posterior insertions

The cruras diaphragmatic with muscle tendon pillars which fix themselves to the anterolateral surface of the vertebral bodies and discs (L1-L3 in the right and L1-L2 on the left side), extending cranially to the esophageal hiatus (D10), connecting height above the celiac axis through the medial arcuate ligament (Fig. 2 on page 14).

The retrocrural space contains: fat, aorta, azygos-hemiazygos, nerves, thoracic duct, lymph nodes and other lymph structures. The most caudal area of the lungs can insinuate itself into the retrocrural space from there that can simulate outdoor retroperitoneal.

Arcuate ligament medial (or medial lumbocostal arc), is a partially covering tendinous arch extending from the psoas diaphragmatic crura to the vertebral body of L1-L2 and L1 transverse process.

Lateral arcuate ligament (or lateral lumbocostal arc), partially covering the quadratus lumborum (anterior portion) extending from the transverse process L1 until the middle of the 12th right rib Fig. 3 on page 15.

CONTENT OF RETROCRURAL SPACE

Retrocrural cross sections in the triangular space is a region representing the lower portion of the posterior mediastinum Fig. 2 on page 14 communicating with the posterior mediastinum and retroperitoneum and therefore is a potential tract to extend the pathology in the openings.

Contains: fat, vascular structures (aorta and arterial branches, azygos and hemiazygos and lumbar venous plexus), neural (sympathetic trunks and splanchnic nerves) and lymph structures (lymph nodes, thoracic duct and chyli cystern)

Lymph nodes, chyli cystern and thoracic duct
The lymph nodes of the retrocrural space are the lymph posterior diaphragm, mediastinum posterior and lumbar spine station, being able to measure up to 6 mm short axis.

The chylli cystern is a bulbous expansion formed by the convergence of the lymphatic channels in the plane of the upper lumbar vertebral bodies Fig. 4 on page 16. It receives two lumbar and intestinal afferents to finally ascend like the thoracic duct. Generally it is on the right of the aorta but sometimes it can be retroaortic or even on the left Fig. 5 on page 17. The shape varies but is commonly tubular, though it may be round, oval, plexiform or fusiform. Due to MDCT it is of low attenuation (close to water) with late enhancement.

The thoracic duct starts in the upper surface of the Chylli Cystern at T2 level and is found between the aorta and the azygous vein.

**Aorta**

The aorta is the largest structure of retrocrural space. In the aortic opening the aorta is located slightly to the left of the midline. Important branches arise at this level (posterior low intercostal and subcostal)

**Azygos veins and hemiazygous**

The azygos vein is on the right side going into the chest through the retrocrural space, ascending to the right of the anterolateral surface of the thoracic spine Fig. 7 on page 19. Similarly, but on the left side, runs the hemiazygous vein Fig. 8

**Paravertebral venous plexus**

A network of valveless venous systems communicates the entire length of the spine. The relative increase in venous pressure in this network will allow blood flow from the venous system vertebræ of the inferior vena cava. Given the absence of competent valves it is a free communication between the veins of the neck, thorax, abdomen, pelvis and paravertebral venous plexus, this absence is also responsible for retrograde blood flow which can contribute as a pathway for the spread of tumors or infections.

**Sympathetic trunk and splanchnic nerves**

The thoracic sympathetic trunk passes dorsal to the medial arcuate ligament or through the diaphragmatic pillars to become lumbar sympathetic trunk. The medial branches of
the lymph nodes innervate the aorta and bind with higher, lower and lower splanchnic nerves to descend oblique and lateral to the lower thoracic vertebrae. After crossing the diaphragmatic crura ending up in the celiac node.

ANATOMICAL VARIATIONS OF NORMALITY

Diaphragmatic crura

Unlike other congenital abnormalities, such as agenesis of the diaphragm, hiatal hernias Fig. 9 on page 21, Morgagni or Bochdalek, congenital anomalies of the pillars are usually detected incidentally on imaging tests and are asymptomatic.

The partial duplication of the diaphragm may affect the pillars, associated with cardiovascular malformations and disorders of the ipsilateral lung development. Diaphragmatic duplication is more common on the right side. The discontinuity between the crura of the diaphragm and lateral arcuate ligament is a normal variant which is seen in 11% of patients and should not be confused with diaphragmatic rupture.

Congenital anomalies of the inferior vena cava

Multiple congenital anomalies of the inferior vena cava associated with variations of the azygos and hemiazygos in the retrocrural space:

- Agenesis of the hepatic segment of the inferior vena cava continuing with azygos vein (0.6%), which may be associated with cardiovascular birth defects, asplenia and polysplenia Fig. 6 on page 18. With MDCT and MRI we can recognize enlarged azygos as a parallel to the aorta, defined tubular structure behind the diaphragmatic pillars Fig. 7 on page 19 and continues with cranially arch of the azygos Fig. 9 on page 21.

- Absence of infrarenal inferior vena cava

- Duplication of the inferior vena cava inferior continuing with azygos and hemiazygos.

Malformations of "foregut"

Although usually located in the middle mediastinum (paratracheal or subcarinal region), foregut malformations can occupy the retrocrural space, such as pulmonary sequestrations, gastric or esophageal duplications Fig. 11 on page 22.
This type of malformation, which usually requires surgery to achieve a proper diagnosis in order to avoid possible complications (infection, neoplasia), should be recognized.

The lesions usually show a variable density without enhancement after intravenous contrast administration Fig. 12 on page 23. On MRI cystic lesions have a variable signal in T1-weighted sequences and hyperintense on T2-weighted sequences. The differential diagnosis must be established with other lesions of esophageal mucosa and submucosa as a leiomyoma Fig. 13 on page 24 Fig. 14 on page 25 and gastrointestinal stromal tumor.

**DIAPHRAGMATIC CRURA.**

**Tumors**

Primary tumors of the diaphragmatic crura are rare and include lipomas, desmoid tumors and muscle tumors (leiomyosarcoma and rhabdomyosarcoma).

Metastases to the diaphragmatic crura can occur locally or via hematogenous spread. Among the tumors that can infiltrate the diaphragmatic crura, we would emphasize pleural mesothelioma, malignant esophageal tumors, lung Fig. 15 on page 26 and melanoma. Similarly retroperitoneal tumors or liver Fig. 17 on page 28 in cranial progression can affect diaphragmatic crura.

**Inflammation**

By continuity, abscesses can affect cruras causing these to thicken.

**Trauma**

Similarly to the inflammation of the crura in trauma, we can find the thickening of cruras diaphragmatic Fig. 18 on page 29 however it is important to point out that there may be normal variations in thickness of these in function of respiration and patient age.

**LYMPH NODES**

Lymph nodes in dorsal diaphragmatic crura drain into the posterior mediastinum and diaphragm like the lumbar region. They are considered suspicious when the smaller diameter exceeds 6 mm.
The enlargement of the retrocrurals lymphs may be due to: inflammation, infections or, more frequently, tumors.

**Tumors**

Lesions to the genitourinary tumor Fig. 19 on page 30, gastrointestinal tract or lung can cause enlargement of the retrocrural lymph nodes. They can also occur in either Hodgkin's Disease or non-Hodgkin lymphoma Fig. 20 on page 31.

**Inflammation**

Processes such as sarcoidosis, linphangioleiomyomatosis and amyloidosis may manifest by an enlarged retrocrural space lymph node.

Enlarged lymph nodes with or without enhancement areas of low attenuation can be seen in mycobacterial infections or linphangioleiomyomatosis.

Entities such as disseminated tuberculosis, Mycobacterium-avium intracellulare complex and acquired immunodeficiency syndrome may also present with enlargement of retrocrural lymph nodes.

**TUMORS**

**Neurogenic tumors**

*Tumors arising from node cells*

They are most common in the posterior mediastinum and especially affect early childhood. They are located in the paravertebral region and can be malignant (neuroblastoma) and benign (ganglioneuroma). The age of presentation, bone metastases, tumor calcifications and patterns by CT and MRI will allow us to differentiate three types. While the TC has traditionally been used to assess these lesions, it is particularly useful for detecting calcifications, improved MRI assessment of the extent of the lesions.

Neuroblastoma, the most common of the three, is hypointense on T1-weighted sequences and hyperintense on T2-weighted sequences.

*Tumors arising from the sheath of nerves*
Neurogenic tumors like neurofibroma and neurilemoma are usually benign lesions. When they occupy the retrocrural space they usually appear low or on the distal thoracic sympathetic nerves or intercostal nerves, more usually in patients with neurofibromatosis Fig. 21 on page 32.

Neurilemomas are normally large lesions, encapsulated and can show cystic degeneration and peripheral calcifications. Often detected incidentally in asymptomatic patients with a predilection for the female and middle-aged.

Moreover, neurofibroma is non-encapsulated with a solid nature without cystic degeneration. On CT and MRI it appears as round hypodense lesions with homogeneous enhancement after administration of intravenous contrast.

Up to 10% of tumors arising from nerve sheath presented intraspinal extension to increase the size of the neural foramina, showing an "hourglass" appearance.

**Paraganglionic tissue derived tumors**

The paraganglioma is an aggressive lesion that can also settle in the retrocrural space, it originates in the paraganglionic cells of the aortic-sympathetic chain, usually in the 2nd-3rd decades of life.

When they occur, patients have hypertension and excess catecholamine production. They are lesions of varying size (range 1-6 cm) with homogeneous contrast enhancement. Because of its high vascularity it should be considered in the differential diagnosis when spontaneous retrocrural or retroperitoneal bleeding occurs.

**Mesenchymal tumors**

The most common are from fat such as lipoma, liposarcoma.

Among the germ cells we distinguish between teratoma, seminoma, non-seminoma Fig. 22 on page 33. Most malignant germ cell tumors affect 20-35 year-old males, while seminomatous are usually large, well-defined masses of homogeneous density, the nonseminoma show signs of aggressivity such as irregular margins and areas of hemorrhage and necrosis on the inside.

On rare occasions, we can find sarcomatous lesions (rhabdomyosarcoma, leiomyosarcoma, malignant fibrous histiocytoma, fibrosarcoma) and others (leiomyoma, lymphangioma, hemangioma and hemangiopericitoma) Fig. 23 on page 34

**lymphoma**
Normally retrocrural and paraaortic lymph node involvement is associated with mediastinal or retroperitoneal lymph node involvement in both Hodgkin's disease and non-Hodgkin lymphoma Fig. 20 on page 31.

Up to 50% of non-Hodgkin lymphomas have paraaortic lymphadenopathy compared with 25% of patients with Hodgkin's disease. Also, in Hodgkin's lymph, the nodes are usually larger, surrounding and displacing the aorta increasing the distance between the aorta and spine, characteristic finding of the NHL.

VASCULAR

The aorta is the largest within the retrocrural space anatomical structure. Pathological processes of the aorta which can manifest in its retrocrural course include aortic aneurysm Fig. 24 on page 35, ruptured aneurysm Fig. 25 on page 36, pseudoaneurysm, inflammations (aortitis), ulcers Fig. 26 on page 37, occlusion Fig. 27 on page 38, dissection Fig. 28 on page 39 and Fig. 29 on page 40.

Periaortic hematoma

It appears as an infiltration of soft tissue density of the fat in the retrocrural space. We will find hematomas in patients with trauma Fig. 30 on page 41 or by aneurysm rupture, or in Translumbar access to the aortograms approach. In a clinical context, associated radiological findings such as aortic size, abnormal contour, contrast extravasation and mass displacement due to the effect of adjacent structures will help identify the cause and nature of periaortic hematoma.

Findings associated with aortic hematoma in case of trauma can be diaphragmatic rupture, vertebral or ribs fractures, while in the case of hematoma associated with dissection we can confirm the existence of proximal aortic laceration.

chronic periaortitis

A lot of inflammatory diseases of probable autoimmune nature can produce this. Fibrotic periaortic changes often seen among other causes include giant cell arthritis, Takayasu disease, periaortic fibrosis and inflammatory aortic aneurysm. The delayed enhancement on both CT and MRI of periaortic inflammatory tissue suggests aortitis.

Infectious aortitis
Produced by bacteria or mycobacteria, the imaging findings are similar to chronic periaortitis.

**other alterations**

- Increased flow in the azygos and hemiazygos in portal hypertension, vena cava occlusion Fig. 31 on page 42 Fig. 29 on page 40 Fig. 32 on page 43 and other central vein occlusion.

- Intercostal varices, ascending lumbar veins and venous plexus perivertebral hypertrophied in portal hypertension Fig. 31 on page 42 Fig. 33 on page 44 and central venous occlusion.

- Enlargement of intercostal arteries that cross the retrocrural space can be seen in severe chronic lung inflammation, active tuberculosis, chronic thromboembolism, chronic obstructive pulmonary disease and bronchiectasis.

- Compression of the renal artery diaphragmatic crura can cause renal artery stenosis and renovascular hypertension. It would occur in atypical origin, superior and posterior origin of the left renal artery which is trapped in the retrocrural space by the diaphragmatic crura.

**INFLAMMATIONS**

**retroperitoneal fibrosis**

Retroperitoneal fibrosis is an uncommon chronic inflammation of unknown etiology characterized by replacement of retroperitoneal tissues, especially fat tissue of soft tissue density which characteristically affects the retroperitoneum, although it may extend beyond the diaphragmatic pillars, producing a fibrosing mediastinitis.

Fibrosis appears as a soft tissue injury which encompasses the aorta, acting variably after administration of intravenous contrast, depending on the activity of the plate.

They are hypointense lesions on T1-weighted sequences and variable signal (typically less than fat but higher muscle) on T2-weighted sequences.

A nesting occurs without displacement of vascular structures, unlike lymphadenopathy.

*lipomatosi*
The hypodense fat is easily characterizable by different imaging techniques. It is observed in patients treated with corticosteroids and antiretrovirals in patients with HIV infection.

**spondylosis deformans**

It is a very common degenerative disease of the spine manifesting with osteophytes in the anterolateral aspect of the vertebral bodies Fig. 34 on page 45. If bone osteophytes are large enough in the lower thoracic region, they may extend to the retrocrural space.

Osteophytes are more frequent on the right side, probably because the pulsatility of the descending aorta on the left side hinders the production of bone.

**pancreatic pseudocyst**

Pancreatic pseudocyst encapsulates, containing necrotic debris, pancreatic secretions and degradation products in the blood, originating in the pancreas after pancreatitis.

Transhiatal extent of pancreatic inflammation explains the unusual location of pancreatic pseudocyst in the retrocrural region and the posterior mediastinum. The history of alcohol abuse, recurrent pancreatitis and elevated amylase and lipase blood can guide the diagnosis of the lesion of a cystic nature in the retrocrural space.

**infections**

Paraspinal abscesses are associated with tuberculous spondylitis and infectious spondylitis, especially Staphylococcus. Tuberculous spondylitis is more common in developing countries, but its incidence is also increasing in developed countries by the resurgence of tuberculosis, particularly in patients with AIDS.

Infectious spondylitis is more common in men, predominantly by the sixth decade of life. There are some predisposing factors: diabetes, immunosuppression, intravenous drug use, sickle cell anemia and urinary tract infections.

Radiologically manifested by the destruction of somatic platforms and the intervertebral disc Fig. 35 on page 46. Due to the deformity of the vertebral bodies compressive phenomena may occur.

CT and MRI are the imaging of choice for the detection of paraspinal abscesses in patients with infectious spondylitis. However, MRI is superior to CT in the detection of the pathology component disc. The injection of intravenous contrast increases the sensitivity for detecting spondylodiscitis and paraspinal abscesses.
The retrocrural abscess may manifest as one or more fluid collections with obliteration of fat planes with the retrocrural anterolateral displacement of the crura. The presence of calcifications suggest chronic indolent, being more common in infectious processes such as tuberculosis.

Tuberculous spondylitis is more common in the low dorsal and high lumbar vertebrae, hence the existence of a retrocrural abscess in a spondylitis patient suggests the diagnosis of tuberculosis.

OTHER

hematoma

Traumatic fractures of the last dorsal vertebrae Fig. 36 on page 47 and first lumbar may be associated with paravertebral hematoma which can occupy the retrocrural space. They are usually associated with high-energy trauma or in patients on anticoagulant treatment or the existence of underlying pathology such as ankylosing spondylitis and who may predispose the development of fractures and appearance of paraspinal hematoma Fig. 37 on page 48).

Hematoma occurs by tearing the anterior longitudinal ligament and disruption of small anterior vertebral branches arterial and venous plexus.

Retrocrural space hematoma are easily detected with CT, characterized by an infiltration of fat retrocrural soft tissue density areas behind cruras diaphragmatic which can move above the aorta.

pneumomediastinum

The presence of gas within the retrocrural space outlining the aorta occurs in the pneumomediastinum Fig. 38 on page 49. In conventional radiology radiolucence with acute angles that look like a "V" can be appreciated

pleural effusion

Pleural effusion is possibly the most common abnormality in this space Fig. 39 on page 50. Only 15 cm3 are sufficient to detect fluid in the space retrocrural as much by MDCT as RM.
**extramedullary hematopoiesis**

Extramedullary hematopoiesis is an unusual process that can manifest as soft tissue density lesions in the retrocrural space. This condition normally arises as a compensatory mechanism in patients with longstanding anemias producing a reactive erythropoietic tissue expansion that is extruded from the vertebral bodies and bilateral rib arches paraspinal masses appearing later Fig. 40 on page 51.

It has been described in patients with thalassemia, sickle cell anemia, heteditaria spherocytosis, myelosclerosis and other myeloproliferative disorders.

CT and MR density lesions appear as distinct soft portions at multiple levels in the paravertebral region which enhance discretely after the administration of intravenous contrast. The presence of fat in the lesions is characteristic. MR behaviour will depend on the hematopoietic activity of the lesion, so if it is active they are intermediate density lesions on T1 and hyperintense on T2 (relative to muscle), appreciating a discrete increase of signal the after administration of intravenous contrast. However, inactive lesions with hypointense on both T1-weighted sequences and T2 due to iron deposition in the lesions.

**Images for this section:**
Fig. 1: CT anatomy of retrocrural space. RMP (coronal and sagittal)
Fig. 2: Anatomic detail (axial sections) of retrocrural space limits and content.
Fig. 3: lateral arcuate ligament
**Fig. 4:** Chylli cystern. MPR axial-oblique axial and sagittal planes
Fig. 5: Left Chylii Cystern. Anatomic variant of normal
**Fig. 6**: Dilatation of the azygos vein in retrocrural situation. It can be seen in isolation or associated with Polysplenia.
Fig. 7: 57 year-old woman with dilated azygos vein. 24 hours before the patient was operated for pancreatic neoplasia, accidental injury during surgery celiac trunk with multiple hepatic infarcts. The patient was exitus.
Fig. 8: Enlarged azygos-hemiazygos venous
Fig. 9: Hiatal hernia in patient with liver disease with venous collateral circulation and hypervascular hepatic focal lesion (HCC)
Fig. 11: hypodense cystic lesion corresponding to esophageal duplication cyst distal esophagus. Reconstructions in sagittal, coronal and axial planes CT and echo-endoscopy
Fig. 12: 19 year-old male. Incidental finding on chest radiography cough and expectoration. Posterior mediastinal cystic lesion with calcification in whitewash. Esophageal duplication cyst
Fig. 13: posterior mediastinal mass irregularly displacing the esophageal lumen. Semiologically submucosal injury likely nature. esophageal leiomyoma
**Fig. 14:** Esophageal leiomyoma. Appearance echo-endoscopy and MDCT (sagittal and coronal reconstructions planes).
Fig. 15: 69 year-old male affected by lung cancer with mediastinal and hilar lymph node extension. In the extension study a solid tumor lesion in left diaphragmatic crura was detected.
Fig. 16: 53 year-old female had an operation for melanoma in left foot two years ago. General syndrome with loss of weight of 15 kg in the last two months. In extensive exploration of monitoring tumor spread infiltrating the left diaphragmatic crura.
Fig. 17: 45 year-old male, ex-IDUs, HIV infection. Weight loss and fever for two months. Infiltrative lesion (ultrasound, CT and MRI) in segment VII liver infiltrating right suprarenal and right diaphragmatic crura. The possibility of liver abscess so it was punctured in the absence of purulent material trucut biopsy was performed with CT-guided with the outcome of lymphoma was raised.
Fig. 18: 67 years male anticoagulated with Warfarin. Right lumbar pain and decreased hematocrit. Darge retroperitoneal hematoma right diaphragmatic crura encompassing ipsilateral
Fig. 19: 77 year-old Male in control CT for prostate neoplasia with lymphadenopathy retrocrural left nodes
Fig. 20: Lymphoma
Fig. 21: 31 year-old woman, , was operated on 3 years ago due to fibroma in popliteal fossa. Skin lesions. Studied for possible neurofibromatosis type 1. posterior mediastinal masses (malignant
Fig. 22: retrocrural recurrence in patients with a history of nonseminoma germ cell tumor involved. Elevation of tumor markers
**Fig. 23:** partially septate cystic tumor in the right retrocrural space. cystic lymphangioma
Fig. 24: Aneurysm of aorta in the thoracoabdominal junction, partially thrombosed
Fig. 25: Rupture of aortic aneurysm at the toracoabdominal junction
Fig. 26: 79 year-old male, smoker, active alcoholism, dyslipidemia, hypertension. Aortic ulcers.
Fig. 27: 78 year-old man with a history of colon neoplasia intervened. Multiple liver recurrence. In MDCT control occlusion of infrarenal abdominal aorta (Leriche syndrome)
**Fig. 28:** Aortic dissection (type A) which extends abdominal aorta
Fig. 29: Aortic dissection (type A) which does not affect abdominal aorta
**Fig. 30:** 33 year-old male, precipitated from 7 meters. Severe hypotension. Aortic injury with laceration and pseudoaneurysm formation
Fig. 31: 35 year-old woman with right upper quadrant pain. In ultrasound solid mass in the right adrenal area. CT mass infiltrating inferior vena cava with thrombosis. Leiomyosarcoma of the inferior vena cava
**Fig. 32:** Patient operated on one year ago due to leiomyosarcoma of the inferior vena cava. Dilation of the azygos vein and right renal atrophy.
Fig. 33: venous collateral circulation (periesofagic) in patients with liver disease (the right with hepatocarcinoma) and signs of portal hypertension
**Fig. 34:** Partial dorsal spondylosis commitment retrocrural space. Patient with prostate neoplasia with bone tumor and nodal spread retrocrural.
Fig. 35: Male, 65 years old, with fever of unknown origin. Pain low / high lumbar spine. Streptococcus was isolated in blood. Spondylodiscitis with involvement of somatic platforms and discrete prevertebral soft tissue lesion occupying space retrocrural
Fig. 36: Male, 33, precipitate of 5 meters. Clinically section under spinal dorsal level. Unstable vertebral fracture with prevertebral hematoma
**Fig. 37:** 33 year-old woman. Attempted suicide with liver lacerations, splenic and fractured L1 prevertebral hematoma in retrocrural space
Fig. 38: 72 years Woman. Accident. Subcutaneous emphysema, pneumothorax, pulmonary distress pattern and pneumomediastinum (retrocrural space)
Fig. 39: left pleural effusion
Fig. 40: extramedullary hematopoiesis
Conclusion

Despite being a small anatomical region there is a wide variety of benign and pathological conditions in this region.

Knowledge and understanding of normal and variants of normal anatomy is essential to approximate accurately the diagnosis of benign and pathological conditions that can affect this compartment.

Personal information

Juan Carlos Quintero Rivera

Complexo Hospitalario Universitario de Ourense (CHUO)

Radiology Department

Chief of department: Manuel Angel Trillo Lista

Spain

e-mail: juan.carlos.quintero.rivera@sergas.es

References

· Kurosaki, Y.; Fujikawa K. Left-Sided Cisterna Chyli. AJR:175, November 2000 1462


· Restrepo CS, Eraso A, Ocazionez D, Lemon J, Martinez S, Lemons DF. The diaphragmatic crura and retrocrural space: Normal imaging appearance,